Murata
value report
2022

muRata

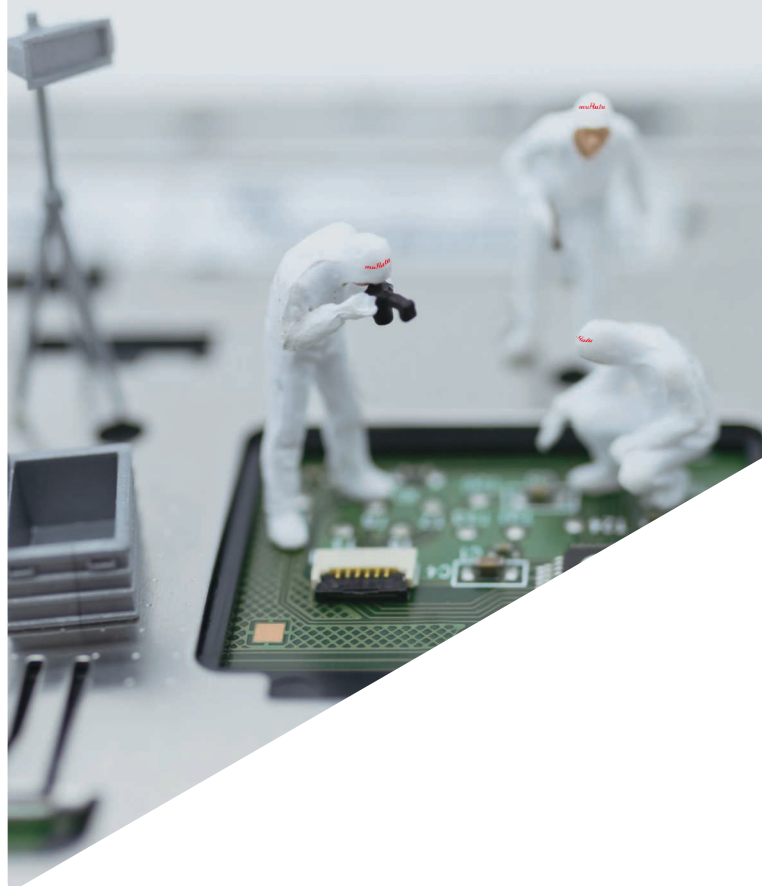INNOVATOR IN ELECTRONICS

The purpose of publishing Murata value report

Murata value report is published with the purpose of sharing Murata's value creation story with shareholders, investors and other stakeholders, thereby co-creating value through constructive dialogues with stakeholders and creating value through resonance with employees.

Contents of the report

In this report, Murata shares its most key values, where Murata wants to be and the value creation story to achieve that goal, initiatives for sustainable growth, and the management capital that supports these efforts, as well as the messages from the management.

Participation by the management

This report is considered a tool to communicate with stakeholders to co-create value, and the President and other management members actively participated in its creation. The creation of this report is supervised by the director in charge of IR, Masanori Minamide.

Changes from last year

To help our readers better understand Murata's sustainable value creation, we have focused on the following three points.

- Reviewing the value Murata has provided to date through the Medium-term Direction 2021 and other initiatives, and presenting Murata as it is today.

- Explaining our growth strategies around the 3-layer portfolio and Medium-term Direction 2024, and showing Murata's future efforts toward where Murata wants to be in our long-term Vision 2030.

- Deepening understanding of our efforts to maintain and strengthen Murata's management capital and core competencies, which create a continuous cycle of social value and economic value.

Use of this report within the company

This report is available in Japanese, English and Chinese and is shared with all employees. Many of our departments also use the report as a tool to increase understanding of Murata's value creation story.

Editorial policy

Murata published its Environmental Report in 2002, and has been disseminating the company's information since 2 0 1 0 in the Murata Report, a brochure that combines its Company Guide, CSR Report (Corporate Social Responsibility Report) and Annual Report (Financial Data). With stakeholder dialogue being an important consideration, Murata decided to publish the "Murata value report" from 2 0 1 8 to better convey Murata's activities to improve corporate value over the medium to long term. In addition to the growth strategies to realize the future envisioned by Murata, CSR (Corporate Social Responsibilities) activities that the company has been continuously implementing are described in this report. We created and edited this report by summarizing the main points with the aim of communicating Murata's activities in a concise manner. Detailed financial data and information on CSR activities that cannot be included in this report, as well as environmental data from each business site, are posted on the Murata website. Please refer to the tool map to obtain the required information

Term of this report

Between April 1, 2021 and March 31, 2022

* Some activities taking place on or before March 31, 2021, or on or after April 1, 2022, are covered in the report as well.

Organizations reported on

Murata Manufacturing Group

(Murata Manufacturing Co., Ltd. and 90 subsidiaries inside and outside of Japan)

Reference guidelines

ISO26000, The International Integrated Reporting Council (IIRC) "The International Integrated Reporting Framework," Ministry of Economy, Trade and Industry "Guidance for Collaborative Value Creation"

Future forecasts, projections and plans

In addition to past and current performance, this report contains future forecasts, predictions, plans, and other information. Such forecasts, predictions, and plans are assumptions or judgments based on information available at the time of publication, and hence include uncertainties. Accordingly, the results of future operating activities and future phenomena may differ from forecasts, predictions, and plans in this report.

* In this report, "Murata" refers to the Murata Manufacturing Group as a whole, and "Murata Manufacturing Co., Ltd." to Murata Manufacturing as a standalone company.

Contents

Status of incorporation into ESG indices

The company has been incorporated into multiple indices as a company proactively engaged in ESG. We will continue our proactive initiatives and information disclosure going forward.

2022 MSCI ESG Leaders Indexes Constituent

THE INCLUSION OF Murata Manufacturing Co., Ltd. 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 Murata Manufacturing Co., Ltd. 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.

2022 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX

THE INCLUSION OF Murata Manufacturing Co., Ltd. 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 Murata Manufacturing Co., Ltd. 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.

2022 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

THE INCLUSION OF Murata Manufacturing Co., Ltd. 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 Murata Manufacturing Co., Ltd. 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.

FTSE4Good

FTSE Blossom Japan

FTSE Blossom Japan Sector Relative Index

S&P/JPX Carbon Efficient Index

2022 Sompo Sustainability Index

ECPI Sense in sustainability

Tool map

Murata disseminates a variety of information using various tools to communicate with its stakeholders. In addition to the information contained in this report, a variety of information on Murata's products and CSR activities can be found on our website. We will continue to proactively disclose information to allow our stakeholders to better understand Murata.

Main disclosure tools

Summary

Financial information
- Earnings release conference materials
- Financial results
- Annual securities reports
- Historical financial data

Murata value report (this report)

- Corporate information meeting materials
- Product information website
- CSR website
- Technology articles website

Nonfinancial information

Details

The origin of Murata

– The founder's passion that has been inherited for over 70 years –

Founder Akira Murata, at the age of 18, started out by helping with his family's business of manufacturing insulators. When he went on an unauthorized sales promotion to expand the business, his father scolded him, saying, "I won't allow you to steal customers from others." What he learned from his father was that rather than competing for profits, he should think about realizing mutually satisfying and prosperous relationships with other companies. His father told him he could develop new businesses if he opened up independent fields that were different from those of other companies.

From there, Akira taught himself how to make special ceramics and chemical ceramics, which other companies were not engaged in. The following year, he devised a muffle furnace (for chemical experiments) for making insulators, which he invented himself. This was the first product to symbolize Akira's ingenuity. It was granted a utility model patent. From then on, the company continued to demonstrate its commitment to using its own unique innovations and ideas to create products that did not exist anywhere else in the world. It gave rise to a phrase in the Murata Philosophy, "We contribute to the advancement of society by creating innovative products and solutions," which is inherited as a valued part of our company today.

Founder
Akira Murata

Murata Philosophy

We contribute to the
advancement of society
by
enhancing technologies and skills
applying scientific approach
creating innovative products and solutions
being trustworthy
and, together with all our stakeholders,
thankful for the increase in prosperity.

Muffle furnace (for chemical experiments) and utility model patent

Meaning of Murata's existence in society

– Working at Murata contributes to society –

"Wishing the presence of Murata to be pride and a source of joy in local communities."

This was Akira's message conveyed in 1959 to all employees. The first sign showing this statement was placed at the entrance to the building of Fukui Murata Manufacturing (Fukui Prefecture) at the company's 8th anniversary celebration (and completion ceremony of the new building). Fukui Murata Manufacturing was established as a temporary factory called the Murata Research Institute in 1951 within the Ceramic Laboratory. Since then, it has overcome various difficulties including cash flow difficulties due to a recession and responding to a sudden expansion of production due to an economic recovery.

When the company established Fukui Murata Manufacturing Co., Ltd., Akira realized that the growth of the business to that point was thanks to the support of the local community and the enthusiastic teamwork of employees. His message conveyed his hope that he continues to build even closer ties with the community while renewing the employees' sense of mindfulness and joy about their work.

Since then, we have been guided by Murata's founding spirit, which we define as contributing to sustainable growth in all the countries and regions where we operate, while having joy and pride about doing so.

At Murata, we share this message with our employees in order to practice the Murata Philosophy.

A sign installed at Fukui Murata Manufacturing Co., Ltd. in 1959
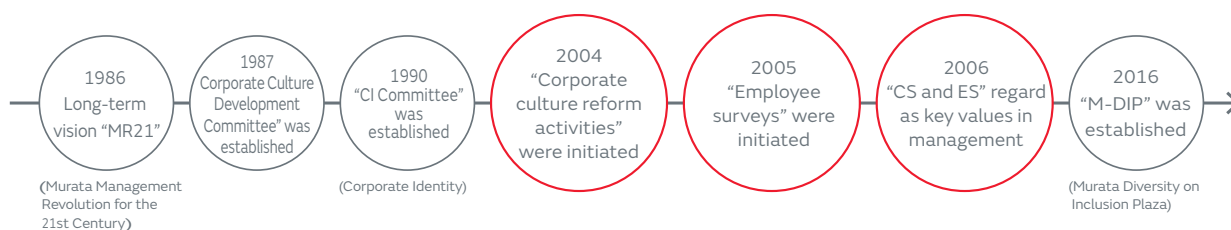
Murata's Purpose

Organizational capabilities we strengthened by overcoming crises
– Murata's vision of CS and ES as key values in management –

After the IT bubble burst in the early 2000s, Murata's sales and profit growth stagnated for several years and were slow to recover compared to our competitors. However, there was a strong sense of affirmation of the status quo within the company, with employees lacking a sense of crisis. Troubled by this situation, the management team identified the problems with the current situation. They found that the organization was rigid, with no sense of flexibility or speed. Customer-oriented awareness was weak. There was a conservative, negative attitude of waiting for instructions. While the factors behind this situation varied from management strategies to systems and mechanisms, management concluded that transforming the corporate culture, which affects everything, would lead to a breakthrough away from the company's sluggish business performance. In 2004, Murata began its corporate culture reform activities with four goals: CS (continuing to create and provide value that is recognized by the customer); focus on on-site activities; responding quickly to environmental changes; and valuing creativity and the spirit of challenge through free and open discussions. The process started with a self-assessment on management quality at each business site. This involved in-depth discussions by employees on the question of valu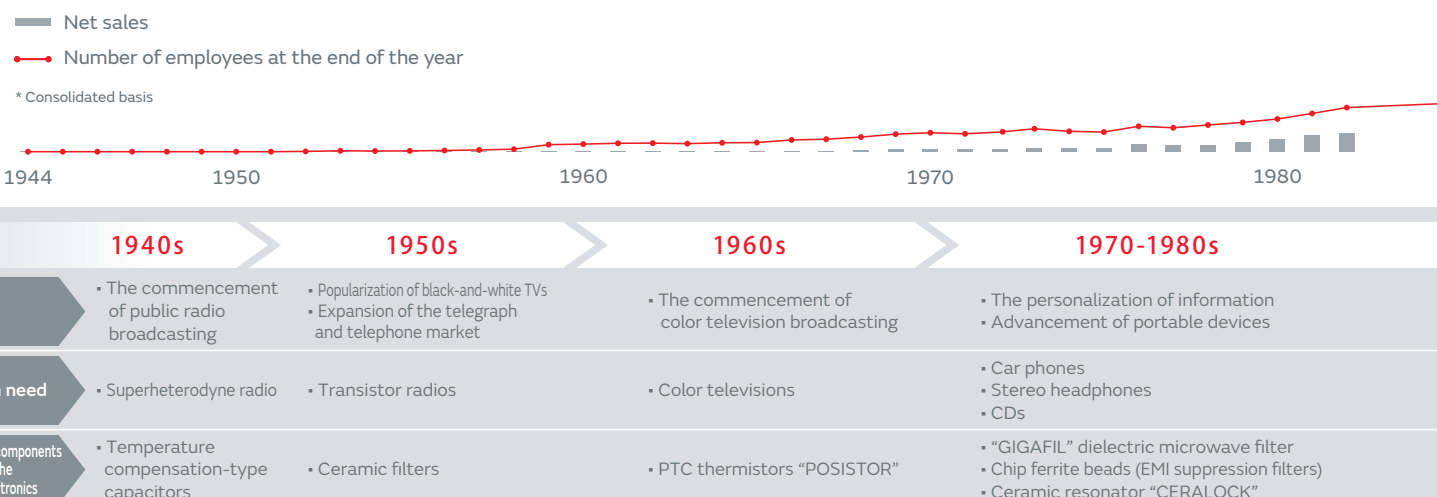es that are important to all members of the organization. Through this process, employees rediscovered the key values of the Murata Philosophy. They also realized that they themselves needed to define where Murata wants to be and its vision. In addition, in 2005, an employee surveys conducted to obtain data on the actual situation revealed that employees were exhausted and the organization was suffering from big company disease. Murata had previously set customer CS as the number one goal of its corporate culture. However, after seeing the results of the employee surveys, management found that if the employees who create and provide value to customers were exhausted, CS could not be achieved and there would not be future for Murata. We recognized that it was imperative to realize ES (every employee achieves satisfaction and continuing growth through the performance of their work duties), and regard "CS and ES" as key values in our management in 2006.

This crisis was a defining moment that prompted the company to carry out reforms focusing on its corporate culture. After that, we continued to steadily make efforts to adapt our business to environmental changes, while keeping the Murata Philosophy as our foundation. That has led to our unique corporate culture and organizational capabilities that Murata has today.

Corporateculture initiatives following establishment of Murata Philosophy

History of Murata

	1940s	1950s	1960s	1970-1980s
Events	• The commencement of public radio broadcasting	• Popularization of black-and-white TVs • Expansion of the telegraph and telephone market	• The commencement of color television broadcasting	• The personalization of information • Advancement of portable devices
Electronics in need	• Superheterodyne radio	• Transistor radios	• Color televisions	• Car phones • Stereo headphones • CDs
Murata's electronic components that contributed to the advancement of electronics	• Temperature compensation-type capacitors	• Ceramic filters	• PTC thermistors "POSISTOR"	• "GIGAFIL" dielectric microwave filter • Chip ferrite beads (EMI suppression filters) • Ceramic resonator "CERALOCK"

Murata is changing the future

– Because we are Murata, we have the power to change the future for the better –
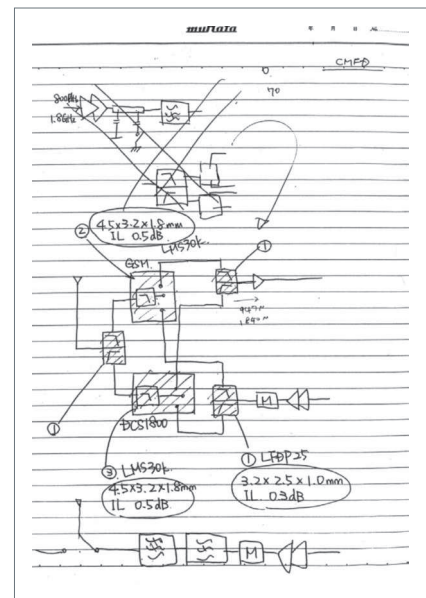
Murata has used its unique technology to grow its business. Guided by the passion of our founder, we have strengthened our organizational capabilities while overcoming various crises. Murata has unique flexible and advanced technological capabilities and a free corporate culture that allows employees to demonstrate their individual abilities. These are great strengths for the company as an innovator in the electronics industry. We find joy in creating products and solutions that contribute to the development of society. We want to use our technology to build a better future. Murata will continue to take on challenges.
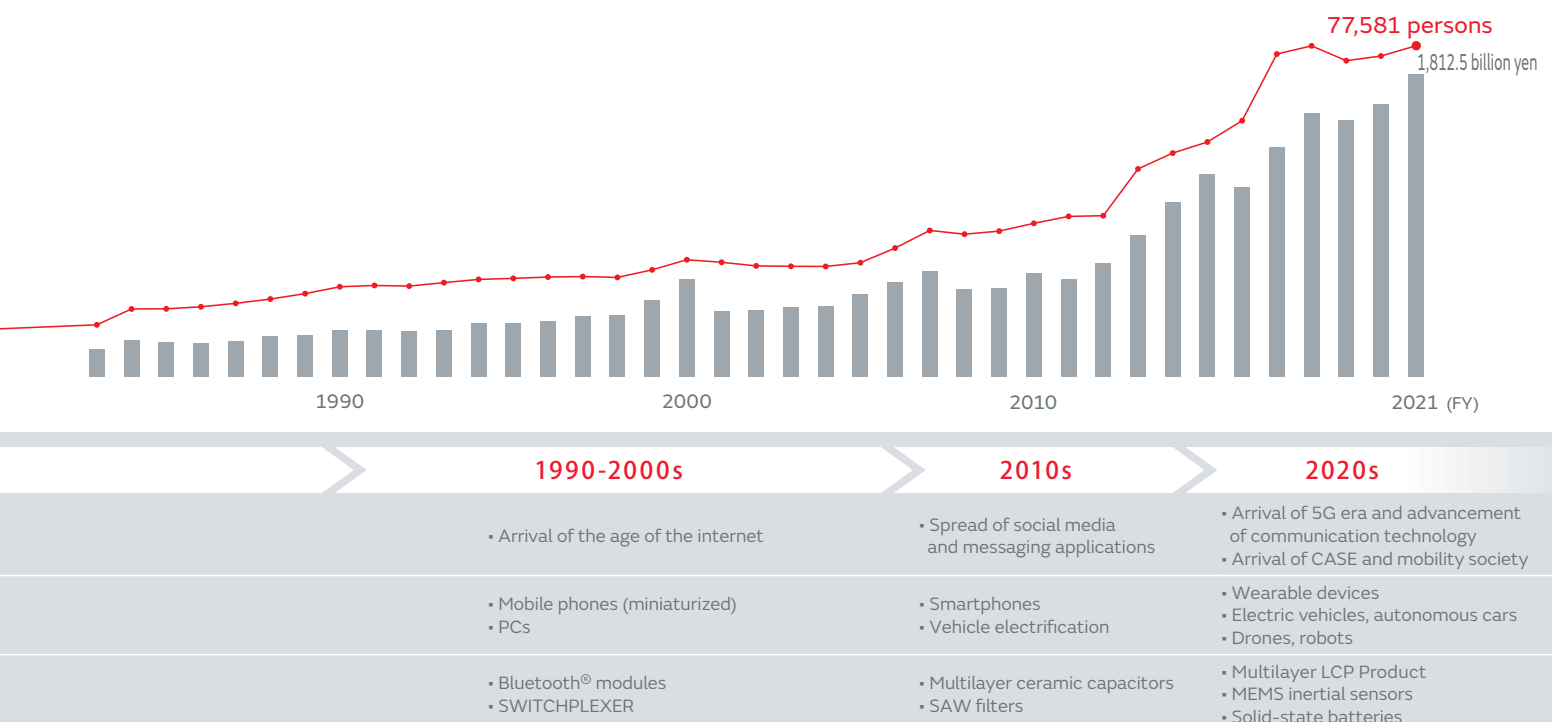
The passion that Murata puts into its technology

From early on, Murata read the trend toward space saving and multifunctionality and pursued lighter, thinner, shorter and smaller design and high efficiency, developing modular products that combine multiple parts. One example is SWITCHPLEXER. This diagram was drawn by Nakajima, the current President, while having a yakitori dinner with a customer. The customer talked about the need to make communication parts more compact. Hearing this, Nakajima had an idea for a way to make Murata's unique technology useful to the customer and to society.

Dialogue with our customers is the first step toward making society better. Murata has a large number of people who are passionate about technology. They bring our technology to engage in dialogue with customers. That is how we have expanded our value. Going forward, we will work to further add new value in areas such as software. We will continue to create products and solutions that contribute to resolving social issues.

Drawing of the module product "SWITCHPLEXER," created by Nakajima at the dinner table

77,581 persons

1,812.5 billion yen

1990   2000   2010   2021 (FY)

| 1990-2000s	2010s	2020s
• Arrival of the age of the internet	• Spread of social media and messaging applications	• Arrival of 5G era and advancement of communication technology • Arrival of CASE and mobility society
• Mobile phones (miniaturized) • PCs	• Smartphones • Vehicle electrification	• Wearable devices • Electric vehicles, autonomous cars • Drones, robots
• Bluetooth® modules • SWITCHPLEXER	• Multilayer ceramic capacitors • SAW filters	• Multilayer LCP Product • MEMS inertial sensors • Solid-state batteries

6

An innovator in the electronics industry

Murata creates unique products and provides cutting-edge electronic components for all sorts of electronic devices in everyday life, including smartphones and PCs. We will continue to provide new value in the expanding business opportunities such as communications, mobility, environment and wellness, and contribute to the enrichment of society.

Murata products

Murata holds a large market share in a wide range of products, from our mainstay capacitors to inductors (coils), filters, lithium-ion batteries, sensors, and other components, and modules comprised of these components.
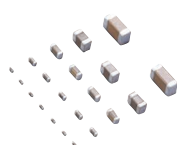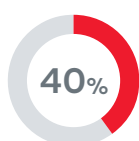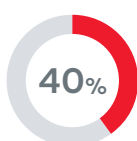
Murata's global share	Murata's global share	Murata's global share	Murata's global share
40%	**40%**	**60%**	**50%**
Multilayer ceramic capacitors	**Noise suppression products EMI suppression filters**	**Radio frequency (RF) inductors**	**SAW filters**
Indispensable to electronic circuits, these components serve to store and adjust flows of electricity.	These components eliminate electromagnetic noise and protect delicate electronic circuits.	Electronic components that are used in exchanging high-frequency signals, such as wireless signals in smartphones.	The filters that extract only the required portion of a radio signal are key devices in high-frequency circuits.
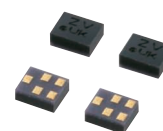
* The global market share of our main products is just our estimate. It may vary depending on the market and usage.

Product name	The number of products required					
	Smartphone	Laptop PC	Tablet PC	Automobile	Digital television	Smartwatch
Multilayer ceramic capacitors (MLCCs)	1,000	800	600	5,000–8,000	600	350
EMI suppression filters (EMIFIL®)	60	60	90	270–400	50	30
Inductors (coils)	300	30–50	200	400–500	30	30–50
SAW filters	4–70	—	4–70	—	—	—
Multilayer LC filters (filters, couplers, baluns, etc.)	2–20	2–4	2–20	2–8	2	3–6

* Our estimate. The above figures are the number required per unit and not the number of our products used.

A diverse range of products for a diverse range of applications

Devices/modules
45.0%
815.0 billion yen

Others
0.7%
13.2 billion yen

Components
54.3%
984.3 billion yen

Functional devices
5.9%
106.4 billion yen

Battery and power supply
10.0%
180.4 billion yen

High frequency devices and communications modules
29.1%
528.2 billion yen

Inductors/ EMI filters
10.8%
195.8 billion yen

Capacitors
43.5%
788.5 billion yen

Fiscal 2021 Sales by Segment

Industry and others
11.9%
216.3 billion yen

Communications
43.0%
779.2 billion yen

Home appliances
10.1%
183.2 billion yen

Computers
16.4%
297.5 billion yen

Mobility
18.6%
336.3 billion yen

Fiscal 2021 Sales Application Category

Asia and others
15.6%
282.9 billion yen

Greater China
54.8%
993.9 billion yen

Japan
9.2%
166.9 billion yen

Europe
9.0%
162.6 billion yen

The Americas
11.4%
206.3 billion yen

Fiscal 2021 Sales by Area

* Used the new segment of net sales classification following the change in fiscal 2022.
* Sales by Area are classified based on the location of the customers.

Global business expansion and development

Murat's ratio of sales outside of Japan to net sales exceeds 90%. Murata's strength lies in our network that enables us to offer high-quality products and excellent services in locations all around the world through global business expansion and development and in our ability to anticipate and elicit a wide range of our customers' needs by leveraging our network.

Subsidiaries outside of Japan
59 companies

Subsidiaries in Japan
30 companies

Number of employees outside of Japan
45,290 persons

Number of employees in Japan
32,291 persons

Europe (9 companies)
The Netherlands
Finland
France
Germany
Italy
The United Kingdom

Greater China (22 companies)

Japan (30 companies)

The Americas (13 companies)
The United States
Brazil
Canada
Mexico

Asia and others (15 companies)
Singapore
South Korea
Malaysia
The Philippines
Thailand
Vietnam
India
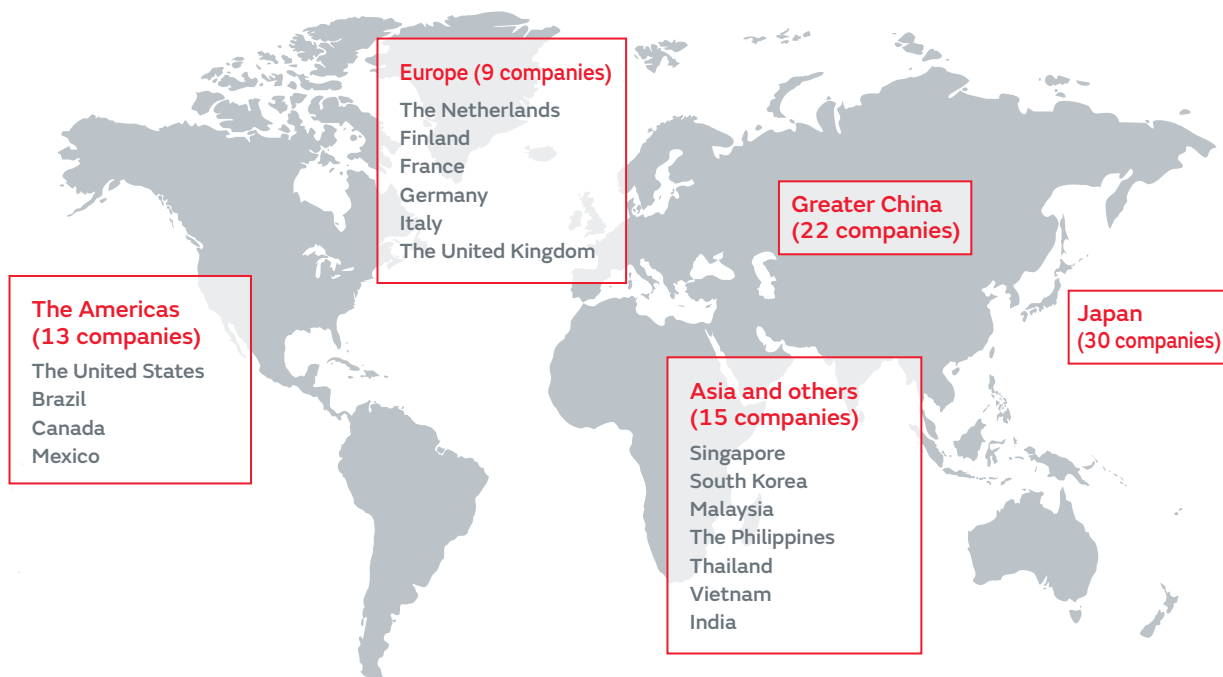
Financial

Net sales and ratio of operating income to net sales (Billion yen or %)
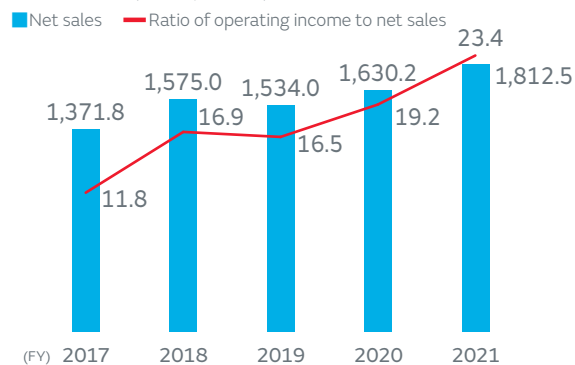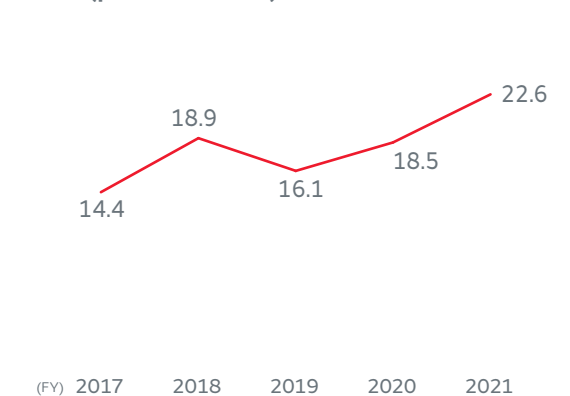
■ Net sales ── Ratio of operating income to net sales

(FY)	2017	2018	2019	2020	2021
Net sales	1,371.8	1,575.0	1,534.0	1,630.2	1,812.5
Ratio of operating income to net sales	11.8	16.9	16.5	19.2	23.4

ROIC (pre-tax basis)* (%)

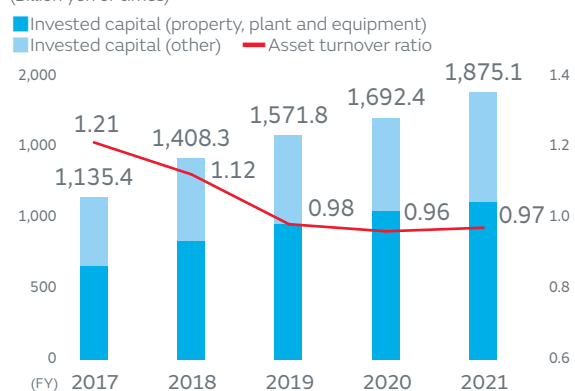| (FY)	2017	2018	2019	2020	2021
ROIC	14.4	18.9	16.1	18.5	22.6

ROIC (pre-tax basis) = Operating income / Invested capital (Property, plant and equipment + Inventories + Trade accounts receivable − Trade accounts payable)
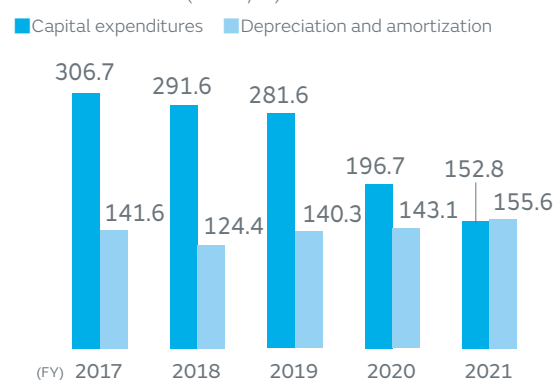
Invested capital*1 and asset turnover ratio*2 (Billion yen or times)

■ Invested capital (property, plant and equipment)
■ Invested capital (other)
── Asset turnover ratio

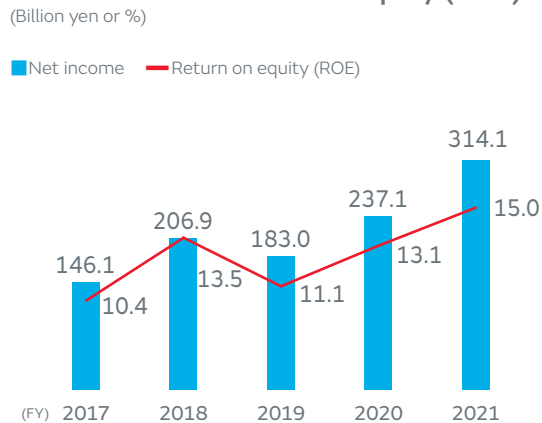| (FY)	2017	2018	2019	2020	2021
Invested capital	1,135.4	1,408.3	1,571.8	1,692.4	1,875.1
Asset turnover ratio	1.21	1.12	0.98	0.96	0.97

*1 Average at the beginning and end of the fiscal year
*2 Asset turnover ratio = Net sales / Invested capital

Capital expenditures and depreciation and amortization (Billion yen)

■ Capital expenditures ■ Depreciation and amortization

(FY)	2017	2018	2019	2020	2021
Capital expenditures	306.7	291.6	281.6	196.7	152.8
Depreciation and amortization	141.6	124.4	140.3	143.1	155.6

Net income and return on equity (ROE) (Billion yen or %)

■ Net income ── Return on equity (ROE)

(FY)	2017	2018	2019	2020	2021
Net income	146.1	206.9	183.0	237.1	314.1
Return on equity (ROE)	10.4	13.5	11.1	13.1	15.0

Return to shareholders (Billion yen or %)

■ Total cash dividends ── Payout ratio ── Dividend on equity (DOE)

(FY)	2017	2018	2019	2020	2021
Total cash dividends	55.4	59.7	62.1	73.6	83.2

4%
30%
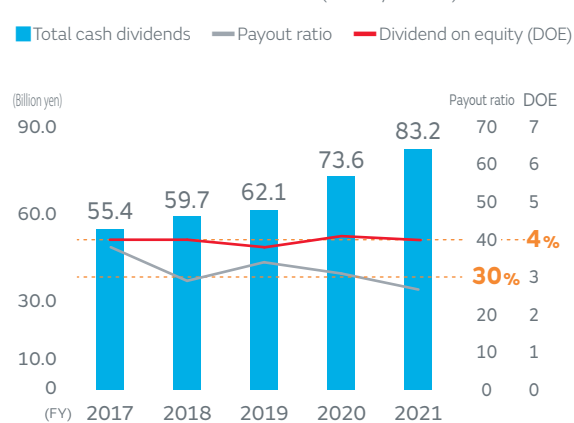
ESG

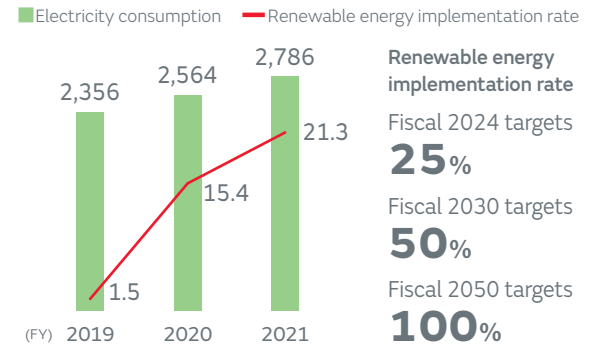### Amount of GHG emissions and emissions reduction rate vs. fiscal 2019

(kt-CO_2e/year or %) (Scope: Scope 1 + Scope 2)

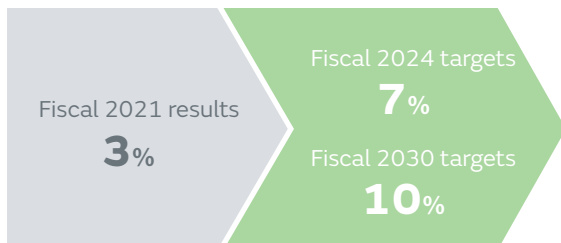■ Total GHG emissions — Emissions reduction rate vs. fiscal 2019

1,609
1,435
1,400
13.0
10.8

(FY) 2019 2020 2021

Emissions reduction rate vs. fiscal 2019

Fiscal 2024 targets
20% reduction

Fiscal 2030 targets
46% reduction
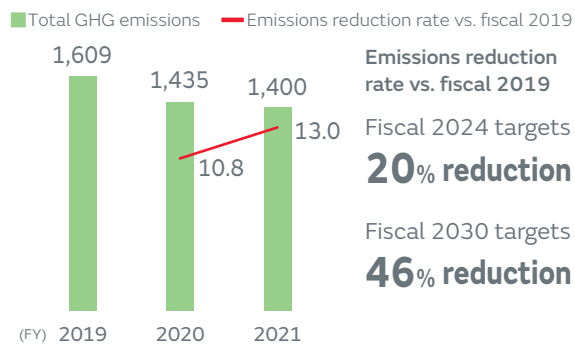
Electricity consumption and renewable energy implementation rate

(Thousand MWh/year or %)

■ Electricity consumption — Renewable energy implementation rate

2,356
2,564
2,786
21.3
15.4
1.5

(FY) 2019 2020 2021

Renewable energy implementation rate

Fiscal 2024 targets
25%

Fiscal 2030 targets
50%

Fiscal 2050 targets
100%

Percentage of overseas indirect employees* with experience working at other sites

Fiscal 2021 results
3%

Fiscal 2024 targets
7%

Fiscal 2030 targets
10%

* Applies to overseas local staff, excluding those transferred from Japan to overseas

Positive employee engagement response rate

Fiscal 2021 results
68%

Fiscal 2024 targets
**70% or higher**

Fiscal 2030 targets
76% or higher*
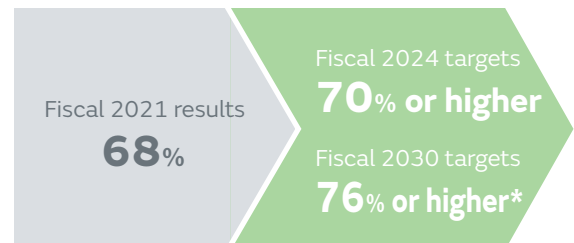
* Above average level of global high-performing companies

Ratio of women in technical fields for new graduate in career-track hiring and ratio of women in managerial positions (%)

(Scope: Murata Manufacturing Co., Ltd. on a non-consolidated basis)

— Ratio of women in technical fields for new graduate in career-track hiring
— Ratio of women in managerial positions

10.7 15.8 13.0 14.9 15.5

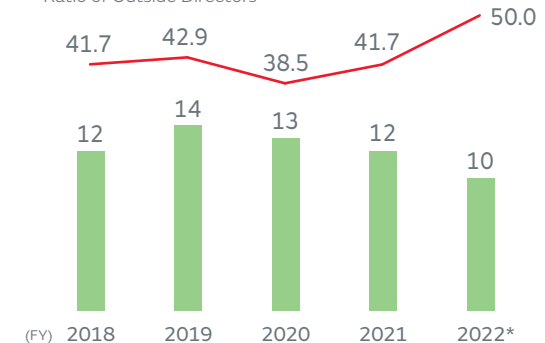0.8 1.5 1.8 2.4 3.0

(FY) 2018 2019 2020 2021 2022*
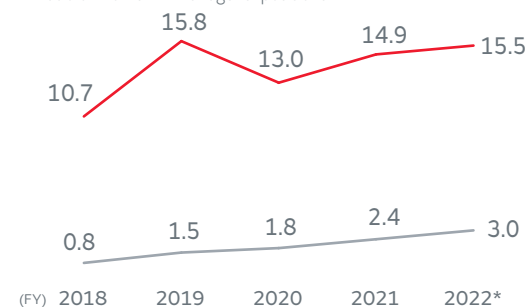
* As of April 30, 2022

Number of Members of the Board of Directors and ratio of Outside Directors

(persons or %)

■ Number of Members of the Board of Directors
— Ratio of Outside Directors

41.7 42.9 38.5 41.7 50.0

12 14 13 12 10

(FY) 2018 2019 2020 2021 2022*

* As of June 30, 2022

One year at Murata

In fiscal 2021, as the final fiscal year of Medium-term Direction 2021, we strengthened our efforts to make the telecommunication and automotive markets, our focus markets, the pillars of our medium- to long-term earnings. For example, we acquired Eta Wireless Inc. and Resonant Inc. with the aim of obtaining new telecommunication technology, and we have developed new products such as capacitors and inductors for automotive applications.

In addition, in order to achieve one of the themes of our Medium-term Direction, "harmonization between people, organizations, and society," we have been working to meet the goals of RE100. As part of this effort, we have equipped Kanazu Murata Manufacturing Co., Ltd. (Fukui Prefecture) to operate on 100% renewable energy.

Product-related news

Commercialization of the world's smallest* broadband inductors for in-vehicle PoC systems

https://www.murata.com/en-global/news/inductor/power/2021/0422
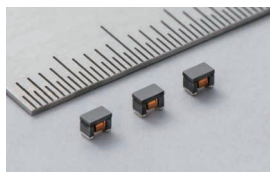
Commercialization of the world's smallest* PTC thermistors for overheat sensing
—Contributing to even higher density mounting and smaller size of mobile devices—

https://www.murata.com/en-global/news/thermistor/ptc/2021/0427

Development of the world's smallest* UWB modules with acceleration sensors and Bluetooth® Low Energy
—Incorporating ICs from Qorvo and Nordic to help realize smart cities, smart factories, etc.—

https://www.murata.com/en-global/news/connectivitymodule/ultra-wide-band/2021/0830

| April 2021 | May | June | July | August | September | October |

Corporate news

Opening of Murata Mirai Mobility, an exhibition facility for automotive products, and Murata Interactive Communication Space, a facility to promote knowledge collaboration

https://corporate.murata.com/en-global/newsroom/news/company/general/2021/0520

By strengthening our proposal capabilities in the in-vehicle system market and creating new business, we aim to offer industry-leading innovative products and technology.

Acquisition of Eta Wireless Inc., the developer of Digital Envelope Tracking Technology that can dramatically reduce the power consumption of RF circuits
—Contributing to extended battery life in 5G devices and other wireless devices—

https://corporate.murata.com/en-global/newsroom/news/company/general/2021/0903

Launch of AIRSual, a space visualization solution that helps to avoid "Three C's (closed spaces, crowded places, close-contact settings)" by promoting adequate ventilation based on predictions of CO_2 concentration
https://www.murata.com/ja-jp/news/other/other/2021/0524 (in Japanese)

CO_2 concentration and other environmental information about the space is measured using sensors. This information is then displayed visually on a screen on a smartphone, PC or tablet to encourage appropriate ventilation.

AIRSual
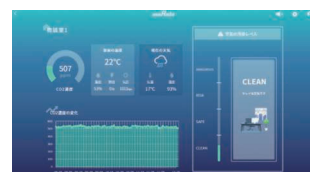
Commercialization of a space-saving antenna array integrated module for mmWave 5G that can emit radio waves in two directions
—Contributing to stable communication, compact size, and lower cost of 5G compatible devices—

https://www.murata.com/en-global/news/connectivitymodule/mmwave-rf/2021/1013

Commercialization of the industry-leading* 4.3 μF capacitance three-terminal MLCC in 0402 inch size for automotive applications
https://www.murata.com/en-global/news/capacitor/ceramiccapacitor/2022/0224

Development of the world's smallest* UWB module incorporating NXP Trimension
—Contributing to accurate position detection in IoT devices—

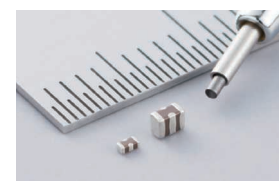https://www.murata.com/en-global/news/connectivitymodule/ultra-wide-band/2021/1105

Joint development with Michelin of highly durable RFID modules that are capable of stable communications even inside tires
—Start of installation in Michelin products; to be used in passenger car tires from 2024—

https://www.murata.com/en-global/news/rfid/rfid/2021/1213

* At the time of the announcement, based on the Company's research.

November   December   January 2022   February   March

Murata selected for CDP's climate change A list for 1st time
https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2021/1208

Murata has made the climate change A List compiled by CDP, a global environmental non-profit organization, for the first time. This evaluation is given to companies that are leading the world in setting targets, taking initiatives, and disclosing information on their climate change countermeasures.

Entered into contract with Chugoku Electric to procure green energy and more
—Renewable energy to constitute 50% of power at production sites in the Chugoku region by fiscal 2030—

https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2022/0331

Thanks to this agreement, all Murata Manufacturing production sites in the Chugoku region will be operating on 50% renewable energy by fiscal 2030, which will help to meet the goals of the RE100 global environmental initiative.

Acquisition of Resonant Inc. with its proprietary XBAR technology, the filter design know-how that can handle 5G
https://corporate.murata.com/en-global/newsroom/news/company/general/2022/0329

Kanazu Murata Manufacturing's plant set to operate on 100 percent renewable energy
—Reducing the load on social infrastructure by deploying the largest storage battery system in the Hokuriku region—

https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2021/1012

Acquisition of SBT certification for greenhouse gas reduction targets
https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2022/0120

Murata has received SBT certification under the international initiative SBTi (Science Based Targets Initiative) for having formulated science-based targets for reducing greenhouse gas (GHG) emissions by fiscal 2030 in conformance with the Paris Agreement.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

We remain focused on implementing our growth strategy to realize our long-term Vision 2030 and aim to become the Global No. 1 Component & Module Supplier.

President
Norio Nakajima

Marking record high performance in fiscal 2021

We will start with reviewing the previous Medium-term business plan, Medium-term Direction 2021, and its final year of fiscal 2021 business results. During the past three years, we have steadily worked on three issues to build a strong management base: practicing portfolio management, dramatically increasing productivity and building a stable supply system, and harmonization between people, organizations, and society. As a result, we generated record performance in fiscal 2021. This was due to strong demand for notebooks and tablets for telecommuting and online education, as well as demand from customers to build up components inventories due to supply-chain disruptions and the increased electrification of automobiles. In addition, although activities were restricted by the COVID-19 pandemic continuing from fiscal 2020, we took measures to prevent the spread of infection and continue operations centered on manufacturing sites which contributed greatly to our success.

With regard to the financial targets of the Medium-term Direction 2021, we achieved our targets of the ratio of operating income to net sales of at least 17% and ROIC (pre-tax basis) of at least 20%. However, we did not reach our net sales target of 2 trillion yen. This was due to external factors such as the impact of the U.S.-China decoupling on smartphone-related businesses and difficulties in procuring semiconductors and other materials, as well as internal factors such as strategic downsizing of the smartphone connectivity module and lithium ion secondary battery businesses due to a decline in profitability.

In addition, the asset turnover ratio, a component of ROIC, fell below the target of 1, which was an indicator that improvements were insufficient. While this is positive in that we are making upfront investments for the future, we believe that we need to ensure that these investments are linked to business expansion going forward. Although these three years have produced considerable results, there are still issues that need to be addressed. The Medium-term Direction 2024, which began in fiscal 2022, will surmount these challenges.

Determining the direction of changes in the environment toward 2030 and responding to risks and opportunities

In November 2021, we announced Vision 2030 as our new long-term direction. When we take a high-level, long-term look at the future of the electronics industry, we believe that the direction towards technological innovation in each market for 2030 and the shift to a sustainable society will not waver. In terms of the telecommunications market, 5G is currently used primarily in smartphones since its widespread in 2020, but we expect its use to expand to non-smartphone applications in the future – particularly as high speed and increased capacity continue to evolve from its 4G predecessor. However, the other two features, multiple concurrent connections and low-latency communication, are major technological innovations unlike anything seen before. If the number of concurrent connections increases 100 times, it will be possible to connect automobiles to infrastructure for autonomous driving, connect all plant equipment for remote operation, or connect to medical networks for advanced home medical care, and such market growth will be dramatic. In the mobility market, the electrification of automobiles is progressing rapidly, and we believe that sector will continue to grow steadily as other functions are enhanced.

In our efforts toward achieving a more sustainable society, we were one of the first in the industry to become a RE100 member, which marks our commitment to addressing and leading the way to help combat climate change. The foundation of this is pursuing social value with economic value by utilizing electronic components and solutions we can provide. In terms of the global situation,

geopolitical risks are increasing due to the situation in Ukraine. We are also anticipating future changes as India, Southeast Asia, and African countries will rise to prominence due to demographic changes. Considering these developments, we will act quickly to build a business structure that does not rely on a single resource, and we will also take steps to develop multiple supply chains. ()

Linking "yet-to-be realized financial value" to future profit generation through a continuous cycle of social value and economic value

In Vision 2030, we defined Murata's long-term vision that addresses changes in the business environment and our roadmap to achieve sustainable enhancement of corporate value. In this vision, Murata aims to become the Global No. 1 Component & Module Supplier by innovating to create a continuous cycle of social value and economic value and contributing to the enrichment of society, making Murata the leading choice for customers and society. In the process of achieving this ideal, we believe that not only the members of the technology development team, but also the manufacturing site, the employees who support them, and the organization as a whole can innovate in response to technological and social issues, such as creating new technologies, implementing them in society, and expanding the scale of their implementation.

Social value is commonly referred to as nonfinancial value as opposed to financial value. However, I call this "yet-to-be realized financial value" because efforts to shift to a sustainable society will create business opportunities if we leverage our wisdom and expertise. For example, climate change initiatives will not survive in future markets unless they are addressed today. Although the upfront investments will be significant, we will make this a sustainable effort by linking what is now yet-to-be realized financial value to profit generation.

We have contributed to environmental conservation by making electronic components smaller to reduce waste and decreasing the loss of filters used in smartphones to cut down on battery

drain. Secondly, we will develop a business that contributes to the environment through means such as supplying the market with storage battery systems that combine our lithium ion secondary batteries and power supply modules. Thirdly, we will contribute to solving social issues by promoting the use of renewable energy and energy conservation in business processes, including our own production processes. We believe that these efforts to address climate change are only possible with the cooperation of our suppliers. As such, we will continue to build strong and trusting relationships with our suppliers to ensure that we are the best choice for them as we work throughout our entire supply chain to achieve our greenhouse gas emissions reduction targets.. (▶ P.41 Management that creates a continuous cycle of social value and economic value)

Opening up new electronics possibilities with 3-layer portfolio management as the core of our growth strategy

I would like to share our thoughts on the 3-layer portfolio that are the core of our growth strategy. After joining Murata, I worked on capacitor design and development then transitioned to high frequency solutions. I felt that my job changed dramatically during that time. In the design and development of capacitors, we created standards and developed them horizontally, whereas in high-frequency-related work, we had a greater opportunity to discuss technical aspects with individual customers. Through this experience, I realized that even though we manage electronic components in the same way, each business requires a completely different approach and set of unique skills. When we try to capture these different business models, we decided to use a 3-layer portfolio concept. The first layer is the standard-products business such as capacitors and inductors. The second layer is the application-specific components business such as RF modules, lithium-ion secondary batteries, and sensors. The third layer is new businesses. The change in disclosure segments implemented in fiscal 2022 was met with some opposition. However, it is my belief that it is necessary to improve management

transparency and engage in dialogue with stakeholders to enhance corporate value. The features of each layer of the 3-layer portfolio and our initiatives for growth are as follows. (▶ P.45 Practicing 3-layer portfolio management)

As the first layer, we develop and supply products that serve as the infrastructure for electronics. We can project the direction of technological innovation and demand required over the next decade can be projected, and competitors are moving their businesses in the same direction. Under these circumstances, what we need to do is to remain absolutely competitive in the cutting-edge technology areas where we are currently ahead, and to build a solid supply system to meet medium- to long-term demand growth.

In the case of multilayer ceramic capacitors, we must be the first to respond to trends towards miniaturization and higher capacitance for smartphones and wearable devices and higher voltage for mobility applications. Regarding supply, even as production reaches more than one trillion units per year, production capacity will need also increase annually by approximately 10%per year. By steadily addressing these issues, we intend to secure and maintain our overwhelming competitive advantage going forward. Murata's unique vertically

integrated manufacturing system allows us to quickly address problems that arise in black-box production and internal processes, which are major factors in establishing a competitive advantage. Although it is sometimes pointed out that we have our own production facilities and ample assets, our view is that vertical integration is the source of our strength and something to pursuing intentionally.

The second layer requires responding to specific customer needs and establishing differentiating technologies that will enable us to outperform our competitors. As with first layer , we will leverage our unique technologies and manufacturing expertise which hawse have refined through vertical integration, such as ceramics and high-frequency technologies. In addition, we will procure elemental technologies that we do not own through strategic M&As.

In the high frequency devices and communications modules category, such as RF modules and SAW filters, we acquired Eta Wireless Inc., which has digital ET technology to reduce power consumption of RF circuits, and Resonant Inc., which has XBAR technology to design filters for 5G, in order to acquire the necessary technology for 2024 and beyond, in 2030. By combining these acquired technologies with Murata's proprietary technologies, we hope to create a state of technological superiority for the telecommunications market by 2024. Regarding our connectivity modules, we are reviewing our business portfolio and focusing on mobility and IoT applications. As the market for 5G infrastructure and other technologies expands, we will manage our portfolio by identifying the required architecture needs early.

With battery and power supply, we reviewed our business portfolio of lithium ion secondary batteries. We are scaling back our smartphone business and focusing on areas that require high output, such as power tools, gardening tools, and vacuum cleaners where we can leverage our strengths. Because there is still insufficient supply capacity for future demand, we will not hold back on capital investment to increase production capacity.

In the area of sensors, we are focusing on mobility applications. Based on the technology of VTI Technologies of Finland, which we acquired in 2012, we have products such as inertial sensors

with high characteristics utilizing 3D-MEMS technology and ultrasonic sensors developed in-house. We believe that demand for these products will grow as the level of autonomous driving increases and safety equipment is enhanced.

New segment classification (FY2022 -)

Segments	Net sales classification	Main products
Components	Capacitors	Multilayer ceramic capacitors
	Inductors/ EMI filters	Inductors EMI suppression filters
Devices/ modules	High frequency devices and communications modules	SAW filters RF modules Multilayer ceramic devices Connectors Connectivity modules Multilayer resin substrates (Multilayer LCP Product)
	Battery and power supply	Lithium-ion secondary batteries Power supply modules
	Functional devices	Sensors Timing devices (Resonators)
Others		Solutions business, Medical products, Machinery manufacturing, etc.

Historically, the work of component & module suppliers referred to the area of first-layer components. However, as RF circuits have become more complex over the decades, the area of second-layer devices and modules has also become the work of component & module suppliers. As a change in the definition of parts and customers occurs, we believe that this trend will continue, leading to an expanded third layer of future business. It is anticipated that the customers targeted by the third layer will not all be familiar with electronic devices and design, as is the case now. Customers will demand products that combine hardware and software, such as components and modules. If we can provide a solution that combines components and software and can also be installed during the manufacturing process, our customer base will be much broader than before. Meanwhile, it is also necessary to demonstrate the effectiveness of such solutions. Since the technology and experience we have developed to date have not been sufficient for building such a new business model, we are taking on various challenges without limiting ourselves.

Currently, the first and second layers are the pillars of our business. However, in the long run,

there is a risk that electronic components will become commoditized as the market and society change. As such, we need to diversify our revenue sources. In portfolio management, we tend to focus on business renewal. Alternatively, it is also necessary to nurture the business over an extended period of time. There has been difficulty in discerning this. It took about 20 years for capacitors to become a major earner, and the RF modules that I worked on were under pressure to be discontinued until the business foundation that we have today was established. We will nurture the third layer to become a pillar of our business in 2030 and beyond while carefully monitoring the results as we take on this challenge.
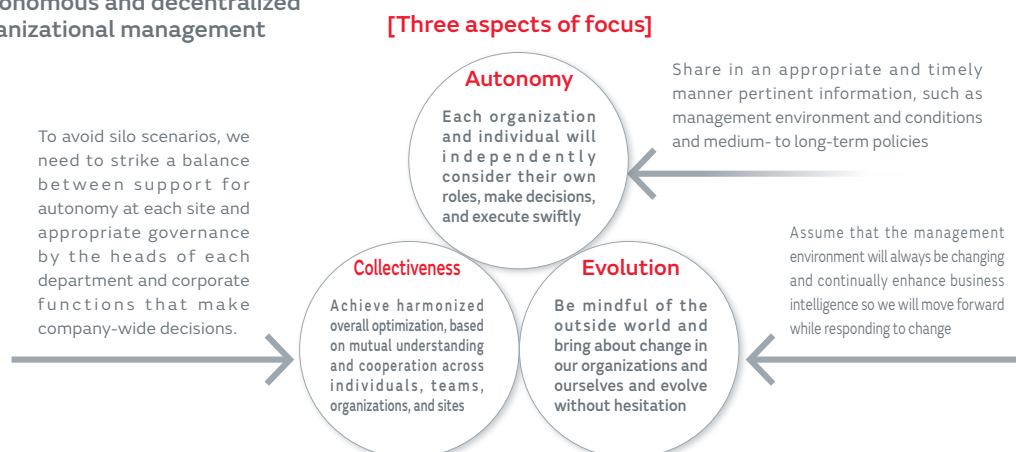
Realizing an organization where autonomous decentralized organizational management is achieved through diverse human resources and a shared management philosophy

Under the Medium-term Direction 2024, the first phase of Vision 2030, the company set a net sale target of 2 trillion yen and the ratio of operating income to net sales and ROIC (pre-tax basis) of at least 20% each. Regarding social value, we set goals related to the environment, as well as diversity and ES related to human capital. With regard to human capital, we have focused on improving the work environment by investing in employee training and implementing work style reforms. I will again discuss diversity and autonomous and decentralized organizational management as they relate to these goals.

Because we manufacture products through vertical integration, no job can be done by a single person. We know that when people work together, it creates a sense of belonging and togetherness that helps set Murata apart. Meanwhile, going forward there will be an increasing number of situations in which specialized talent will be acquired, such as those who are skilled in digital transformation (DX) and those who possess special skills in certain fields, and new forms of employment may be introduced. However, as the number of employees with diverse backgrounds increases due to mid-career hires and M&As, we believe it is important to share our management philosophy and ensure that we are unified (inclusion) to ensure a diverse workforce. In M&As, we make acquisition decisions after determining whether the other party understands and is on board with Murata's Philosophy. With that in mind, I want to emphasize the importance of "diversity on inclusion" (DonI), not diversity & inclusion (D&I). We will continue to build on this concept to create opportunities for our diverse human resources to play an active role on a global scale.

Regarding autonomous and decentralized organizational management, since I took office as President, I have stressed its importance within the company, telling people that it is necessary to fulfill all three elements of autonomy, collectiveness, and evolution. In the past, our company demonstrated strength by optimizing each organization at each site and in each department. However, as I visited our locations, there were times when I felt that what was being done at one site was not being deployed at another or that people did not know

Autonomous and decentralized organizational management

[Three aspects of focus]

Autonomy
Each organization and individual will independently consider their own roles, make decisions, and execute swiftly

Share in an appropriate and timely manner pertinent information, such as management environment and conditions and medium- to long-term policies

To avoid silo scenarios, we need to strike a balance between support for autonomy at each site and appropriate governance by the heads of each department and corporate functions that make company-wide decisions.

Collectiveness
Achieve harmonized overall optimization, based on mutual understanding and cooperation across individuals, teams, organizations, and sites

Evolution
Be mindful of the outside world and bring about change in our organizations and ourselves and evolve without hesitation

Assume that the management environment will always be changing and continually enhance business intelligence so we will move forward while responding to change

what others were doing. In making decisions, it is imperative that we consider the bigger picture, rather than make decisions based on what is good for yourself. It is also important to pivot on an idea if the environment changes. We aim to evolve into a stronger organization by having each employee think independently, make decisions, and take quick action with an awareness of this overall optimization and response to change. I also believe that everyone will feel a sense of fulfillment and growth through the practice of these actions, which will lead to improved engagement. Although it will take time for autonomous and decentralized organizational management to permeate the company, we will work to increase employee understanding by providing opportunities for discussion across sites and departments and by developing examples of shared technologies at manufacturing sites. (▶P.59 Murata's human capital - Strengthening the human resources base and organizational capabilities)

Aim to enhance corporate value by implementing growth strategies and preparing for the future from a medium- to long-term perspective

In the current global economy, we have to closely monitor events such as monetary tightening by central banks in Europe and the US, shortage of power semiconductors for automobiles, production constraints due to the repeated spread of COVID-19, and soaring raw material and fuel costs. Amid an uncertain economic outlook, we feel there is a risk that our products will be directly affected by economic fluctuations due to the high market share of our products. However, even under these circumstances, instead of decreasing, we will invest where we must and strengthen our management base by taking on the challenge of streamlining, improving quality, and investing in differentiating technologies. In the core fields of communications and mobility, we will surpass competitors with our cutting-edge lighter, thinner, shorter and smaller technology. In the high-frequency area where our presence is declining, we will once again focus on our technology to make Murata the best choice. In addition, we will take this opportunity to promote the use of sensor networks and wireless systems

for facility management at plants that are expected to shift from over-operating conditions to standard operations where they have not been able to leverage 5G, and present our production sites and plants to customers as best-in-class models for elemental technologies. Demand for local 5G seems sluggish, partly due to the high initial investment. However, we intend to strengthen our proposal activities to our customers and create a market by introducing this technology to our production sites and accumulating empirical data through our own experience with its use in smart factories.

In our industry, medium- to long-term demand is growing steadily in all markets, including telecommunications, mobility, environmental (with a focus on energy), and wellness (centered on healthcare). In addition, companies now have a greater role to play in the transition to a sustainable society. We are well prepared for this and will strive to become the Global No. 1 Component & Module Supplier. We hope that stakeholders will also take a medium- to long-term approach when considering whether Murata is on the right path. We humbly ask for your ongoing support going forward.

18

Member of the Board of
Directors and Executive
Vice President
Director of Corporate Unit
Director of Corporate
Management Group
Masanori Minamide

Accelerate our growth strategy with strong financial and organizational capital
We will create a continuous cycle of social value and economic value through value co-creation with our stakeholders.

Vertically integrated model and matrix management supporting high profitability

In fiscal 2021, the environment was marked by dynamic situations as automotive customers were ordering more than needed to build up inventories. In parallel, the shortage of semiconductors constrained the production of various electronic equipment. Against this backdrop, we still achieved record highs in both net sales and operating income for fiscal 2021. Our ability to maintain a high ratio of operating income to net sales is due to our vertically integrated business model and management system.

We adopted a vertically integrated model that captures added value by conducting as much in-house as possible from materials to the development and manufacture of production processes and equipment. To remain competitive over the long term, we need to put our technology in a black-box, continue to create new products,

and increase our profit margins through product renewal. Our internal production process enables us to create new products ahead of competitors, work on improving product quality from the source, and build a system that can provide a stable supply of products from a medium- to long-term perspective, all of which contribute to our strength.

Another strength of the company is our established value chain, which consists of core competencies such as the power to read the future, the power to give shape to needs, and the power to deliver value. The business management system parallels the business model as it strengthens the value chain, incorporates customer needs, and develops technology laterally. Specifically, the business division organization is captured on the vertical axis, and the organization that manages production activities and other forms of site management is represented on the horizontal axis. Matrix management is conducted by linking a three-dimensional matrix organization that

includes the functional staff supporting these site organizations and the management accounting system. In addition, we introduced a divisional income system, including income by process and site and adopted an independent income system. As a result, the sites are characterized by a strong sense of ownership and cost. This successful harmonization of the corporate culture, business management system, and organizational structure have been the foundation of our high profitability. (▶ P.29 Murata's management capital and core competencies)

The concept and structure of ROIC management is well-established

We have been setting ROIC (pre-tax basis) targets since the Medium-term Direction 2021. Cost consciousness has been ingrained since the time of our founder, and our manufacturing department operated its business using an indicator called return on direct capital employed. Within this indicator lies the founder's desire to be mindful of output relative to invested capital in order to maximize capital investment. To maximize transparency, we began sharing the internal ROIC indicators in dialogues with our stakeholders.

Through activities to foster ROIC management principles, we want sites to understand that they key contributors by breaking down processes and incorporating the results of improvements such as inventory levels, equipment utilization rates, and defect rates into numbers. To further instill this, employees should be given a strong image that their actions are actually linked to the bottom line. That is one of our challenges going forward.

We also believe that ROIC should be improved over the long term and needs to be in harmony with CS and ES and social value, and ultimately enhance corporate value. We must not get caught up in short-term numbers at the expense of long-term value creation. We believe that co-creating value with our shareholders, investors, customers, suppliers, and other stakeholders, and improving ROIC will become consistent over the long term. To this end we will carefully evaluate the priority of each initiative.

Background and intention of treasury stock acquisition

In the fiscal 2021 financial results, we announced a share repurchase program. Our policy for returning profits to shareholders is to increase dividends in a stable manner, aiming for a dividend on equity (DOE) of 4% or more with a targeted payout ratio of 30%. The decision to acquire treasury stock was based on future operating cash flow projections and the level of investment for growth. Although our policy is to maintain 2.5 to 3.5 months of liquidity, we exceeded that level at the end of the fiscal year, which was one reason for the acquisition. We feel that shareholders and investors responded favorably to our first stock acquisition since 2011 because it was based on the premise that we would steadily invest in growth over the medium-to long-term.

Declaration of an approach in Medium-term Direction 2021 and importance of encouraging changes

Looking back on the Medium-term Direction 2021, I feel that as the company grew and became more difficult to align the management vector, we were able to progress as an organization by setting a medium-term focus to work on company-wide.

In "practicing portfolio management" as a measure to efficiently allocate resources from the perspective of company-wide optimization, we introduced a feasibility assessment model based on operational growth potential and ROIC to review our business portfolio and conducted M&As to acquire differentiated technologies. We also made steady progress in the automotive market, one of our focus markets, and were able to increase the percentage of net sales for this market to 18.6%, up 2.2% from fiscal 2018.

In "dramatically increasing productivity and

building a stable supply system," we built a solid supply system, especially in the component business. We focused on IT-based supply chain planning and worked on smart factories and data mining for quality improvement.

In the "harmonization between people, organizations, and society" category, while the initiative was in line with the overall social movement, I believe that since we set it as a priority issue three years ago it has led to a significant change in employee awareness and progress in a variety of initiatives. Specifically, we set and implemented key issues (materiality) and KPIs starting from social issues, and measured engagement indicators and identified issues through employee surveys. Among these issues, considerable progress was made in environment-related areas, such as joining the RE100 initiative and promoting renewable energy and energy-saving initiatives to achieve this, obtaining SBT certification, and disclosing financial information in accordance with the TCFD. In terms of system design, we introduced both an internal carbon pricing system and a sustainability investment promotion system. (▶P.37 Medium-term Direction 2021 review)

Teaming with stakeholders on our long-term Vision 2030

To sustainably enhance our corporate value, have formulated Vision 2030, a new long-term direction for 2030, and Medium-term Direction 2024, the first phase of the Vision 2030, which was announced in November 2021. In Vision 2030, we set "innovating to create a continuous cycle of social and economic value and contribute to the enrichment of society" capturing where Murata wants to be with "co-creating value with shareholders" at the center of that vision.

It takes a considerable amount of time before a continuous cycle of social value and economic value is created, specifically before the enhancement of social value can lead to the enhancement of corporate value. Between now and then, we are committed to best practices in management statements and company actions. As the person in charge of business management, I believe it is my responsibility to incorporate the concept of a continuous cycle of social value and economic value into the business management process. In other words, we strive to support institutional functions such as management accounting and position it as an key issue in dialogue with stakeholders.

In Medium-term Direction 2024, we set goals to achieve 2 trillion yen in net sales, a ratio of operating income to net sales of at least 20%, and ROIC (pre-tax basis) of at least 20%. Although we received some harsh feedback that these are conservative targets, in our view, they represent management's intention to achieve the ratio of operating income to net sales and ROIC targets while making the necessary investments to prepare for medium- and long-term opportunities and risks.

With regard to capital allocation of Medium-term Direction 2024, apart from the usual capital investment quota of 640.0 billion yen, we set aside 230.0 billion yen for a strategic investment quota related to our long-term perspective. In terms of this direction, we are considering investments in sustainability, IT infrastructure with a focus on DX, and risk management. We also intend to allocate a certain percentage to M&As, focusing on the acquisition of differentiated technologies and new business models to strengthen our 3-layer portfolio.

We clarified our capital allocations because we wanted to better communicate with stakeholders how much cash we earn and how it gets allocated. We also expect management to drive internal momentum by declaring the establishment of investment allocations. In fact, there have been cases where setting a strategic investment quota has led to the start of projects that the site had been hesitant to invest in.

Medium-term Direction 2024 capital allocations

FY2022-2024 plan	
In	Out (Billion yen)
Operating cash flow 1,250	Capital expenditure 640.0 (Land and buildings: 100)
	Strategic investment 230.0
	Shareholder returns 270.0
	Corporate bond repayment 110.0

Change-responsive management based on hypothetical thinking for the practice of the autonomous and decentralized organizational management

The company is committed to the practice of autonomous and decentralized organizational management, in which President Nakajima delegates as much decision-making authority as possible to the sites. However, to realize this goal, it is necessary to build a business management system that guarantees autonomy. One of these is the change-responsive management based on hypothetical thinking, which was set forth as a management transformation in Vision 2030. To respond to rapid changes in the business environment, we will take our business management processes to a higher levelbased on hypothetical thinking, which involves communicating success factors of the business and assumptions on which the business plan is based, incorporating them into KPIs as milestones, and effectively monitoring and managing them. Using this hypothetical thinking and a feasibility assessment model, we aim to achieve an environment where business divisions can autonomously and steadily manage portfolios within their businesses.

future leaders had several months of discussions as Readiness Project for 2030 to identify long term hypothetical risks and opportunities and how to leverage them. In this way, we are implementing change-responsive management based on hypothetical thinking from the standpoints of autonomous and decentralized business operations and the establishment of a long-term organizational structure.

To realize sustainable value creation, my responsibility is to evolve while building upon the management philosophy and strengths that Murata has developed over the years. In our value co-creation with stakeholders, we discuss our strategic scenario, commit to it, receive feedback through dialogue, and incorporate it in our management policies which we will continue to refine. We would like to ask all our stakeholders for their continued support throughout this cycle.

Change-responsive management based on hypothetical thinking

* Hypothetical thinking: Consider a variety of change hypotheses that could occur in our environment and adjust our course in response to change

Putting hypothetical thinking is the backcasting approach, which is required in building the long-term management base. In formulating Vision 2030, the current management team and potential

Member of the Board of Directors
and Senior Executive
Vice President
Director of Corporate Technology &
Business Development Unit
Executive in Charge of Medical
Products Business

Hiroshi Iwatsubo

We will accelerate our research and development initiatives based on the long-term perspective to realize sustainable value creation as an Innovator in Electronics.

Sharing a healthy sense of urgency with regard to pursuing proactive research and development

Murata's performance in fiscal 2021 marked a record high thanks to the support of our stakeholders. We believe that today's prosperity is the result of this group's ongoing efforts as well as the blossoming seeds of new technologies that our predecessors created and built upon. My major mission in this regard is to develop new technologies so that when our younger employees who will become Murata's future leaders look back 10 or 20 years from now they will say, "The seeds that the people before us planted brought Murata even greater prosperity."

Murata's legacy commitment to take on the challenge of creating new technologies stems from a long-term management perspective that the entire company shares a common sense of immediacy. In the constantly evolving electronics industry, it is already too late to start doing something when performance is weak. It is necessary to prepare in advance, envisioning what kind of value we can provide to the future society, while looking clearly ahead at the world 10 to 20 years ahead in terms of long-term technological innovation. Fortunately, Murata has strong intellectual, technological, human, and financial capital built up by our predecessors. We will use these forms of management capital to prepare for the future in research and development now while our performance is strong.

Seeds of innovation (accidental discovery)

IIn more than two years of the COVID-19

pandemic, online meetings became widespread, and we have been able to communicate more frequently than before, both domestically and internationally, internally and externally. This has allowed our research and development to proceed without major impact. However, we must take care not to focus only on discussing predetermined agenda items. As President Nakajima often says, important ideas can emerge from casual conversations such as when standing around talking after a meeting.

For example, while discussing a certain topic with a customer, an off-topic issue may arise. As Murata regularly develops technical proposals on such issues, before you know it, that business may become even more important than the project that was underway originally. In other words, what was previously invisible has the potential to grow into an important business.

Looking at Murata from the outside, it may seem that the company has created a profitable business by developing technologies for a market hawse have targeted from the beginning. However, it may be surprising to learn that many of the technologies used in Murata's successful businesses are also derived from things that were invisible. As I mentioned earlier, in the course of conversations including chatting with customers, we proposed Murata's elemental technologies to seed an idea that we had not originally envisioned. This led to unexpected high praise and business as a result. Murata's research and development has long valued this kind of serendipity and has never missed a commercial opportunity to develop its business.

Conversely, we believe that we are at a disadvantage if we rush to respond to issues without a vision. Specifically, if we see a need, it is likely that someone else is already working on it, and we can expect fierce competition. What Murata really needs to do is to increase the number of technologies that respond to issues that few see and create mechanisms that proactively create opportunities for innovation.

A mechanism to promote innovation – "KUMIHIMO Tech Camp with Murata"

I have personally observed Murata's research and development activities for many years. While our vertically integrated business model is one of our strengths, I feel that if we take a self-reliance approach and keep our technology in a black box too much, we will not be able to accelerate our technological development or generate innovative ideas. Not reaching beyond our current scope is a challenge we must face. Based on this, we would like to create "technology displays" to showcase our technology to customers and partners and promote "knowledge collaboration" to realize innovation. In this issue, I would like to introduce KUMIHIMO Tech Camp with Murata as an initiative we are focusing on.

The concept of this project is to provide Murata's sensors and modules to start-up businesses that have not had much opportunity to use them and to solicit ideas for new products, services, and solutions. To realize these ideas, Murata will work together with companies to support the process of prototyping, mass production, and sales. In other words, the idea is to create and realize new value together with partners by combining Murata's electronic components, the heart of Murata's technological capabilities, with the creative and innovative ideas

of start-up businesses. The project name, KUMIHIMO, is conveys the meaning of creating a new business that contributes to society together with participating partners, just like a kumihimo (braid), which is made by combining several layers of string together.

In the past, start-up businesses were unable to try Murata's products even if they wanted to due to credit management restrictions. To overcome that challenge, we radically changed our thinking and began to proactively create opportunities for start-up businesses to try Murata's products. Through these efforts, we come up with innovative ideas, and we will team with these partners to launch the solutions by leveraging our resources. We started this initiative in Japan last year. Several projects are underway, and we hope to expand the network overseas.

What is important about KUMIHIMO is that we grow together with start-up businesses by leveraging each other's strengths. We consider it most important to build trusting relationships between people, not only in this project, but also in collaboration and cooperation with people outside the company. We will create opportunities through a variety of mechanisms that will trigger "knowledge collaboration" and promote a change in the awareness of engineers within the company.
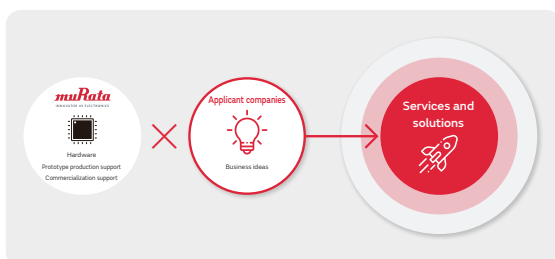
For details of the KUMIHIMO Tech Camp with Murata, please see here.
https://solution.murata.com/ja-jp/collaboration/kumihimo-tech-camp/

The Murata-style human resource development for "knowledge collaboration"

Future research and development activities must accelerate co-creation with people outside of the company. To accelerate this process, we believe it is necessary not only to develop technical education programs to improve the skills of engineers, but also to provide opportunities for engineers to be positively stimulated and challenged.

For example, we promote the "Venture Study Abroad Program" as an opportunity for employees to work at an actual venture-backed company for a certain period. Dispatched employees are under great pressure as they are expected to immediately perform active roles by their new location. However, human resources who have experienced trial and error on an individual level with constraints such as time and cost factored in, will have a different attitude toward their work -- and in no small part, a different perspective of their work will bear fruit. If people can use this experience to learn and understand the ideas and work styles of venture-backed companies and start-up businesses that are at the forefront of innovation, they will be able to leverage their experience to launch new businesses in the future and collaborate with other companies to enhance each other's corporate value.

Creating new business models with "visualization" as the keyword

In the long-term Vision 2030, Murata advocates the practicing of 3-layer portfolio management, with the third layer aiming to create a new solution-centered business model. The important point is not what the clear definition or targets of the third layer are, but whether or not a business model can be established that can be monetized based on Murata's technology.

In proceeding with technological development, I am promoting the concept of visualizing everything around us. One example is AIRSual, which visualizes CO₂ concentrations in real time. This system analyzes CO_2 concentration data collected by sensors based on AI technology and informs users of the need for ventilation several hours in advance. Other products include a fatigue stress meter, which visualizes human fatigue stress, and a soil sensor, which visualizes soil conditions in farmland. Visualization is not the ultimate goal of these products. We believe that new business opportunities lie in identifying who will pay for the use of visualized data and changing people's behavior beyond that.


Murata's soil sensors
Achieves simultaneous measurement of electrical conductivity, moisture content, and temperature conditions as environmental indicators related to soil and water quality. Continuous monitoring of such data contributes to solving various issues in agriculture, such as stabilizing yields, maintaining and improving crop quality, and reducing environmental burden by preventing excessive fertilizer application.

When we try to establish a new data visualization business model, we must consider that it has been difficult to quantify cause and effect relationships. We must now imagine how we can add value to that data and provide it to our customers. Naturally, there are areas that our resources alone are not sufficient to handle, and we are accelerating collaboration with companies from other industries, venture-backed companies, and start-up businesses.

Creating innovations that help resolve social issues

As stated in Vision 2030, Murata is seriously committed to solving social issues. In the challenging fields of environment and wellness, it is clear what needs to be done. However, I believe that no one has yet envisioned what kind of technology will be used to solve the issues. We would like to prepare for the changes we anticipate in 2030 and beyond by considering which of the future technologies are missing from Murata today. To this end, we are implementing the Preparation Project with members who will lead the next generation. Various efforts are underway internally to develop technologies from this long-term perspective. Some of which are disruptive to existing technologies, and we hope to introduce them gradually.

To meet the expectations of our stakeholders, we will continue to be an Innovator in Electronics, mapping a future that has yet to be seen, aiming for further development of our business, and contributing to the realization of a prosperous society. We would like to ask for your continued support.

Process of value creation
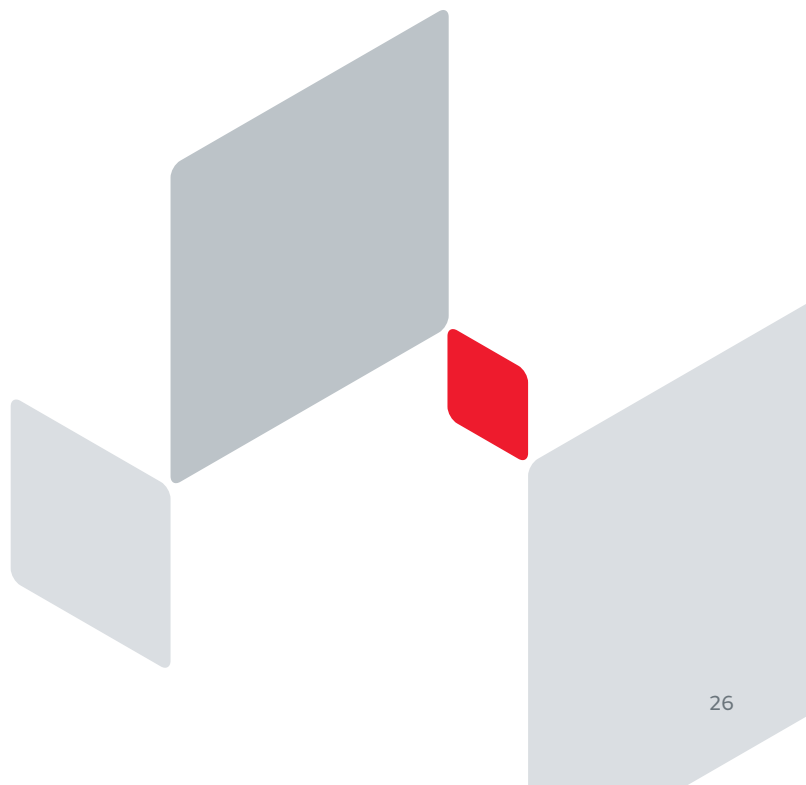
At Murata, employees around the world respond to the changing business environment, thinking and acting based on the Murata Philosophy as the shared guiding principles. Each and every employee feels rewarded and continues to grow through his or her work. They trust and cooperate with each other to demonstrate collective strength, thereby creating new innovation.

Innovator in Electronics

—As a leading innovator in the electronics industry, Murata is committed to

Reinforce

Recognizing the environment (opportunities and risks)

- Expansion of the usage of electronics
- Transition to a sustainable society
- Advancement of digitalization
- Increasing geopolitical risks
- Changing population structure and balance of power
- Response to post-pandemic society

▶ P.39

Core competencies 2
The power to give shape to needs

Key values
CS and ES
▶ P.29~30

Core competencies 1
The power to read the future

Core competencies 3
The power to deliver value

Management capital Murata has cultivated through the implementation of the Murata Philosophy

- Human capital
- Organizational capital
- Monozukuri capital
- Intellectual and technological capital
- Customer and business partner capital
- Financial capital

▶ P.29

Deepen core businesses and promote evolution of business models

Execute four management transformations

Contribute to solving social issues through our business
▶ P.42~43

Initiatives on social issues through business activities overall
▶ P.63~84

Stren

Murata Philosophy

realizing and improving society through proactive value creation— ▶P.3〜6

ment of corporate governance system

▶P.85〜104

Growth strategies

3-layer portfolio

| 1 | Standard-products business | 2 | Application-specific components business | 3 | Creation of new business models |

Four business opportunitie

| Communications | Mobility | Environment | Wellness |

- Management that creates a continuous cycle of social value and economic value
- Autonomous and decentralized organizational management
- Change-responsive management based on hypothetical thinking
- Digital transformation (DX)

Key issues (materialities) originating with social issues

Communications
Contribute to building the social infrastructure that the advancement of communications technology is causing to expand

Mobility
Contribute to achieving the formation of a safe transportation society and new cities

Environment
Create businesses to solve climate change and resource & energy shortages, thereby contributing to improving global environmental problems

Wellness
Contribute to a society where all people can live healthy, prosperous lives

E (Environmental)
Strengthening Murata's response to climate change
Use of sustainable resources
Preventing pollution and managing chemical substances

S (Social)
Secure and safe workplace and health management
Respect for human rights and diversity
Coexistence with local communities

G (Governance)
Appropriate business transactions
Business continuity management (BCM)
Information security

gthen management foundations

Vision2030 What Murata wants to be

Murata will innovate to create a continuous cycle of social and economic value and contribute to the enrichment of society

Murata provides the essentials
Murata in everyday life

Murata enables the future
Solving social issues

Murata evolves through innovation
Practicing sustainable operations

Global No. 1 Component & Module Supplier

▶P.35〜36

Value creation with stakeholders

Economic value

- Net sales ● Operating income ratio
- ROIC (pre-tax basis)

Social value

- Amount of GHG emissions
- Renewable energy implementation rate
- Rate of use of sustainable resources
- Resource recycling rate
- Percentage of overseas indirect employees with experience working at other sites
- Positive employee engagement response rate

For the economic value and social value targets of the Medium-term Direction 2024, please refer to ▶P.35

Murata's management capital and core competencies

Murata's mission is to "contribute to the advancement of society," and we believe that Murata exists for this purpose. In order to realize this mission through the efforts of all employees, the values of "CS and ES" are regarded as key values in our management. In addition, "management capital" that has been developed through the implementation of the Murata Philosophy will continue to be the source of value creation in the future. Murata will demonstrate its core competencies by utilizing such capital, while continuing to drive the business by carrying out "CS and ES" at a high level.

Murata will continue to create value as an Innovator in Electronics by reinforcing the capital, cherishing the spirit of the Murata Philosophy and further developing the core competencies.

Key values ▶ **CS and ES**

At Murata, CS means "continuing to create and provide value that is recognized by the customer," and ES means "every employee achieves satisfaction and continuing growth through the performance of their work duties." Enhancing CS leads to satisfaction and growth of our employees, and enhancing ES leads to the provision of more value to customers. We practice these values based on our desire to be a company that can realize them in our daily business.

Management capital ▶ **Source of value creation nurtured through the implementation of the Murata Philosophy**
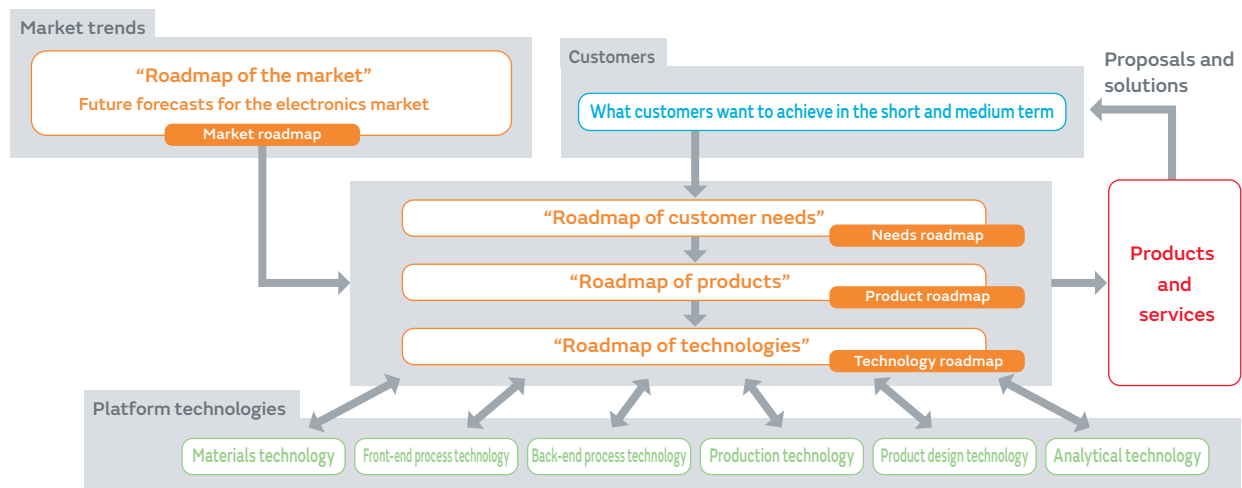
Murata's management capital

Human capital	• Global penetration of Murata Philosophy (management philosophy) • Employees who sympathize with the Murata Philosophy and sincerely practice it • CS and ES as key values • An organizational culture that utilizes diverse individuals and helps their collaboration	▶P.59 Murata's human capital - Strengthening human resources base and organizational capabilities - ▶P.73 Secure and safe workplace and health management ▶P.75 Respect for human rights and diversity
Organizational capital	• Business management philosophy and management systems backed by scientific management • Solid corporate governance that is trusted by stakeholders and enables us to grow together	▶P.19 Message from the Director of Corporate Unit ▶P.89 Corporate governance ▶P.101 Risk management
Monozukuri capital	• Production technology and management systems that are highly integrated, from materials to final products • A strong "Kaizen" mindset and management technology to promote improvement activities • Quality control technology and quality management systems that extend back to the origin	▶P.31 Murata's monozukuri (manufacturing) which creates core competencies
Intellectual and technological capital	• Unique platform technology, core technology, and intellectual property that Murata has built and expanded as an Innovator in Electronics	▶P.23 Message from the Director of Corporate Technology & Business Development Unit ▶P.61 Strengthening technological capabilities for the future and underpinning intellectual property activities
Customer and business partner capital	• Customer and sales networks we have built by providing global No. 1 products • Networks and teamwork among sites around the globe • Global partner network in the supply chain • Trust and credibility we have earned through our solid networks	▶P.77 Coexistence with local communities ▶P.81 Supply chain management
Financial capital	• Financial base to support sustained growth and prepare for changes in the environment and various risks and opportunities • An investment strategy that emphasizes ROIC (pre-tax basis) and aims to increase capital efficiency in the long term • Credibility earned through dialogue with stakeholders and capital markets	▶P.19 Message from the Director of Corporate Unit

Core competencies 1 ## The power to read the future

Since most of our sales are generated from products with high shares in global markets, we have opportunities to communicate with customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs.
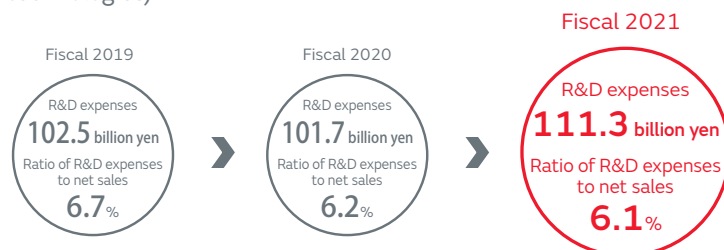
Even in a vastly changing business environment, we are able to continue to provide value to our customers by boosting cooperation of each function, formulating four roadmaps, anticipating customer needs, and preparing optimal solutions as a company. The sales and marketing department produces the Market Roadmap based on general trends in the market. It is then integrated with medium- to long-term customer needs of the sales promotion department of the business divisions, thereby composing the Needs Roadmap. These are connected to the Product Roadmap and the Technology Roadmap by the development department, which in turn are linked to R&D and product development. Using "marketing by everyone" as our motto, we leverage our global network to anticipate customer needs ahead of any other company, and each employee maximizes value offered to customers.

Market trends

"Roadmap of the market"
Future forecasts for the electronics market
Market roadmap

Customers

What customers want to achieve in the short and medium term

Proposals and solutions

"Roadmap of customer needs"
Needs roadmap

"Roadmap of products"
Product roadmap

"Roadmap of technologies"
Technology roadmap

Products and services

Platform technologies

Materials technology | Front-end process technology | Back-end process technology | Production technology | Product design technology | Analytical technology

Core competencies 2 ## The power to give shape to needs / **Core competencies 3** ## The power to deliver value

Murata has built a vertically integrated production system ranging from raw materials to finished products, continuously investing in the development of technologies in areas such as materials, processes, production, product design, analysis, and evaluation. The elemental technologies that we have developed and acquired independently serve as platforms that we deploy in a variety of products and processes. (▶P.61 Platform technologies and core technologies)

Fiscal 2019
R&D expenses
102.5 billion yen
Ratio of R&D expenses to net sales
6.7%

Fiscal 2020
R&D expenses
101.7 billion yen
Ratio of R&D expenses to net sales
6.2%

Fiscal 2021
R&D expenses
111.3 billion yen
Ratio of R&D expenses to net sales
6.1%

Within the engineering chain management (ECM) axis, we closely align the functions of material development, product development, production technology, and manufacturing. As we do so, we use these platform technologies to optimize development the entire Group. We continuously create new products, thereby giving shape to customer needs.
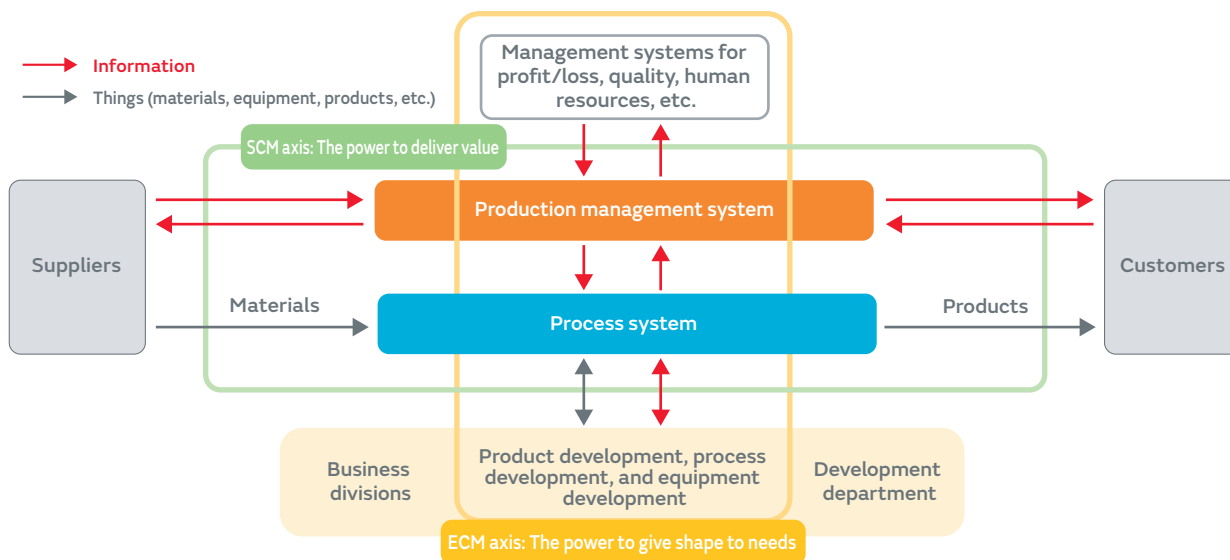
In addition, processes, equipment, and new products created in the ECM axis are mass-produced in the supply chain management (SCM) process system. Combining these with our customer information and production information in our production management system enables us to deliver value to customers in a speedy and timely manner. (▶P.31 Murata's monozukuri (manufacturing) domains)

Murata's monozukuri (manufacturing) which creates core competencies

Murata's monozukuri (manufacturing) domains

At Murata, we consider the SCM axis, which delivers value from suppliers to customers through our business, and the ECM axis, which conducts product development and the related development of processes and equipment, to be our monozukuri (manufacturing) domains in a broad sense. In manufacturing, we are strengthening each of these domains and demonstrating Murata's core competencies, "The power to give shape to needs" and "The power to deliver value," through advanced linkage of the SCM and ECM axes.

→ Information
→ Things (materials, equipment, products, etc.)

Management systems for profit/loss, quality, human resources, etc.

SCM axis: The power to deliver value

Suppliers → Materials → Production management system ← → Customers

Process system → Products

Business divisions

Product development, process development, and equipment development

Development department

ECM axis: The power to give shape to needs

Production technologies that support the creation of new products

At Murata, we focus on concurrent engineering[*1]. The production engineering department which is responsible for the development of processes and equipment, collaborates from an early stage of the development of new products to develop, design, and manufacture unique in-house facilities that are economical, safe, and of high quality. We are also working on challenging development themes by organizing core technologies that are at the root of Murata's monozukuri (manufacturing) and strategically focusing on elemental technologies that will serve as our competitiveness in the future. Looking another ten years ahead, we will develop innovative technologies that add two new perspectives: environment and site/people, thereby creating a continuous cycle of social value and economic value.

Production technology domains

Laminating & stacking and printing

Sintering

Precision mechanical processing

Nano & thin film fabrication

Packaging

Measurement and testing

Equipment design and automation

Smart technology[*2]

*1 A method in the product development process in the manufacturing industry that is used to streamline development and shorten the development period by simultaneously carrying out multiple tasks
*2 Technology that solves manufacturing issues such as improving productivity and quality of production lines by utilizing new technologies such as robots, IoT, and AI

Quality Management System (M-QMS) for realizing high quality

We have combined all of our manufacturing activities into a single M-QMS so that we can continue to ensure that Murata quality exceeds our customers' expectations. Murata has created integrated manufacturing systems from materials to finished products, and since the company's founding we have uncompromisingly pursued quality that will gain the trust of every customer by utilizing science-based management oversight, starting from the origins of our processes and throughout the operation. Using state-of-the-art failure analysis technology, reliability technology, quality technology, etc., we promote activities based on the five principles approach that includes three actuals. In addition to addressing the quality of products and services, Murata continuously improves all processes and systems relating to design, procurement, production, sales, human resources, goods, structures, and technologies, and strives to maintain optimal conditions in all facets of our operations. We encourage each employee to derive satisfaction and improve the quality of their work in order to solve our customers' issues and social issues.

Management systems that meet customer requirements

Murata develops, maintains, and operates its own production management systems to meet customer requirements.
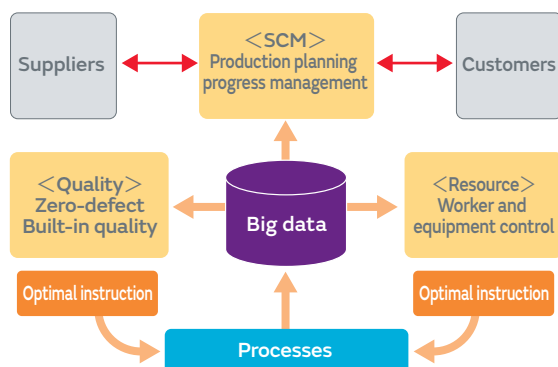
Our production management system has three main functions. The first is a supply chain management (SCM) function. This forms production plans based on the order information received from customers and connects these to delivery date responses and material orders to suppliers. The second is a function that performs actual production based on a production plan. We use that production information (big data) to monitor production conditions and issue improvement instructions with the aim of ensuring zero defects. The third is a function that monitors the operation status of resources such as workers and equipment. We use this to issue instructions such as increases/decreases and production orders. We will use these functions to meet the demands of our increasingly advanced and diversified customers.

Human resources who support the monozukuri site

The foundation for excellent monozukuri is human resources. Murata places particular emphasis on developing improvement facilitators and maintenance engineer who are responsible for equipment maintenance. Our training for improvement facilitators focuses on having manufacturing supervisors and workers who are active at the frontline of the manufacturing site acquire improvement technologies that support our competitiveness in monozukuri. The number of our improvement facilitators continues to grow each year. As of March 31, 2022, the total number of improvement facilitators was approximately 1,750, making them the mainstay of on-site improvement.

In Murata's equipment-oriented processes, maintenance technicians are also important on-site personnel who support monozukuri. Maintenance

skills, which take time to master, are standardized as formal knowledge. This knowledge is passed on at "engineering training gym" that we have set up at our major production sites in Japan and overseas to develop and raise the level of these skills.

A maintenance dojo

Stakeholder engagement

Communication with stakeholders

Companies cannot operate without social trust. At Murata, we believe that it is necessary to sincerely listen to the voices of stakeholders such as customers, employees, shareholders, investors, suppliers and members of the local community, and to respond to their requests. We also aim to co-create new value with stakeholders through close communication with them, thereby practicing the Murata Philosophy and realizing sustainable growth.

	Relationship with stakeholders	Means of communication	Department(s) in charge
Customers	At Murata, the values of "CS and ES"* are regarded as key values in our management. In order to realize them, Murata strives to understand customer needs through technology exchange meetings, etc. at an early stage of planning, development and designing phase of new products. By resolving customers' issues and responding to their needs though such activities, Murata endeavors to build long-term trusting relationships with customers.	● Daily business activities ● Product exhibition and online seminar ● Website	Sales department Other departments in each business division
Employees	At Murata, the values of "CS and ES"* are regarded as key values in our management. Murata aims to be a company where each and every employee achieves satisfaction and continues to grow through the performance of their work duties. To foster such company culture, we are committed to improving the work environment and take various measures. (▶P.59 Murata's human capital - Strengthening human resources base and organizational capabilities -) (▶ P.73 Secure and safe workplace and health management) (▶P.75 Respect for human rights and diversity)	● Policy briefing session by the president ● Employee survey ● Employee training (job grade-specific training programs/philosophy education, etc.) ● Discussion with executives ● Internal portal site/newsletters ● Whistle-blowing system and consultation hotlines	Personnel department Sustainability department Corporate communications department Legal affairs department
Shareholders and investors	Murata strives for timely, accurate and fair disclosure of information to shareholders and investors. Murata is also engaged in constructive dialogue with shareholders and investors with the aim of achieving sustainable growth and increasing the corporate value.	● Briefing session for securities analysts and investors (Information meetings, earnings release conference) ● Meetings with securities analysts and investors in Japan and overseas ● General meeting of shareholders ● Company website (IR)	IR department General affairs department
Suppliers	At Murata, we consider it important to build mutually trusting relationships with suppliers that enables us to thrive and prosper together. We work with suppliers to improve our unique technologies and management technologies, and build trusting relationships by treating them sincerely, with impartiality and fairness, while complying with laws and regulations and abiding by social ethics. We also conduct business activities with an emphasis on human rights and the environment. (▶P.81 Supply chain management)	● Interaction with suppliers in daily procurement practice ● Website exclusively for suppliers ● Hotline for suppliers ● Briefings for suppliers ● On-site audit for suppliers ● Questionnaire for suppliers ● Initiatives with suppliers to improve quality	Procurement department Quality control department Manufacturing department
Members of local communities	Murata aims to become a "presence in local communities that is a source of pride and joy to those communities". In order to achieve this, Murata has made efforts to build trusting relationships with the people of the region while gaining their understanding toward Murata's business and initiatives by continuously engaging in activities that lead to solutions to the problems of the region in which we conduct business. (▶P.77 Coexistence with local communities)	● Discussion and information exchange meeting with the local government, local communities, residents, and NPO in areas where our factories or offices are located ● Factory tour ● Participation/sponsorship for local events ● Volunteer work of employees in the area ● Providing visiting class and electronics workshops on science, STEAM, career, etc.	General affairs department

*CS and ES: Please see ▶P.29 Murata's management capital and core competencies

Case study

| Communication with employees |

Improving understanding of autonomous and decentralized organizations to pursue organizational transformation

At Murata, we aim to create an autonomous and decentralized organizational management so that we can continue to practice the Murata Philosophy, provide value, and continue growing even as the environment changes drastically. To achieve this, we thought that a change in each employee's behavior was necessary, and we therefore held a panel discussion with the participation of officers. At the panel, officers shared their own experiences and ideas on how to implement autonomous decentralization in their respective organizations and positions, exchanging views with employees. Employees commented that they felt a renewed appreciation for the importance of acting toward autonomous decentralization by having their own interpretations and opinions, and they also felt the usefulness of sharing diverse opinions in value creation. We will continue to foster an organizational culture where employees can empathize with organizational reform initiatives and carry them out with a sense of conviction.

Panel discussion on autonomous decentralization

| Communications with shareholders/investors |

Co-creating value with shareholders and investors through constructive dialogue

Murata conducts various IR activities so that shareholders and investors would deepen their understanding of our management ideology and financial status. We have more than 700 dialogues per year with analysts and institutional investors, with more opportunities to speak directly with not only the IR department, but also management, including the President. We communicate with individual investors through general meetings of shareholders, etc. Valuable opinions obtained through these dialogues are shared by the IR department with Members of the Board of Directors, Vice Presidents, and related internal departments, and are reflected in the formulation of our management strategy and in efforts to enhance disclosure of financial and ESG-related information. We also provide feedback in our internal IR activities* and link them to efforts toward value co-creation by all employees.

Information meeting (held in fiscal 2021)

*Activities to provide employees with an opportunity to review their own company's issues by providing feedback from institutional investors, etc.

| Communications with members of local communities |

Realizing a sustainable society with the members of local communities

At Murata, we value communication with the members of local community and carry out various activities to realize a sustainable society. At Izumo Murata Manufacturing Co., Ltd. (Shimane Prefecture), in addition to visiting a local elementary school to give classes about the SDGs, we also worked with the same school on other activities, including jointly creating a map of the future that presented the wishes of children for a sustainable and better world and our employees' resolutions for achieving the SDGs, and a food loss reduction challenge in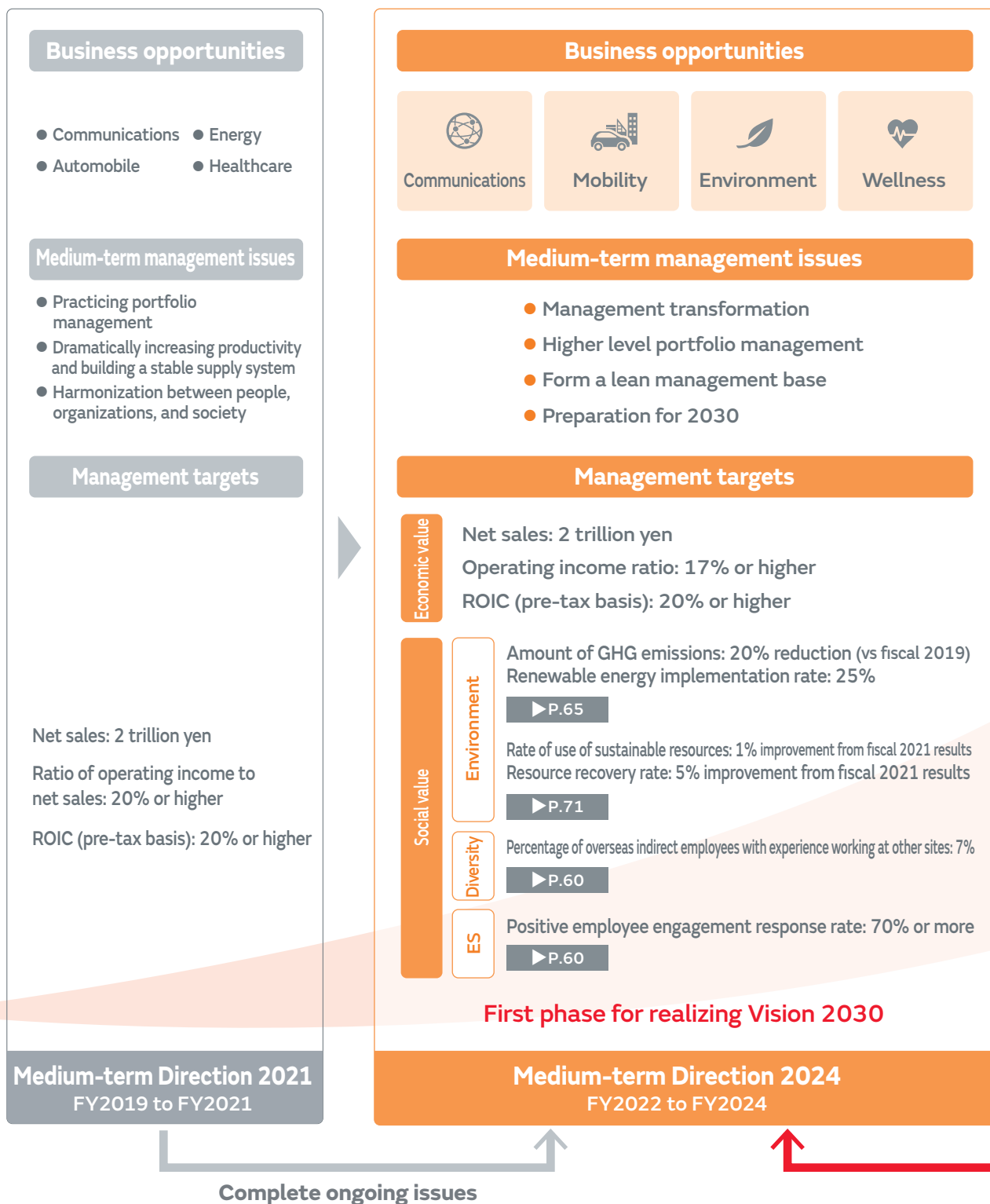 which students competed with each other on their lunch completion rates. In this way, Murata is not only working to solve social issues as a company, but is also creating opportunities for each and every employee to enjoy working with the members of local community to confront familiar issues, think about what contributions they can make, and take action.

Co-creating a map of the future

Toward getting where Murata wants to be in Vision 2030 (long-term direction)

In order to respond to a drastic change in the environment and to continuously increase the corporate value, in 2021, Murata established Vision 2030 as the long-term direction that gives detailed guidance as to the necessary preparations. And the first phase to get where Murata wants to be in Vision 2030 is set forth in "Medium-term Direction 2024" (FY2022 to FY2024). In Medium-term Direction 2024, we set social value as our new goal. In addition to economic value targets, by setting targets for our efforts to contribute to solving social issues, we will create a continuous cycle of social and economic value and contribute to the enrichment of society.

Business opportunities

- Communications
- Automobile
- Energy
- Healthcare

Medium-term management issues

- Practicing portfolio management
- Dramatically increasing productivity and building a stable supply system
- Harmonization between people, organizations, and society

Management targets

Net sales: 2 trillion yen

Ratio of operating income to net sales: 20% or higher

ROIC (pre-tax basis): 20% or higher

Business opportunities

| Communications | Mobility | Environment | Wellness |

Medium-term management issues

- Management transformation
- Higher level portfolio management
- Form a lean management base
- Preparation for 2030

Management targets

Economic value

Net sales: 2 trillion yen

Operating income ratio: 17% or higher

ROIC (pre-tax basis): 20% or higher

Social value

Environment

Amount of GHG emissions: 20% reduction (vs fiscal 2019)
Renewable energy implementation rate: 25%
▶P.65

Rate of use of sustainable resources: 1% improvement from fiscal 2021 results
Resource recovery rate: 5% improvement from fiscal 2021 results
▶P.71

Diversity

Percentage of overseas indirect employees with experience working at other sites: 7%
▶P.60

ES

Positive employee engagement response rate: 70% or more
▶P.60

First phase for realizing Vision 2030

Medium-term Direction 2021
FY2019 to FY2021

Medium-term Direction 2024
FY2022 to FY2024

Complete ongoing issues

Innovator in Electronics

Murata will innovate to create a continuous cycle of social and economic value and contribute to the enrichment of society.

Murata in everyday life

Murata's electronic components are used as an essential part of the social infrastructure for enriching people's basic needs. Murata will continue to respond to society's needs with constant innovation and promote the evolution of components. Murata's components are broadly and deeply rooted in society and support people's everyday lives.

Solving social issues

Electronics are also widely used as tools for solving social issues.
Murata will not just provide components but will utilize electronics as a breakthrough to pursue sustainability of the Earth and society. Murata's innovations will accelerate the realization of an unrestricted, more convenient future.

Practicing sustainable operations

Murata will innovate to reduce the impact of our business operations on society and the environment. We are committed to realizing our business processes that are in harmony with society.

Innovation for
Murata provides the essentials

Innovation for

Co-creation with stakeholders

Murata evolves through innovation

Murata enables the future

Innovation for
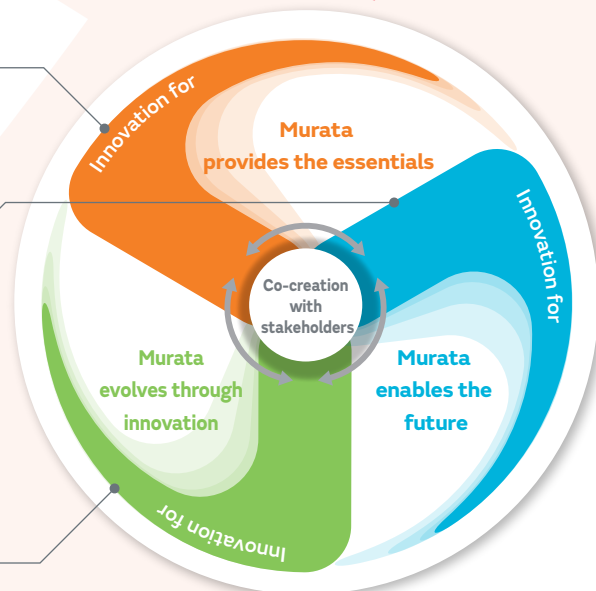
Global No. 1 Component & Module Supplier
Murata will be the best choice for customers and society

Growth strategies

Deepen core businesses and promote evolution of business models

1 Standard-products business	**2** Application-specific components business	**3** Creation of new business models

✕

- Communications
- Environment
- Mobility
- Wellness

Execute four management transformations

- Management that creates a continuous cycle of social value and economic value
- Change-responsive management based on hypothetical thinking
- Autonomous and decentralized organizational management
- Digital transformation (DX)

Environmental changes from medium- to long-term perspective

- Expansion of the usage of electronics
- Advancement of digitalization
- Changing population structure and balance of power
- Transition to a sustainable society
- Increasing geopolitical risks
- Response to post-pandemic society

Vision2030

Steadily progress preparation through backcasting

Medium-term Direction 2021 review

In 2018, Murata established "Medium-term Direction 2021" as the policy for the next three years (from FY2019 to FY2021). With Medium-term Direction 2021, we aimed to provide value to customers by rebuilding strong business foundations to support our growing business and by capturing broadening business opportunities. We have also set three Group-wide issues in order to ensure healthy growth in an aim to be a company where each employee plays an important role, feel rewarded and grow through their work.

Group-wide targets

	Target	Fiscal 2019	Fiscal 2020	Fiscal 2021	vs Target
Net sales	2 trillion yen	1,530 billion yen	1,630 billion yen	1,810 billion yen	(187.5) billion yen
Ratio of operating income to net sales	17% or higher	16.5%	19.2%	23.4%	+6.4 points
ROIC (pre-tax basis)*	20% or higher	16.1%	18.5%	22.6%	+2.6 points

*ROIC (pre-tax basis): Operating income / Invested capital (Property, plant and equipment + Inventories + Trade accounts receivable - Trade accounts payable)

[Net sales] Although demand for components grew continuously along with the progress of electrification of automobiles and the spread of 5G, sales fell short of the target. This was mainly due to the impact of revisions to our business portfolio for lithium-ion secondary batteries and connectivity modules.

[Ratio of operating income to net sales] The operating income ratio greatly exceeded our target. This was due to improved profit margins for each product, a better product mix, and production increase from increased output against a backdrop of strong demand, as well as the impact of the yen's depreciation.

[ROIC (pre-tax basis)] ROIC exceeded our target. This was due to higher operating income despite greater invested capital with capital expenditures incurred to expand buildings and production capacity.

Group-wide issues

	Practicing portfolio management	Dramatically increasing productivity and building a stable supply system	Harmonization between people, organizations, and society
Basic policy	• Identify growth businesses, acquire the necessary management resources for those businesses, and optimally allocate those resources. From a market perspective, concentrate management resources on communications and automobiles. • Take a long-term perspective on the creation of new businesses. In the energy and medical and healthcare markets, continue to take on challenges in targeted business and product domains. • Gain and strengthen core competencies to enable sustainable growth.	• Enhance direct and indirect labor efficiency using all available methods, including AI and RPA. • Proactively prepare development and production systems by evolving demand forecast to anticipate fluctuations in demand. • Respond flexibly to demand fluctuations through timely understanding of information and the flow of goods across the entire value chain, across organizations and locations.	• Make the company attractive to employees in order to support growth and strengthen the organization to accommodate growth. • Foster an organizational culture and carry out business process reforms to enable the engendering of "trust and respect." • Comply with laws and regulations, and operate business in harmony with society.
Results	• Promoted Group-wide cross-divisional projects, including introducing a feasibility assessment model (review product strategy and strengthen efforts in the automobile market) • Carried out M&A and strategic alliances	• Improved indirect operations through the introduction of a supply chain planning (SCP) system • Strengthened efforts to create smart factories	• Conducted employee surveys and worked to improve the organizational culture based on the results • Identified Key issues (materialities) originating with social issues, set KPIs, and built a system to promote them
Challenges for the next Medium-term Direction	• Practice 3-layer portfolio management including new business creation • Reassess our business domains and promote business expansion in the four business domains of communications, mobility, environment, and wellness	• Increase productivity by expanding the scope of application of DX as monozukuri in a broad sense, rather than ECM or SCM alone • Strengthen the ability to respond, including geopolitical risks	• Develop a concrete personnel strategy using results of employee surveys and execute it • Create systems to link contributions to solving social issues to business growth

Practicing portfolio management

To pursue capital efficiency rather than scale, we have introduced a feasibility assessment model as a framework for conducting business assessments based on multifaceted indicators. As a result, we reviewed our business strategy for lithium-ion secondary batteries and connectivity modules.

Through this feasibility assessment model, we have worked to improve the asset efficiency of businesses with issues, and by focusing on products for the automobile market, which is one of our focus markets, we have been differentiating and expanding our technology and optimizing our manufacturing locations. As a result of these efforts, the percentage of automotive electronics in company-wide net sales grew to 18.6% as of fiscal 2021.

Meanwhile, we have carried out M&A and strategic alliances aimed providing great products by gaining
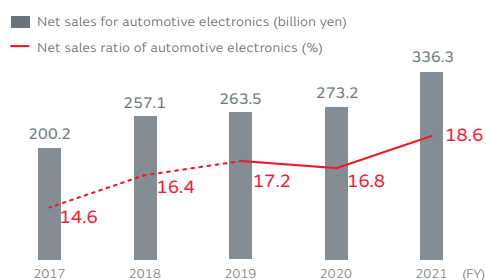
new technologies to combine with Murata's core technologies. We carried out a series of investments that culminated in the acquisition of Resonant Inc., a company that owns XBAR technology, a filter technology that can handle high-frequency bands such as 5G. We also completed the acquisition of Eta Wireless Inc., the developer of Digital Envelope Tracking Technology that can dramatically reduce the power consumption of RF circuits on mobile devices. Going forward, we will continue to promote M&A and other measures based on our technology strategy for the future.

We have also been working to accelerate the creation of new businesses through efforts such as development of a fabric that generates electrical energy and exhibits antimicrobial performance when a motion is applied created by PIECLEX, our joint venture with Teijin Frontier.

In the next Medium-term Direction, we will evolve our 3-layer portfolio management, including new business creation and will expand our business in four business fields, which include the core fields of communications, where we concentrated our management resources under Medium-term Direction 2021, and Mobility, which broadens the concept of the automobile from In-Car to Out-Car, as well as our challenge fields of environment and wellness.

■ Net sales for automotive electronics (billion yen)
— Net sales ratio of automotive electronics (%)

	2017	2018	2019	2020	2021 (FY)
Net sales	200.2	257.1	263.5	273.2	336.3
Ratio	14.6	16.4	17.2	16.8	18.6

Dramatically increasing productivity and building a stable supply system

We have introduced a supply chain planning system (SCP) to upgrade our demand forecasts and enhance production planning efficiency. We will continue to expand the application of this technology not only to domestic manufacturing sites but also to overseas plants. In terms of product logistics, we are also working to optimize logistics and improve labor productivity by undertaking fundamental reforms in our warehouse operations, including shipping products directly from overseas factories to customers.

In addition, as part of our efforts to create smart

factories, we have been optimizing our transportation operations using AGV*1 and AMR*2, and reducing quality costs through data mining.

In the next Medium-term Direction, we will expand the scope of application of DX beyond the manufacturing site to include ECM and SCM from the standpoint of monozukuri in a broad sense and we will also focus on strengthening our risk management to prepare for dramatic changes in the environment.

*1 Automatic Guided Vehicle, an unmanned transport vehicle
*2 Autonomous Mobile Robot, a self-driving transport robot

Harmonization between people, organizations, and society

We conducted a global survey to understand our employees' satisfaction levels and needs. Based on the results of the survey, each organization has begun to identify the issues facing them and to carry out specific measures for addressing these issues.

In addition, we have identified materiality to clarify the challenges that we must focus on, based on the issues facing society. To address each materiality, we have established a CSR Management Committee and its subordinate bodies, setting the framework

for deliberations at the Board of Directors. We are continuously discussing themes that require cross-organizational activities and carrying out initiatives to address these.

In the next Medium-term Direction, we will strengthen our efforts to further improve employee engagement, while also accelerating our efforts to address each materiality, establishing and operating a business management system to link contributions to solving social issues to business growth.

Business environment and the four medium-term management issues established in Medium-term Direction 2024

Medium-term Direction 2024 is the first phase toward realizing Vision 2030, which defines what Murata wants to be. In Medium-term Direction 2024, we will complete the ongoing issues from Medium-term Direction 2021 and tackle the four medium-term management issues by backcasting from the changes in the environment from a long-term perspective.

Ongoing issues from Medium-term Direction 2021 ▶P.37

Changes in the environment from a medium- to long-term perspective	Medium- to long-term business environment (opportunities and risks)

Expansion of the usage of electronics

The transition to a sustainable society will bring a shared global awareness and ESG initiatives will lead to increased corporate value

The business environment surrounding Murata is expected to become change dramatically and quick decision-making and execution in areas closer to the frontlines will be required, as well as business management that uses backcasting to anticipate future scenarios

Transition to a sustainable society

Competitiveness will depend on our ability to respond to advances in the digitalization of society

Customer definitions will change as applications expand and demand for value will shift toward software and solutions

Advancement of digitalization

Demand for electronic components will increase due to the spread of 5G, the electrification of vehicles, and the shift to EVs

As environmental conservation increases in importance and, particularly amid the aging societies of developed countries, extending healthy life will be an important theme, which will expand business opportunities related to the environment and wellness

Increasing geopolitical risks

Work styles will diversify and competition to acquire DX human resources will intensify in the post-pandemic society and with the use of digital tools

Changing population structure and balance of power

It will be important to build a supply chain that responds to the declining working-age population due to Japan's falling birthrate and aging population, heightened geopolitical risks, and diversification of business models

An emergence of new customers along with changes in industry structure and changes in value chains will occur

Response to post-pandemic society

There will be a need to take a long-term perspective in preparing for changes such as shifts in geopolitical power balances and in the framework of the international community due to the commoditization of volume zone for electronic components and the rise of emerging countries

The four medium-term management issues established in Medium-term Direction 2024

Management transformation

Management that creates a continuous cycle of social value and economic value
Promote initiatives to realize a sustainable society, such as strengthening Murata's response to climate change, and create innovations that lead to solutions to social issues and lead to business opportunities.

Autonomous and decentralized organizational management
Transform into an autonomous, decentralized organization that emphasizes three aspects of autonomy, collectiveness, and evolution with the aim of continuously practicing the Murata Philosophy, delivering value, and continuing to grow.

Change-responsive management based on hypothetical thinking
Respond flexibly to changes by increasing information sensitivity to changes in the business environment and incorporating hypothetical thinking approaches into business management systems.

Digital transformation (DX)
Develop a foundation for promoting DX as a means of reforming our organizations and work systems to improve productivity and create new value.

Higher level portfolio management

Practicing 3-layer portfolio management
Solve ongoing issues such as the continuous improvement of capital efficiency and the selection and concentration of businesses, linking these efforts to financial results, and take portfolio management to a higher level by evolving business management systems such as by linking it to human resource allocation and incorporating social value elements.
Use diverse innovations in management to renew our businesses and technologies, while managing the business using a 3-layer portfolio in four business opportunities with the aim of pursuing profitability, efficiency, and growth for each business and continuing to provide value to customers and society.

Form a lean management base

Strengthen human capital
Strengthen the human resource base and organizational capabilities for sustainable value creation by improving employee engagement and developing a diverse human resources that is active on a global scale.

Strengthen quality foundation
Establish a quality assurance and control system that meets the needs of a wide variety of businesses and practice quality-oriented risk management.

Preparation for 2030

Strengthen monozukuri in a broad sense
Dramatically increase productivity and create innovative technologies while building a monozukuri system for 2030, radically strengthen the ECM axis, and improve the SCM axis to increase the added value provided to customers.

Strengthen response to management risks
Develop intelligence capabilities for future management risks, while assessing key management risks to make the necessary preparations.

Strengthen the power to sell and power to support
Strengthen selling and overall operational (support) capabilities to continue to provide value based on a timely and accurate understanding of the social, market, and customer needs.

Drive innovation
Discover and cultivate technologies that will become a source of competitiveness in the future, while showcasing technologies to bring about valuable collaboration. Additionally, develop and implement an intellectual property strategy to support our technologies.

Management that creates a continuous cycle of social value and economic value

Murata's mission is to contribute to cultural development. We have set a vision of where Murata wants to be in our "Vison 2030": becoming the best choice for our customers by providing the essentials, enabling the future, and evolving through innovation via co-creation with stakeholders.

We will realize our mission by balancing our profit creation with the contribution to realizing a sustainable society, creating and continuing to provide value to customers and society through innovation, and reinvesting the profits generated to further create value.

To this end, we will set key materiality issues based on social issues from two categories, namely, "contribute to solving social issues through our business" and "initiatives on social issues through business activities overall," and carry out initiatives to address them.

Key issues (materialities) originating with social issues

Contribute to solving social issues through our business

- Set a course of action for solving social issues in four business opportunities as materiality
- Create the kind of innovation that Murata is known for achieving and aim to contribute to solving social issues through our business

Initiatives on social issues through business activities overall

- Set nine items of materiality in the fields of E (environmental), S (social), and G (governance)
- Aim to increase social value by reducing the social and environmental burden generated throughout the supply chain

Contribute to solving social issues through our business

Communications — Contribute to building the social infrastructure that the advancement of communications technology is causing to expand

Environment — Create businesses to solve climate change and resource & energy shortages, thereby contributing to improving global environmental problems

Mobility — Contribute to achieving the formation of a safe transportation society and new cities

Wellness — Contribute to a society where all people can live healthy, prosperous lives

Initiatives on social issues through business activities overall

E — Environment
Strengthening Murata's response to climate change
Use of sustainable resources
Preventing pollution and managing chemical substances

S — Social
Secure and safe workplace and health management
Respect for human rights and diversity
Coexistence with local communities

G — Governance
Appropriate business transactions
Business continuity management (BCM)
Information security

Process of identifying materiality

We have created a long list of approximately 100 social issues from SDGs, global risks, and internal issues, and have scored each issue in terms of stakeholder importance and importance within Murata. These issues were also debated with executives including the Representative Director, and persons concerned to identify material issues, which were decided by the Board of Directors.

For details of process of identifying materiality, please see here.
https://corporate.murata.com/en-global/csr/way_of_thinking/materiality#id3

Promotion framework for key issues (materiality)

Murata has established the CSR Management Committee chaired by the President.

The CSR Management Committee has 6 subordinate bodies that discuss issues that require cross organizational activities. We promote initiatives for the key issues (materiality) through these organizational structures.
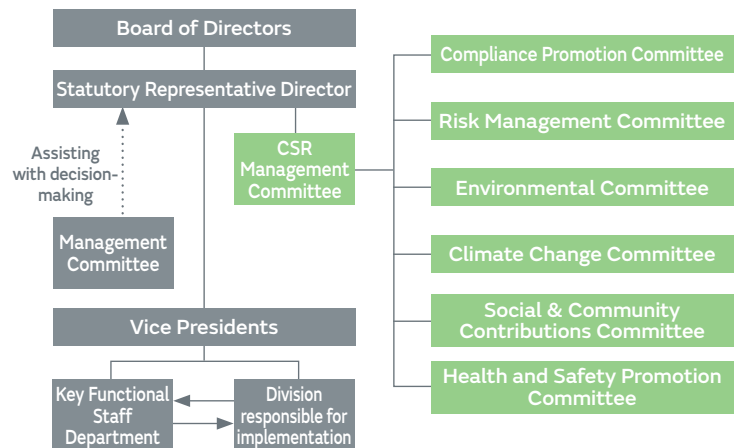
Contribute to solving social issues through our business

Materiality	Recognized business opportunities	Murata's contribution
Communications	• Increasing demand for components as communication systems evolve • Diversifying built-in communication applications • Emerging data-driven solutions and services • Building the network infrastructure to support the above, and advancing the development of smart cities • Merging real and virtual, including the expansion of XR technology	• Providing high-quality components that contribute to the stability of the communication systems and network infrastructure that have become indispensable social infrastructure for enriching people's lives • Contributing to the evolution of communication systems and the development of applications through knowledge cultivated in the field of continuous technological innovation and communication
Mobility	• Increasing demand for components as automobiles evolve through safety enhancement including the spread of advanced driver assistance systems (ADAS) and autonomous driving, as well as the advancements of electrification • Integrating various transportation modes and services emerging under the concept of Mobility as a Service (MaaS), which positions transportation itself as a service	• Contributing to achieve the formation of a safe and secure transportation society, and a society that integrates various means of transportation and services through miniaturization, increased functionality and enhanced reliability of components
Environment	• Accelerating initiatives to transition to a decarbonized society • Advancing the circular economy, which places value on product repair, reuse, and resource recycling • Advancing the development of environmental technology (clean tech) in all industry segments	• Contributing to a decarbonized society through the battery and power supply business, with our competitive advantage of safety, security, high efficiency, and long life • Enabling monitoring of various environmental aspects through communication and functional components, and accelerate the realization of a decarbonized society and circular economy • Deploying production expertise related to energy saving and renewable energy acquired in our process improvement activities widely outside the Company
Wellness	• Transforming the medical and healthcare domain using digital technology • Expanding initiatives in preventive medicine and health promotion in line with the acceleration of the population aging • Changing health concepts, including balanced mental and social health in addition to physical health, and the pursuit of people's own happiness	• Contributing to the acceleration of digitalization in the medical and healthcare domains by providing compact, high-quality electronic components • Provide solutions for extending healthy life expectancy and enabling vibrant lifestyles free from anxiety by combining Murata's technologies and ideas

42

Examples of initiatives to contribute to solving social issues through our business

Communications

Contributing to power saving in communications through high-frequency devices

5G is expected to become more widespread in the 2020s, with 6G expected to be introduced in 2030. Communications systems have become the infrastructure for all industries and people, and their evolution is expected to bring about significant changes in the way of life. Although 5G features high-speed communications, the high output and wide bandwidth of the signal give rise to the issue of higher power consumption. Reducing power consumption is an important issue to be solved not only for enhancing the convenience of mobile devices, but also from the viewpoint of addressing climate change.

Solving this issue was one of the goals of Murata's acquisition of Eta Wireless Inc. in September 2021. The Digital Envelope Tracking Technology that Eta Wireless Inc. possesses optimizes the voltage of RF circuits involved in transmission and reception functions of mobile devices, thereby reducing power consumption and contributing to the longer operating time of the devices. Combining Murata's existing high-frequency modules with the Digital Envelope Tracking Technology will allow us to provide a solution that enables lower power consumption. We will contribute to solving social issues through technological innovation in communications.

Mobility

Achieving a safe and secure transportation society through technological innovation of multilayer ceramic capacitors (MLCCs)

The number of sensors and processors installed in each vehicle is increasing as their safety and functionality are enhanced with the spread of ADAS and autonomous driving. This has led to an increase in the number of MLCCs required to correctly operate these devices.

In December 2021, Murata developed MLCCs for the powertrain safety of vehicles, which achieves the world's largest[1] static capacitance of 22 μF at 3216M (3.2 × 1.6 mm) size/rated 16 V, and commenced its mass production. This product is commercialized using proprietary ceramic technology and thin-layer forming technology by atomization and homogenization of electrode materials. In addition, the high temperature load test for long-term reliability has been conducted to meet the specifications of a maximum operating temperature of 125°C and rated voltage of x 150% for 1,000 hours, thus ensuring high reliability.

We will continue supporting the enhancement of the safety and functionality of automobiles through technological innovations that respond to the demand for smaller components, greater static capacitance, and higher reliability. We will thereby contribute to the realization of a safe and secure transportation society.

[1] As of December 2021, according to Murata research.

Environment
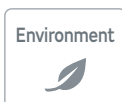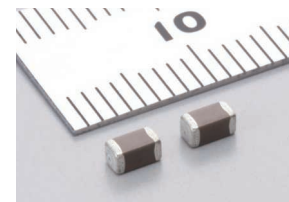
Contribute to a decarbonized society by deploying the company's expertise externally

In April 2022, Sendai Murata Manufacturing Co., Ltd. (Miyagi Prefecture) became the third[2] Murata production subsidiary to make a full transition to using renewable energy.

In addition, Sendai Murata Manufacturing Co., Ltd. plans to install a storage battery system that combines large-scale solar panels with storage battery units that use our lithium-ion rechargeable battery FORTELION, which features high safety and long service life. The installation is expected to reduce the burden on the power grid by using a proprietary energy management system that optimizes energy use through integrated management of information including production planning, electricity consumption, and weather conditions.

Going forward, we will contribute to the realization of a decarbonized society by expanding this mechanism to other company locations. In the future, we will also expand it outside the company using the expertise we have developed in-house.

[2] In November 2021, Kanazu Murata Manufacturing Co., Ltd. (Fukui Prefecture) shifted to using renewable energy for all of its electricity consumption, followed by Philippine Manufacturing Co. of Murata, Inc. (The Philippines) in January 2022.

Digital transformation (DX)

Management transformation · Higher level portfolio management · Form a lean management base · Preparation for 2030

Murata defines digital transformation (DX) as an initiative that enables people and organizations (business processes) both inside and outside Murata to connect digitally and freely and make processes shorter, faster, and visible, thereby driving to dramatically increase competitiveness and customer value.

The digitalization of Murata's value creation process will elevate Murata's strength of "on-site transformation" from individual optimization to "autonomous and decentralized transformation" with collectiveness and progressiveness. We will do this by connecting data and information, operations and people, carrying out the Murata Philosophy and acting as an Innovator in Electronics. This will in turn help us cultivate a corporate culture that continues to bring about innovation.

Focus areas for promoting DX

- Restructuring of value chains, operations, processes, and systems that have been optimized on the business axis but have become siloed
- Acquiring and developing DX human resources (system, recruitment and development)
- Promoting data management, data collaboration and utilization

Deepen core businesses and promote evolution of business models
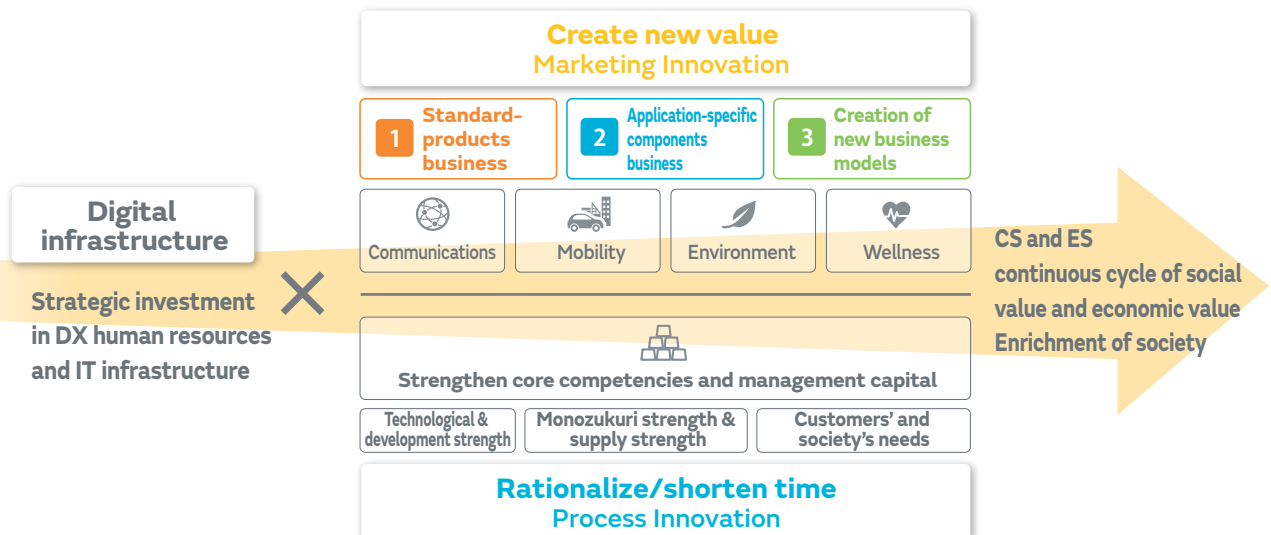
Transformation of the monozukuri domains utilizing digital technology

We are promoting initiatives to utilize digital technology to create smart factories. Our aim is to respond to the challenges of securing human resources amid the decline of the working-age population, while also addressing issues such as enhancing productivity, increasing logistics complexity, increasingly sophisticated needs of customers, quality enhancement, and new product creation. We will clarify the focus areas for our initiatives, and transform them into next-generation monozukuri systems through automation technologies using AI and robots, and data utilization and collaboration technologies such as IoT.

Digital applications in the monozukuri domains

(1) **Supporting a diverse workforce**
Robot and AGV utilization, machining instruction system

(2) **Enhancing product quality**
Automatic control of machining conditions, predictive error detection, image recognition AI

(3) **Enhancing equipment efficiency**
Operational status monitoring, predictive maintenance

(4) **Enhancing design quality**
Database for utilizing past information; database for connecting development and manufacturing information

(5) **Responding to increasingly complex production**
Production planning, work arrangement system

(6) **Responding to one virtual base**
Centralization and remote support of information between factories, suppliers, and contractors

(7) **Promoting energy conservation**
Energy management system

Practicing 3-layer portfolio management

Management transformation | Higher level portfolio management
Form a lean management base | Preparation for 2030

In order for Murata to continue to create value as an innovator in the drastically changing electronics industry, it is necessary to capture the global trends of technology and changes in society and reflect them in business management. In order to create various innovations looking ahead to the future from a long-term perspective, Murata uses a three-layer portfolio in its business management to create value.

Innovator in Electronics

Technological & development strength

3 — **Creation of new business models**

Build future discontinuous core competencies for Murata

- Prepare for a changing society
- Aim for models to become businesses, data solutions, brand

Business opportunities that start with customer value

2 — **Application-specific components business (ASC)**
Devices, modules

Expand business fields
Create new added value

- An approach that draws out abundant technologies
- Technologies to differentiate us from competitors

Expansion of elemental technologies

1 — **Standard-products business (EI)**
Components

Drive Murata's growth as a core business

- Evolution of basic technologies
- Continuous technological innovation
- Highly distinctive materials/ production technologies

Produce continuous innovation responding to changes in markets and customers

Reclassification of disclosure segment and net sales classification

From fiscal 2022, which is the first year covered in the "Medium-term Direction 2024," Murata discloses information based on its three-layer portfolio. By changing the disclosure segments, Murata will improve the transparency of management, have more active communication with stakeholders, and promote autonomous and decentralized organizational management.

Former segment classification (– FY2021)

Segments	Net sales classification	Main products
Components	Capacitors	Multilayer ceramic capacitors
	Piezoelectric components	SAW filters Piezoelectric sensors Resonators
	Others components	Inductors EMI suppression filters Lithium-ion secondary batteries Connectors Sensors Thermistors
Modules		RF modules Multilayer ceramic devices Connectivity modules Multilayer resin substrates (Multilayer LCP Product) Power supply modules Solutions
Others		Machinery manufacturing Sales of software

New segment classification (FY2022 –)

Segments	Net sales classification	Main products
Components	Capacitors	Multilayer ceramic capacitors
	Inductors/ EMI filters	Inductors EMI suppression filters
Devices/ modules	High frequency devices and communications modules	SAW filters RF modules Multilayer ceramic devices Connectors Connectivity modules Multilayer resin substrates (Multilayer LCP Product)
	Battery and power supply	Lithium-ion secondary batteries Power supply modules
	Functional devices	Sensors Timing devices (Resonators)
Others		Solution business Medical products Machinery manufacturing, etc.

Sources of innovation

Monozukuri strength & supply strength	Customers' and society's needs

and markets, and a business environment that is commoditizing

business mainstays beyond 2030, establish successful models of businesses that have not previously existed, e.g., experience-based strategies, etc.

- Mass customization by standardizing processes/materials

- Solution by optimizing our product technology with our customers
- Meet customer requirements with timely and stable supply

Expansion of business opportunities

- Supply power to achieve cost competitiveness
- On-site capability, including Integral technology and continuous improvement

- Provide value to a wide range of customers with our distinctive technologies and stable supply

Sales breakdown by segment

Devices/modules
45.0%
815.0 billion yen

Functional devices
5.9%
106.4 billion yen

Battery and power supply
10.0%
180.4 billion yen

High frequency devices and communications modules
29.1%
528.2 billion yen

Others
0.7%
13.2 billion yen

Components
54.3%
984.3 billion yen

Fiscal 2021
Sales by Segment

1,812.5 billion yen

Capacitors
43.5%
788.5 billion yen

Inductors/EMI filters
10.8%
195.8 billion yen
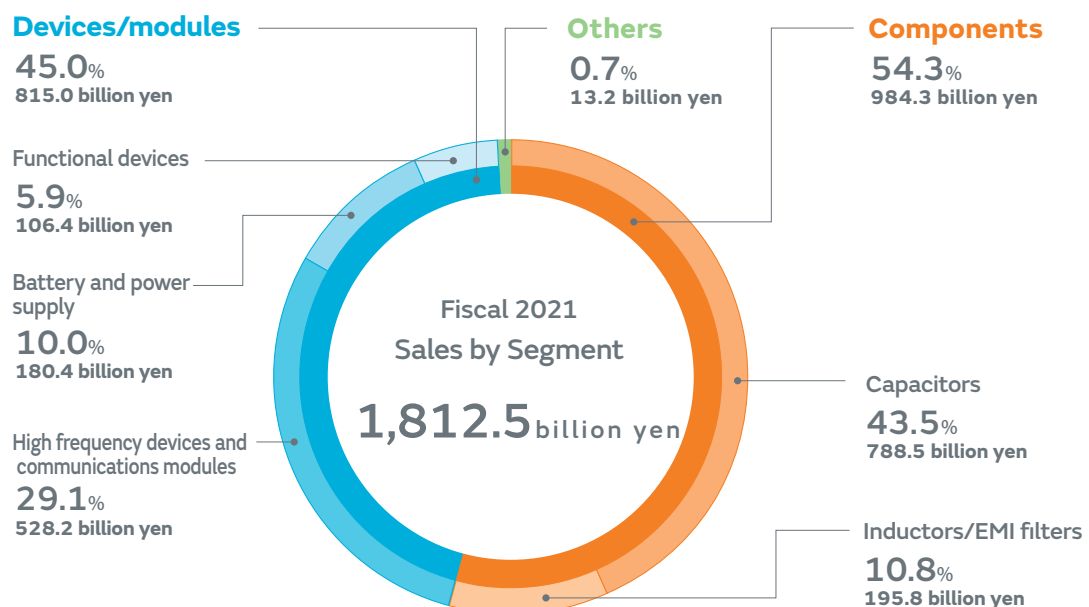
<table>
<tr><td>**1**
Standard-products business (EI)
Components</td><td>**Main products**
Capacitors: Multilayer ceramic capacitors (MLCCs), etc.
Inductors/EMI filters: Inductors, EMI suppression filters, etc.</td></tr>
</table>

Definition of layer 1	Consists of component products such as MLCCs and inductors. This is a business that we have built up since our founding and will continue to drive growth as a core business. We will continue to strengthen our existing strengths in technology, supply, cost competitiveness, and monozukuri.
Key issues	● Improving business efficiency with the aim of further solidifying business foundations ● Increasing production capacity to meet growing demand in the areas of communications and mobility ● Establishing a production system that can flexibly respond to changes in the business environment and increased demand by accelerating smart factory initiatives, improving productivity, and fostering overseas production bases
Our vision for 2030	● To secure business opportunities in the growing market while working to increase business efficiency and achieve lean business operations ● To play a role in technology strategies and new product creation as the basis for layer 2 and layer 3 ● To be able to maintain a competitive advantage over competitors ● To lead Murata's ESG initiatives and make a significant contribution to solving social issues

FY2021 results and FY2022 forecast

Capacitors

Trends in net sales (Billion yen)

788.5 **+11%**

FY2021 results → FY2022 forecast

Inductors/ EMI filters

Trends in net sales (Billion yen)

195.8 **+10%**

FY2021 results → FY2022 forecast
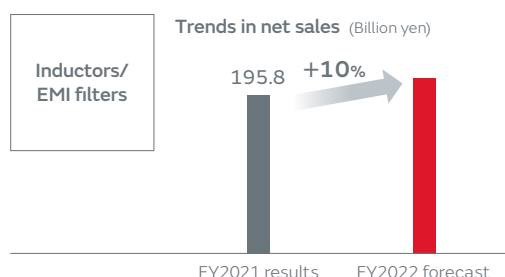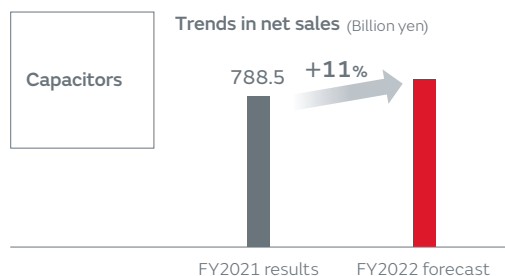
* From earnings forecast announced on April 28, 2022

Business × SDGs

MLCC that puts environmental load reduction into practice based on "light, thin, short, and small" characteristics

Since our founding, we have been pursuing miniaturization of MLCCs and have supplied products to a wide range of markets. Through the development of "light, thin, short, and small" technologies, we respond to the needs of society and contribute to improving the convenience of people's lives and the sustainable use of resources through our customers' products.

We will continue to contribute to the further miniaturization and enhanced multifunctionality of electronic devices and to resource and energy conservation by making them lighter, thinner, shorter, and smaller, in response to the growing needs for miniaturization and larger capacity, such as the spread of 5G-compatible smartphones and wearable devices.

https://corporate.murata.com/en-global/csr/sdgs-initiatives/case2-mlcc

Reduction of materials used by making MLCCs lighter, thinner, shorter and smaller

Volume (Index): 1.0, 0.8, 0.6, 0.4, 0.2, 0

−50%, −65%, −60%, −70%, −80%, −75%

| 1210/3225M | 1206/3216M | 0805/2012M | 0603/1608M | 0402/1005M | 0201/0603M | 01005/0402M |

Size (inch/mm)

Capacitors

Multilayer ceramic capacitors (MLCC)

Employed in mobile equipment, home appliances, IoT devices, and more, MLCCs can temporarily store and discharge electricity, absorb noise in signals, extract signals with certain frequencies, and block direct current and pass alternating current only. MLCCs are also used for applications for which high reliability is required, including automotive, medical, and aerospace equipment.

Business opportunities

- Increased demand for components due to 5G and advancements of automobile electrification

Strengths

- Extensive product lineup/High market share
- Technological capabilities and monozukuri strength that enable small, high-performance products, ensure reliability and high quality
- Worldwide sales network and the largest supply capacity in the industry
- Profitability based on integrated manufacturing systems from materials to finished products

Competitors

Samsung Electro-Mechanics (South Korea), TAIYO YUDEN (Japan), TDK (Japan), Yageo (Taiwan), etc.

Risks

- Deterioration in market conditions due to global economic stagnation and increasing geopolitical risks, and the resulting fluctuations in demand for electronics products
- Changes in the business environment due to intensified competition with competitors

Growth strategies

(1) Increase production capacity to meet growing demand for components

Demand for components is expected to continue to increase in the communications and mobility markets. We will further expand the scale of our operations by leveraging our competitive advantage of having the largest production capacity in the industry.

(2) Plan and execute growth scenarios based on risks such as the rise of competitors

In the MLCC market, which is expected to grow in the future, competition with existing competitors is expected to intensify. We aim to achieve sustainable business growth by paying attention to the competitive environment.

(3) Continue to maintain the top market share through continuous innovation and a solid supply system

Murata's share of the MLCC market is 40%, with a high share of 50% in the automotive market, which is expected to grow in the future. We will maintain and improve our market position by further strengthening the competitive advantages we have cultivated to date.

TOPICS   Increased production capacity by constructing new production buildings

In order to meet increasing demand for MLCCs over the medium to long term, Murata has been increasing production capacity at its production bases in Japan and overseas. In fiscal 2021, we began construction of new production buildings in Thailand and at Izumo Murata Manufacturing Co., Ltd. (Shimane Prefecture). Construction is scheduled for completion in fiscal 2022 and fiscal 2023, respectively.

Rendering of Izumo Murata Manufacturing Co., Ltd.'s new building

Inductors/EMI filters

Inductors (coils)
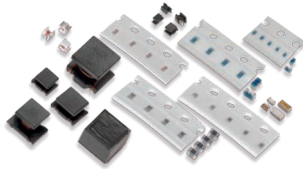
Inductors work by making electricity and magnetism interact with each other to convert voltage and stabilize current, etc. Together with capacitors and resistors, they are the basic components of electronic circuits. Like capacitors, they are electronic components commonly used in many different electronic devices.

Business opportunities

- Increased demand for components due to 5G and advancements of automobile electrification
- Growing need for higher performance and reliability of RF inductors and power inductors

Strengths

- Extensive product lineup/High market share
- Optimal product design using various manufacturing methods
- High quality, high customer support, and the evaluation and analysis technology to support it
- High supply capacity to meet strong demand

Competitors

TDK (Japan), TAIYO YUDEN (Japan), Cyntec (Taiwan), Sunlord (China), etc.

Risks

- Deterioration in market conditions due to global economic stagnation and increasing geopolitical risks, and the resulting fluctuations in demand for electronics products
- Intensified competition with competitors

Growth strategies

(1) Provide new customer value in response to market changes

In the future, technologies and applications in the in-vehicle system market and communications market will undergo major changes. In the in-vehicle system market, demand for power inductors and inductors for interfaces will grow, and in the communications market, as modules inside smartphones become smaller, RF inductors will become more compact and have higher Q*. We are working to provide new customer value by firmly grasping changes in the market and customers, releasing new products such as new power inductors for automotive applications and compact, high-Q RF inductors.

(2) Provide products that meet market demands by integrating development capabilities and basic technologies

Murata creates roadmaps of markets, products, and technologies for the next five to ten years, and quickly commercializes products demanded by customers through product development that anticipates future

needs. Murata also possesses multiple methods and processes for development and monozukuri technologies, including multilayer, winding, and film. By integrating advanced material development, product development, process development and basic technologies (simulation, reliability evaluation, mounting technology, application), we will provide products that meet market demands.

(3) Expand global support system for customers

The need for noise suppression is further increasing in the in-vehicle system market due to the advancement of automobile electrification and the expansion of 5G in the communications market. By deepening relationships with customers and pursuing cutting-edge technologies through customer support for noise suppression and the provision of new products and solutions using EMC labs in eight locations not only in Japan but also in Europe, the United States, China, and other parts of the world, we will become the "No. 1 EMC Solution Provider."

*Q stands for Quality Factor. The higher the Q value, the higher the inductor characteristics

---

TOPICS	**Released new products in response to the advancement of automobile electrification**

We have developed and commercialized a large number of products to meet various customer needs in line with the advancement of automobile electrification. Most recently, we have released high-current power inductors and interface inductors.
- "DFE32CAH_R0 Series" metal power inductors with the world's best electrical characteristics in 3225 (3.2 x 2.5 mm) size for automotive applications

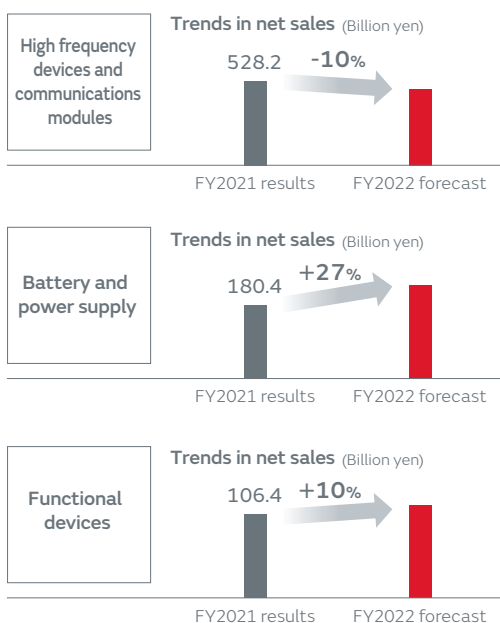- "LQW21FT_0H Series," the world's smallest inductor for automotive PoC* circuits, 2012 (2.0 x 1.2 mm) size
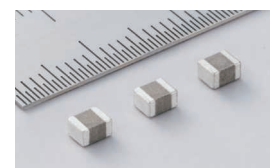
DFE32CAH_R0 Series

* Power Over Coax: A method in which the signal line and power line are integrated into a single coaxial cable

2

Application-specific components business (ASC)
Devices/modules

Main products
High frequency devices and communications modules:
SAW filters, multilayer device chips, RF modules, Multilayer resin substrates (Multilayer LCP Product), connectivity modules, connectors, etc.
Battery and power supply:
Lithium-ion secondary batteries, power supply modules, etc.
Functional devices: Sensors, timing devices (resonators), etc.

Definition of layer 2	This business consists of device and module products such as SAW filters, RF modules, Multilayer resin substrates (Multilayer LCP Product), connectivity modules, lithium-ion secondary batteries, and sensors, and has established its business model along with the growth of cell phones and smartphones. In addition to pursuing technological differentiation from our competitors, we are developing our business by leveraging our strengths, such as our abundant technologies, problem solving through product technology-driven discussions with our customers, and timely and stable supply.
Key issues	● Establishing technology that differentiates us from competitors ● Promoting thorough standardization and mass customization of processes and materials to accommodate variable-mix, variable-volume production ● Strengthening the financial health of businesses with low profitability
Our vision for 2030	● To expand the number of markets entered beyond those centered on smartphones ● To be able to establish differentiated technologies and develop and produce products that contribute to business growth in layer 2 ● To also contribute to the creation of layer 3 business model

FY2021 results and FY2022 forecast

High frequency devices and communications modules

Trends in net sales (Billion yen)

528.2 **-10%**

FY2021 results   FY2022 forecast

Battery and power supply

Trends in net sales (Billion yen)

180.4 **+27%**

FY2021 results   FY2022 forecast

Functional devices

Trends in net sales (Billion yen)

106.4 **+10%**

FY2021 results   FY2022 forecast

* From earnings forecast announced on April 28, 2022

Business × SDGs

Murata's power supply modules contribute to energy consumption

In data centers, which are critical infrastructure supporting the development of technologies such as 5G, AI, IoT, and big data, efforts to address the rapid increase in energy consumption have become a common industry issue. Murata's power supply modules contribute to energy conservation by pursuing high efficiency, low heat generation, conserve space, and low noise at the component level.

Approximately 80% of Murata's power supply modules that have received 80 PLUS* certification have received TITANIUM, the highest rating. We will continue to take on the challenge of further energy conservation in the power supply market on the strength of "high efficiency."

https://corporate.murata.com/en-global/csr/sdgs-initiatives/case1-power

* Power saving program for electrical equipment promoted by the 80 PLUS Program (http://www.80plus.org)

High frequency devices and communications modules 1

Surface acoustic wave (SAW) filters

SAW filter is a filter that can pick out electric signals in a particular frequency band, using the surface acoustic wave that propagates along the surface of the piezoelectric substrate. Ensuring smooth wireless communication between devices requires high-functioning filters that can let though electric signals in a particular frequency band, while eliminating noises of unnecessary frequency bands.

Business opportunities

- Expansion of the communications market through the advancement of 5G
- Addition of wireless communications functions to IoT devices
- Advancement of technological trends such as higher frequency and smaller filters with superior composite performance

Strengths

- Extensive product lineup/High market share
- Superior characteristics (high frequency/broadband/high attenuation/low insertion loss/small size) required in the future communications market
- Reliable quality
- Largest production capacity in the industry and reliable supply capability

Competitors

TAIYO YUDEN (Japan), Qualcomm (U.S.), Qorvo (U.S.), Wisol (South Korea), Shoulder (China), etc.

Risks

- Deterioration of market environment due to global economic stagnation and heightened geopolitical risks
- Intensified competition with competitors and entry by low-cost manufacturers

Growth strategies

(1) Secure profit-earning opportunities by differentiation in high-value-added products and strengthening cost competitiveness

In addition to our proprietary I.H.P. and TC-SAW technologies, we will strengthen alliances for new technologies and strive to enhance cost competitiveness by improving productivity to respond to the rise of low-cost manufacturers.

(2) Mass production of filters using XBAR technology

With the spread of 5G and next-generation Wi-Fi standards, the need for high-performance high-frequency filters with a broad bandwidth is expected to increase. XBAR technology has advanced characteristics at high frequencies and in a broad bandwidth, as well as high compatibility

with the SAW filter manufacturing process. This will strengthen our business as a differentiating technology for filters.

(3) Explore new applications and customers by leveraging Murata's strengths in the expanding communications market with 5G

With the spread of IoT devices other than smartphones, the wireless communications function is added to various applications. In addition, with the introduction of 5G, the combination of incorporated frequency bands is becoming more complex, and the technical requirements for filters are becoming more challenging. Murata will expand its business in new markets by leveraging its technological strengths.

TOPICS   Acquired "XBAR technology" in anticipation of full-scale 5G adoption

In March 2022, we acquired Resonant Inc. and obtained its highly proprietary "XBAR technology." XBAR technology achieves a high level of characteristics such as high attenuation, low loss, and steepness in the high-frequency band, further suppressing signals that would otherwise have to be received as noise with conventional technologies. This is an extremely important technology for

achieving high-speed and comfortable wireless communications such as 5G. By integrating the filter technology, process technology, and monozukuri strength that Murata has cultivated so far with its SAW filters and I.H.P. SAW filters together with XBAR technology, Murata will provide even better high-frequency filters.

High frequency devices and communications modules 2

RF modules
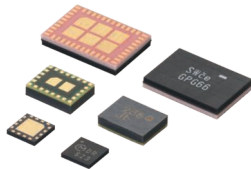
RF modules are electronic component units that realize an analogue high-frequency circuit that controls communications among wireless devices by integrating various key devices in a small package. This module is comprised of passive devices such as SAW filters, high-power amplifiers (PA) in transmission circuits, low-noise amplifiers (LNA) in reception circuits, antenna changeover switches and other semiconductor devices. RF modules are used for various types of wireless devices including smartphones and tablet PCs.

Business opportunities

- Expansion of frequency bands, advancement of communications technologies driven by growing adoption of 5G
- Advancement in modularization and miniaturization of electronic components

Strengths

- In-house production of key devices such as filters and packaging technologies
- Identification of customer trends and capability to propose products utilizing sales and technical support network
- Business speed, reliable quality and stable supply enabled by integrated production

Competitors

Skyworks Solutions (U.S.), Qorvo (U.S.), Qualcomm (U.S.), Broadcom (U.S.), etc.

Risks

- Potential moves by customers and component suppliers due to heightened geopolitical risks
- Entry of low-cost module manufacturers into the market

Growth strategies

(1) Realize business growth by investing resources in differentiating technologies

In the current competitive environment, the level of technology of competitors is very high. We will establish a competitive advantage by fostering or acquiring differentiated technologies.

(2) Empower Digital Envelope Tracking Technology

We will differentiate ourselves from our competitors and capture business opportunities through the "Digital Envelope Tracking Technology" of Eta Wireless Inc., which we acquired in September 2021.

(3) Enhance fundamental capabilities to improve position in growing markets

In the 5G and the 6G era, which is also called Beyond 5G, "ultra-low power consumption" and "ultra-reliable communication" are required. In order to survive in the global competition, we will continue to strengthen our high technological capabilities and high-quality monozukuri that Murata has cultivated over the years.

TOPICS Acquire differentiated technologies through M&A

Anticipating an increase in demand for modules, Murata has been conducting M&As to strengthen its business since the 2010s. In 2012, we acquired the cellular PA business from Renesas Electronics Corporation, and in 2014, we acquired Peregrine Semiconductor Corporation, which manufactures switch ICs using silicon-based materials, bringing semiconductor technology in-house to differentiate our modules. We have expanded our high-frequency module business by combining our previous strengths in passive devices such as SAW filters and packaging technology. In 2021, we also acquired Eta Wireless Inc. to acquire new technologies related to power consumption reduction. We aim to grow our business through the enhancement of differentiated technologies acquired through M&A.

High frequency devices and communications modules 3

Multilayer resin substrates (Multilayer LCP Product)
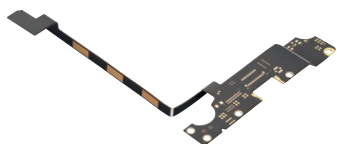
Multilayer LCP Product is a thinner Multilayer resin substrates comprising LCP (liquid crystal polymer) sheets. It features exceptional RF characteristics and realizes a substrate with a stable performance due to low water absorption. It is also characterized by the ability to handle a flexible bending process because it does not require an adhesive layer. In addition, high multiple layers are possible by using Murata's multilayer technology, enabling high flexibility in design. Multilayer LCP Product is used in smartphones, wearable devices, and other applications, contributing to smaller, thinner, and higher performance devices with low energy consumption.

Business opportunities

- Expansion of high-frequency communication markets such as 5G and UWB (Ultra Wide Band)
- Resolution of customers' issues by utilizing characteristics, such as low water absorption and shape retention property

Strengths

- Superiority in low transmission loss properties in the high-frequency band
- High multi layers, low water absorption, flexibility that can handle complex bending process
- Extensive mass production experience for LCPs

Competitors

ZDT (Taiwan), Flexium Interconnect (Taiwan), etc.

Risks

- Intensified competition with competitors
- Changes in the demand due to changes in customers' design

Growth strategies

(1) Promote sales expansion activities in new business areas and to new customers

In addition to earnings in existing business areas, we will expand our customer base and diversify revenue sources, including strengthening internal synergies.

(2) Further enhance differentiated technologies

We will further strengthen our competitive advantage in terms of characteristics in the 5G millimeter wave bands and UWB areas.

(3) Improve productivity through the promotion of smart factories and the development of cost reduction technologies

We will strengthen our monozukuri strength and cost competitiveness by continuing productivity improvement activities.

TOPICS Business opportunities in 5G millimeter wave bands and UWB (Ultra Wide Band)

Millimeter waves and other extremely high-frequency waves are used in the 5G network, so Multilayer LCP Product is increasingly used in millimeter wave transmission lines, as they can take advantage of the low-transmission loss properties at extremely high frequencies, one of the features of Multilayer LCP Product. In addition, as the frequencies used become higher, Multilayer LCP Product will be able to show its competitive superiority in terms of transmission loss compared with competing technologies. Leveraging its feature of low water absorption, it is also highly stable for uses such as antennas, which utilizes resonance. Now that smartphones have UWB and in some cases are used in digital key authentication utilizing its highly accurate positioning and measurement of distance, the market is expected to expand. Multilayer LCP Product has frequency stability and is suitable for UWB antennas. We will aim for business growth through the combination of high-performance materials and Murata's unique ideas, developed based on our multilayer technology and high-frequency technology.

High frequency devices and communications modules 4

Connectivity modules

Connectivity modules are essential compound components that wirelessly connect various devices. These are mounted on familiar home appliances used in our daily lives, such as smartphones, tablet PCs, digital cameras and air conditioners, and in-vehicle devices such as car navigation systems. They are also used in various settings such that they enable users to download and upload photos and music from the Internet, and perform hands-free calling while driving.

Business opportunities

- Growing adoption of 5G
- Full-fledged consideration of Beyond 5G
- Expansion of wireless communication functions in automobiles and various types of devices following the development of an IoT society

Strengths

- Millimeter wave modules using Murata's unique Multilayer resin substrates (Multilayer LCP Product)
- Technologies that enable miniaturization and high performance as well as ensure reliability
- Software technologies that improve connectivity
- Product proposal capabilities and partnerships with customers by leveraging our knowledge of communications cultivated through our smartphone business

Competitors

u-blox (Switzerland), LG Innotek (South Korea), etc.

Risks

- Intensified competition with competitors
- Delays in new product releases due to delays in the start-up of new applications such as automated driving

Growth strategies

(1) Execute portfolio review

We will review our business structure, which is centered on smartphones, and aim to expand our business in diverse areas centered on mobility and IoT, which are expected to grow in the future.

(2) Cultivate new markets and develop and expand sales of new products

We will sow the seeds of the future in response to expanding business opportunities resulting from changes in the communications system.

(3) Strengthen the structure with a view to further market expansion in the area of communications

We will pursue a production system that can efficiently respond to diverse customer requirements by realizing a thick and short value chain through further strengthening the cooperation between development and manufacturing.

TOPICS   Reviewing the portfolio and tackling new markets

We will review the smartphone-oriented business structure that has achieved significant growth to date and capture business opportunities in the communications area in a new and greatly expanding diverse market. We aim to continue to promptly supply products that respond to various changes, such as 5G and new communication standards, by leveraging our strengths such as in Murata's unique Multilayer resin substrates technology, design technology that realizes miniaturization, high performance as well as ensure reliability, and software technology that improves connectivity. In addition, Murata strives to contribute to the resolution of social issues and reduction of environmental burden by proposing appropriate products in diversified business opportunities such as environment and wellness.

Battery and power supply

Lithium-ion secondary batteries

Murata's lithium-ion secondary batteries are classified into three types: cylindrical, laminated, and small batteries. The cylindrical type, on which we are particularly focusing, has the advantages of high output, safety, long-term storage, and high temperature characteristics. We will leverage these strengths to expand our business in the expanding markets for small drive systems and storage batteries to contribute to the enrichment of society by responding to the need for decarbonization, renewable energy, energy conservation, and so on.

Business opportunities

Cylindrical type
- Trends toward cordless power tools and gardening tools, as well as shift to decarbonization (from gasoline engines to batteries and motors)
- Utilization of natural energy, in-house consumption of electricity, and backup power supplies during power outage

Small type
- Greater demand for small batteries for automotive, medical, wearable devices and IoT applications

Strengths

- High-quality, high-output technology
- Packaging technology that enables impact resistance and miniaturization

Competitors

Samsung SDI (South Korea), LG Chem (South Korea), Panasonic (Japan), TDK (Japan), VARTA (Germany), etc.

Risks

- Market entry and expansion by competitors in our target markets
- Rising resource prices due to increased resource depletion risk and geopolitical risk
- Global environmental regulations and trend towards local production for local consumption

Growth strategies

(1) Further enhance differentiated technologies

We will strengthen Murata's technological strengths based on our superior materials technology and expand our business in growing markets.

(2) Establish business foundation as Murata's environmental contribution business

We aim to capture business opportunities on the environmental front such as through storage batteries using Murata's unique FORTELION lithium-ion secondary battery, which uses olivine-type lithium iron phosphate as the cathode material and has a long service life and high safety characteristics.

(3) Build a strong business foundation through timely investment and strengthening of monozukuri

We will focus on markets where we can leverage our strengths to achieve stable future growth, while also strengthening our monozukuri strength to maximize our differentiated technologies.

TOPICS **Contributing to the enrichment of society with Murata's batteries**

Lithium-ion secondary batteries are positioned as the cornerstone of business development in environment-related business opportunities. The contribution to safety, renewable energy, and energy conservation is in line with social issues, and we can expect growth in our battery business and power supply business as well as storage battery business through the integration of the said businesses. In the short term, electrification is progressing for power tools, and in the medium to long term, the use of batteries is expected to expand in a wide range of applications, driven by decarbonization. We will contribute to the realization of a decarbonized society by providing the world with products that leverage Murata's strengths.

Functional devices

Sensors

Sensors are electronic components that convert the various energies around us into signals and data that are easy for humans and machines to handle. Murata has a diverse product lineup ranging from high-performance, high-reliability devices using ceramic material technology, microfabrication technology such as MEMS, and devices and modules using magnetoresistive elements.

Business opportunities

- Increased demand for high-performance sensors driven by growing use of advanced driver assistance systems (ADAS) and self-driving cars
- Increased demand for components due to the advancement of automobile electrification
- Need for sensor nodes due to expansion of AI and cloud-based services
- Creating new demand through value co-creation with external partners

Strengths

- Low noise, high sensitivity, high accuracy, robustness and reliability achieved by Murata's MEMS designing, processing and packaging technologies
- Extensive sensor technology and a diverse product lineup
- Creating and proposing value to customers with differentiated elements through the use of various materials

Competitors

Bosch (Germany), Analog Devices (U.S.), STMicroelectronics (Switzerland), Panasonic (Japan), TDK (Japan), Nippon Ceramic (Japan), etc.

Risks

- Intensified competition with competitors
- Delays in releasing new products in response to needs arising from changes in the external environment
- Acquisition of technology to meet diverse market need

Growth strategies

(1) Create core technologies and invest resources in applications that leverage our strengths

The growth of the mobility and IoT markets is expected to lead to a significant increase in the number of functions requiring sensors. We aim to expand our sensor business by focusing on areas where we can leverage Murata's strengths in response to expanding business opportunities.

(2) Differentiate technologies and create new value with partners

We will further refine our technological capabilities, which is one of our strengths, and at the same time, we will aim to co-create value with our partners and tackle business challenges with new ideas that are not bound by existing areas.

(3) Establish SCM to maximize product value

Sensors are characterized by high-mix low-volume production, and we will build a process that can provide value to customers while differentiating our products and accommodating high-mix production.

TOPICS **Responding to advances in automated driving technology with advanced and diverse sensor technologies**

For the automated driving market, which is expected to grow in the future, there is a growing need for sensing technology to ensure safe and comfortable vehicle operation. MEMS inertial sensors that can measure vehicle position, attitude, and direction with higher precision when driving; ultrasonic sensors for peripheral detection necessary to prevent false starts during automatic parking and parking; and thermistors that contribute to overheat protection and temperature detection for various devices to maximize vehicle performance and ensure stable operation.

These sensors are a business area where Murata can demonstrate its strength, and we will capture business opportunities in this growing market with differentiated technologies.

Gyro-acceleration combo sensor

3

Creation of new business models

■ Background and positioning of layer 3

With the expansion of the electronics area surrounding Murata, such as the progress of digitalization associated with the spread of 5G, the electrification of automobiles, and the new business opportunities in the out-car area that will result, the definition of customers is expected to change. For example, in the area of communications, our business has been mainly supplying components and modules to smartphone manufacturers, but with the expansion of applications utilizing communications, such as local 5G and telemedicine, the value demanded by our customers is shifting to software and solutions. For such customers, we are required to propose solutions that include not only the sale of electronic components but also the utilization method of communications. In order to continue to provide value to our customers in an ever-changing

society, Murata must expand the value it can offer.

Against this backdrop, Murata, as layer 3, will build a new business model by combining with layers 1 and 2 and utilizing its accumulated knowledge of communications and other areas, as well as by identifying a wide range of possibilities without being bound by the conventional framework of markets, commercial products, or business forms.

Of course, we will continue to provide value through technological innovation in layers 1 and 2 of Murata's existing base business. Layer 3 is positioned as an area of challenge for Murata's long-term development. In addition, we will consider areas that are difficult to tackle by extending Murata's existing capabilities and framework, including co-creation with external parties.

■ Steps toward the realization of layer 3 and actions under Medium-term Direction 2024

Under Medium-term Direction 2024, we will identify areas where Murata can leverage its strengths while building on quick successes and small successes as the first step toward making layer 3 business a pillar of our portfolio in 2030 and beyond. Furthermore,

in order to create a new business of layer 3, we will implement a concrete strategy that includes human resources and organizational structure to address issues that cannot be addressed within the existing internal framework.
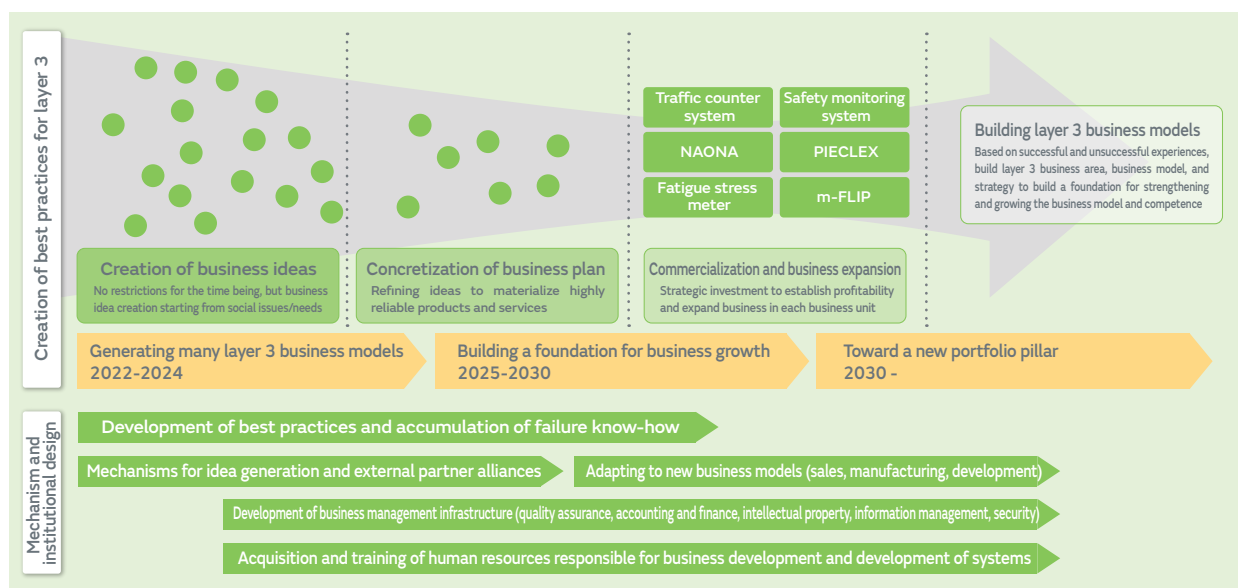
Case study

<div>

PIECLEX

New business combining Murata's strengths with those of its partners

Murata and Teijin Frontier have jointly developed the world's first piezoelectric fabric "PIECLEX" that generates electrical energy and exhibits antimicrobial performance when a motion is applied. This is a new energy-utilizing technology that converts the force of motion such as human movement into electrical energy and demonstrates antimicrobial performance by combining Murata's piezoelectric technology cultivated through the development and manufacture of products such as SAW filters and sensors with Teijin Frontier's fiber technology from materials to products. The textile area has been a difficult business area to tackle with Murata's existing capabilities or an extension of them, but the business alliance with Teijin Frontier has made it possible to commercialize businesses by acquiring new capabilities.

</div>

<div>

Worker safety monitoring system

New business to solve users' problems and improve the value of their experience

TODA CORPORATION, MIDORI ANZEN, and Hitachi Solutions have jointly developed the "worker safety monitoring system," which uses helmet-mounted sensor devices to monitor workers' biometric data and surrounding environment (work environment) in real time in industries that require worker safety management, such as construction and manufacturing. This will be a business that provides solutions to the social issue of the need for a safe and comfortable work environment against the backdrop of a declining construction workforce and aging field workers due to Japan's shrinking population. The solution to the user's problems and the value of the experience are important factors in expanding the business of the "worker safety monitoring system."

</div>

<div>

Traffic counter system

New business that uses data to solve social issues

The "traffic counter system" is a system that collects traffic volume data by utilizing Murata's strengths in "communications" and "power supply" technologies, and is developing its data sales business mainly in Southeast Asia, where serious traffic congestion is a social issue. Data collected through traffic counters is used for measures such as improving traffic infrastructure and controlling traffic volume to relieve congestion. Through this business, Murata has been able to build a platform of many know-hows in terms of establishing technologies, collaborating with local companies, and dealing with different licensing procedures in different countries and regions. This is a platform that meets the challenges faced by companies starting a data business, and we will aggressively pursue data business development beyond traffic volume.

</div>

Murata's human capital
– Strengthening human resources base and organizational capabilities –

Basic view

At Murata, the Murata Philosophy, our management philosophy, is at the core of our management and serves as the foundation for our decision-making and actions in the value creation process. In addition, we regard "CS and ES" as key values, and have strengthened our global outreach activities to ensure that employees deepen their understanding of these values along with the Murata Philosophy and put them into practice in their respective organizations and workplaces. We believe that these ongoing activities lead to employee satisfaction and growth, as well as to stronger organizational strength, which in turn becomes a human capital strength that contributes to solving our customers' issues.

Dissemination of the Murata Philosophy SHAZE(management philosophy)

One of the management transformations in Murata's "Vision 2030" is to practice "autonomous and decentralized organizational management." With the rapid expansion of our business in recent years and the expansion of our global sites, each and every employee needs to aim in the same direction, using the Murata Philosophy as a compass, more than ever before. In order to increase opportunities for all employees to deepen their understanding of and become more familiar with the Murata Philosophy, we are working to spread it through a variety of initiatives. Since 2009, training sessions organized by executives to instill our philosophy have been held 427 times in total, and in fiscal 2021, 33 sessions were held with approximately 800 participants. In addition, every year

Training sessions by executives

in October, we observe a "SHAZE awareness Month" and create opportunities for employees to think about the connection between their work and the Murata Philosophy by holding workshops, dialogues, and other events at each workplace.

Direction of maintaining and strengthening human capital

Murata has developed a multi-level remuneration system based on long-term career development. By aligning the company's needs with the career plans of individuals, we have strengthened our human capital by developing rotations for growth, developing specialized skills for technological development and monozukuri, and fostering management skills to transform individual strengths into organizational strengths.

In Vision 2030, we aim to create innovation by expanding the scope of our value offering to include not only solutions to customer issues, but also solutions to social issues. In order to continue to enhance the power of individuals and the organization and achieve sustainable value creation, we will maintain and strengthen our human capital from the following two perspectives.

▪ Developing diverse human resources that is active on a global scale

Murata views diversity and inclusion (D&I) as respecting and taking advantage of not only visible differences such as race, nationality, gender, and age, but also invisible diversity in terms of thoughts, knowledge, experiences, and perspectives, and aims to enhance the strength of the entire organization through friendly competition among diverse individuals and through trust and collaboration across teams. In addition, with the anticipated future labor shortage in Japan, human resource development at overseas sites will be an important issue for improving production capacity overseas over the medium to long term. In addition to dispatching Japanese employees overseas, which we have conventionally done, we will increase the percentage of overseas indirect employees with experience working at other sites to strengthen and develop human resources with global business experience. Through these efforts, we will expand production overseas and strengthen our front-line capabilities, along with the success of our diverse human resources and the enhancement of our employees' abilities and organizational strength, which will lead to increased economic value. We also view the promotion of women's advancement as a priority theme, and in Japan we have set targets and are stepping up our efforts. (▶P.75 Respect for human rights and diversity)

▪ Improving employee engagement

CS and ES have been and will continue to be key values for Murata. Because the scope of CS is expanding to include the resolution of social issues, it is necessary to further enhance the ES of the employees who are responsible for CS. We believe that regularly checking how much employees themselves are experiencing satisfaction and growth in their daily work and implementing the necessary measures will enhance their vitality and help them get where Murata wants to be in Vision 2030. We will also promote health management that encompasses safety and security, based on the recognition that the foundation of CS and ES is the "physical and mental health of employees." (▶P.73 Secure and safe workplace and health management)

We will improve employee engagement by realizing a corporate culture in which employees can feel satisfaction and growth through organizational culture reform, which has been an ongoing effort since 2004, and by continuously reviewing the working environment and systems to enable a variety of employees to demonstrate their abilities.

▌ Developing diverse human resources that is active on a global scale

Target

Percentage of overseas indirect employees*¹ with experience working at other sites
FY2024: 7%, FY2030: 10%

Actions

- Promote an internal rotation system
- Introduce and disseminate an evaluation system based on GLC*²
- Selective training for employees
- Strengthen coordination of global human resources functions

*1: Overseas local staff excluding expats from Japan
*2: Global Leadership Competency: A set of human resource requirements for leaders in order to nurture the leaders who will lead Murata in the future.

In fiscal 2021, the percentage of overseas indirect employees with experience working at other sites was 3%, and we intend to improve this ratio. Up until now, Murata has conducted global rotations, mainly from Japan to overseas. Every year, many personnel are stationed overseas to gain experience working in different cultures, and as of fiscal 2021, approximately 40% of managers in Japan have overseas work experience. In the future, we will further increase the number of human resources with experience working in other sites outside of Japan and create new value by promoting opportunities for diverse human resources to collaborate globally.

In terms of systems, we have clarified our basic approach to human resources as a global policy in order to create an environment in which overseas members with diverse cultures and ways of thinking can demonstrate their capabilities regardless of their location. At each site, we will strengthen human capital by linking and coordinating a series of human capital-related processes, including recruitment, training, placement, and compensation.

In addition, we continue to implement selective training programs to identify and develop future management talent candidates on a global basis. A cumulative total of approximately 90 members have participated to date, both in Japan and overseas, with about half of them holding positions at the department general manager level and above. By encouraging behavioral change through the program, we will focus our efforts on the continuous development of global leaders.

Percentage of overseas indirect employees with experience working at other sites (FY2021)

Japan → Overseas: **17%**

Overseas → Outside of that country (Overseas local staff): **3%**

▌ Improving employee engagement

Target

Positive employee engagement response rate
FY2024: 70% or higher, FY2030: 76% or higher*³

Actions

- Meeting to share case studies of organizational culture reform initiatives
- Executive discussion on improving engagement
- Engagement workshop among department heads
- Continuous review of working environment

*3 Above average level of global high-performing companies

In fiscal 2021, we conducted an employee survey of all employees, which was approximately 75,000 persons globally. The survey results show a 68% positive response rate for engagement, up approximately 10 percentage points from the last survey conducted in fiscal 2019. This was mainly due to an increase in the percentage of overseas respondents, who tended to respond in the affirmative. For further improvement, in addition to the efforts of each organization using the survey results, we believe that action is needed, especially at the level of those close to the manufacturing site, and are taking measures including promoting dialogues with employees and supervisors working on the site and reviewing their working methods. In addition, to further accelerate the efforts of each organization and workplace, the status of discussions on improving engagement among executives is communicated to employees. Among the issues raised during the discussion were: "It is important to have opportunities for communication between supervisors and subordinates,
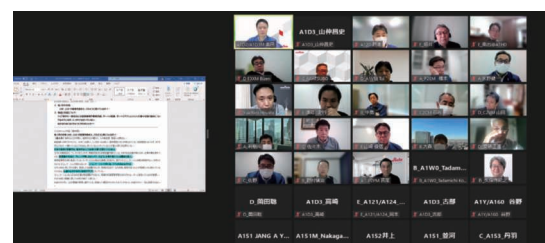
Executive discussions on improving engagement

such as making jobs meaningful and career dialogue," and "Speeches alone will not resonate with employees. Dialogue is important for the company's initiatives to resonate with employees." We will promote activities to improve engagement across the whole Group by interacting with each other beyond the boundaries of our offices, both in Japan and overseas.

In addition, we will further improve the working environment by constantly updating our competitive remuneration design, personnel system, and structure.

60

Strengthening technological capabilities for the future and intellectual property activities to support it

Management transformation | Higher level portfolio management
Form a lean management base | **Preparation for 2030**

Murata will accelerate technological innovation in order to ensure that we continue to create new value. We conduct development in-house, from materials to processes, Manufacturing technology, product design, analysis, and evaluation. In doing so, we develop and accumulate our own fundamental technologies and are creating technology platforms that can be applied to new developments. The appropriate securing and accumulation of intellectual property is becoming increasingly important for maintaining and strengthening the competitiveness of companies. We protect and utilize newly created intellectual property by applying for and obtaining rights to it as patents, or by keeping it confidential as know-how, thereby securing further business advantages.

Forming core technologies of the future by promoting development of elemental technology

Murata has six platform technology domains. By adding core technologies acquired through M&As to Murata's unique core technologies that have been refined over many years, we will create further differentiated technologies and innovations. In addition, we will utilize the technologies and experience we have developed through research and development of components, devices and modules, and combine them with software and communication networks to create a third layer of business.

Platform technologies and core technologies

Domain	Core technologies & Description
Materials technology	Materials design · Materials processing Materials technology is the technology to simulate and model material composition, crystal state, crystal structures, and electrical properties, as well as to disperse and combine these materials while controlling particle sizes and crystal structures.
Front-end process technology	Laminating & stacking · Printing · Sintering · Surface treatment · Precision processing · Semiconductor devices · Semiconductor and MEMS fine processing Front-end process technology includes dielectric sheet formation and lamination technology, internal electrode and wiring formation technology on ceramic sheets, fine processing on semiconductor wafers, and Semiconductor and MEMS device design technology.
Back-end process technology	Packaging · Measurement & testing Back-end process technology mainly includes the technology to achieve miniaturization and high reliability of devices through high thermal resistance bonding, hermetic sealing and more complex 3D assemble and package, as well as measurement and testing technologies to evaluate and select such technologies.
Manufacturing technology	Equipment design · Automation · Industrial engineering Manufacturing technology includes equipment design technology to achieve unique manufacturing technologies, automation technology to convey ultra-small and odd-shaped products at high speeds and with low damage, and control technology to manufacture high-quality products.
Product design technology	High frequency design · Device design · Simulation · Modeling · Circuit design · Software · High reliability design Product design technology includes, mainly, the technology to design RF components and modules, to achieve high performance and small devices using software, etc., to achieve high reliability under harsh environmental conditions, and to model and simulate phenomena such as electromagnetic field analysis, thermal analysis, and stress analysis.
Analytical technology	Materials characterization · Failure analysis Analytical technology includes the technology to physically and electronically evaluate material compositions through non-destructive analysis, thermal analysis, organic and inorganic analysis, and surface analysis, and technology to identify the cause of failures that occurred in materials and products through the abovementioned analytical methods.

"Preparation" for innovation creation

Murata launched the Preparation Project in fiscal 2020. In the Project, candidates for the next generation of management leaders spent several months discussing with the current management to determine the direction of change in the business environment expected in 2030 and beyond, to identify opportunities and risks as hypotheses, and to clarify events that should be addressed today. In terms of technological "preparation," we view the development of technologies and businesses for the spread of 6G and the resolution of environmental issues as future business opportunities, and we are plotting a technological roadmap that will lead to the development of new technologies and production process reforms for the company.

Murata is also working to create new businesses by combining its core technologies in materials, processes, and other areas with new business domains. Currently, we are working to determine a business theme that will develop new businesses from a long-term perspective of 10 to 20 years into the future, targeting the domain of solving social issues. We also intend to focus on partnerships and collaborations with external parties. (▶ P.23 Message from the Director of Corporate Technology & Business Development Unit)

Going forward, Murata will continue to "prepare" for sustainable growth in the future from various angles.

Intellectual property activities that support Murata's technologies and businesses

Organizational structure for intellectual property activities

Murata's intellectual property function consists of two departments: the corporate IP Department and the IP Planning Department. Within this context, they provide prompt support for business and development by deploying personnel who are closely connected to sites, and contribute to business growth by strengthening intellectual property governance from a corporate perspective. We have also established intellectual property sites overseas and have a system in place to promptly protect and utilize intellectual property that has been created locally. The details of intellectual property activities are continuously reported to the Board of Directors to enhance the use of intellectual property information in management and strengthen intellectual property risk management. In February 2022, Murata was selected as one of the Clarivate Top 100 Global Innovators 2022* as a recognition of these efforts, which were highly acclaimed externally.

* For more information, please see here. https://corporate.murata.com/en-global/newsroom/news/company/general/2022/0224

	Roles	Features
Corporate IP Department	● Formulation of intellectual property strategies that are tied to business and development strategies ● Construction of a strong intellectual property portfolio with an awareness of rights utilization	On-site-based approach
IP Planning Department	● Provision of intellectual property information for portfolio management ● Intellectual property risk management, including contract negotiation and dispute resolution ● Identification and resolution of intellectual property issues from a company-wide perspective	Corporate perspective

For more information on our measures concerning intellectual property, please see here.
https://corporate.murata.com/en-global/csr/governance/ip

In-house awareness and employee training

Murata established "Basic Policy for Intellectual Property Activities" to encourage employees to engage in the intellectual property activities that would benefit the business beyond the organizational framework. We are raising awareness of intellectual property throughout the Group through stratified/vocational training, confidential information management training, holding intellectual property awareness forums, and the development and operation of an e-learning environment.

Trends in the number of patents owned by Murata
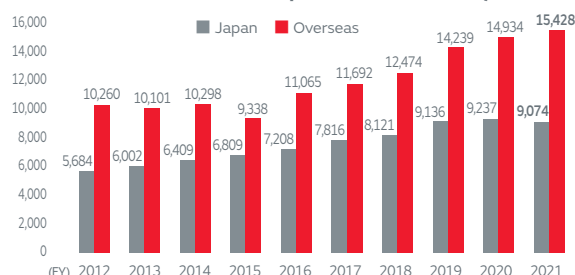
Planning and execution of global intellectual property utilization strategies

Murata uses objective information-based analysis in making comparisons with competitors in terms of patent competitiveness and asset value. We formulate intellectual property strategies based on these analyses and the growth strategies of each business, with the aim of creating an optimal intellectual property portfolio.

In addition, as Murata's ratio of sales outside of Japan to net sales increases, we are evaluating our intellectual property portfolio from a global perspective. By utilizing the information obtained from the analysis and evaluation to review our intellectual property strategy, we are helping to maintain and improve the competitive advantage of our businesses.

Especially in the third layer of business domain, the intellectual property function is involved from the early phases of research and development, conducting business environment surveys and technology searches from an intellectual property perspective to support commercialization promotion and business model development. In this way, the scope of activities

of the intellectual property function is being expanded in line with the expansion of Murata's business domains, and efforts are being made to ensure that the technologies and know-how that are the source of Murata's competitiveness are protected.

Analysis of a specific business using intellectual property information (example)
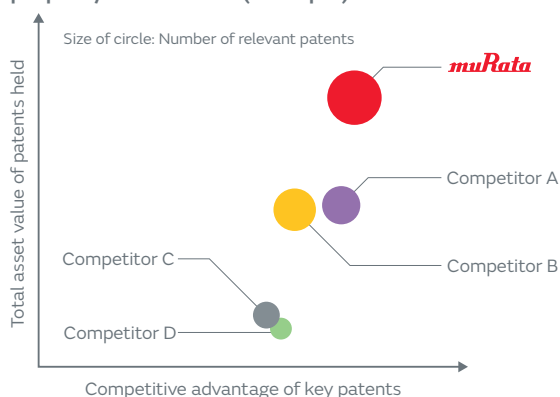
Initiatives on social issues through business activities overall

In order to focus on to get where Murata wants to be under our Vision 2030, we have set nine key issues (materiality) from the perspective of "contributing to solving social issues through our business" and "initiatives on social issues through business activities overall," starting from social issues. Through the resolution of these issues,

Medium-term target results (fiscal 2019-2021)

Key areas	Key issues	Target	Main results	Evaluation
Environment	Strengthening Murata's response to climate change ▶P.65	• To set up procedures for investigating suppliers' current circumstances and requesting the establishment of said targets, in order to establish Greenhouse gas ("GHG" below) reduction targets to achieve SBT[*1]. • To limit the volume of GHG emissions to below 1.4 million t-CO2e for fiscal 2021. • To reduce GHG emissions of domestic logistics to 2.0 kg/million yen in real manufacturing output. • To expand the range of included factors in logistics GHG emissions.	• Received SBT certification and reviewed details of Scope 1–3 reduction initiatives. • Achieved GHG emissions of 1.4 million t-CO2e (Scope 1 + 2) in fiscal 2021, achieving the goal. • In real production primary units, GHG emissions in domestic logistics for fiscal 2021 were 1.4 kg/million yen, achieving the goal. • Started investigation into a system for identifying GHG emissions in distribution.	○
	Use of sustainable resources ▶P.71	• To improve our ratio of waste output to production by 7% for fiscal 2021 (compared to the fiscal 2016-2018 average). • To improve our ratio of water use to production by 6% for fiscal 2021 (compared to the fiscal 2016-2018 average). • To examine industry trends and regulations for resource recycling. • To establish a feasible plastic recycling system and verify its economic effect.	• For fiscal 2021, the ratio of waste output to production improved by 12% at the same output level, achieving the goal • For fiscal 2021, ratio of water use to production improved by 16% at the same output level, achieving the goal. • Investigated waste material and water-related resource recycling regulations and industry trends. • Built a feasible scheme, verified its economic effectiveness, and organized the issues.	○
	Preventing pollution and managing chemical substances ▶P.72	• To apply green procurement based on Murata standards[*2] to materials, parts and products supplied to Murata. • To manage environmentally hazardous substances based on the Murata standards[*2]. • To reflect internal and external demands regarding chemical substances contained in products in product specifications. • To proactively respond to changes in the external environment. • To create a management system for our global VOC[*3] emissions.	• Identified social trends regarding chemical substances and on revisions to laws, and reflected these in the company standards. • By applying green procurement (materials, parts, and products) based on the company standards and thorough management of environmentally hazardous substances, appropriately reflected internal and external demands regarding chemical substances contained in products in product specifications. • Established medium- to long-term goals on VOC emission reduction on a global basis.	○
	Strengthening Murata's response to climate change Use of sustainable resources Preventing pollution and managing chemical substances	• To experiment with methods of preserving resources and preventing the emission of environmentally harmful substances by paying attention to environmental concerns at the product planning and design stage.	• Continued to perform activities originating in the business divisions to reduce the environmental load, and studied the mechanism which pays attention to environmental concerns from the product planning and design stages.	○
Social	Secure and safe workplace and health management ▶P.73	• Reduction of work accidents — We will not allow serious accidents leading to death or lasting impairment to occur. — To the accident rate per 1,000 workers will be limited to 1.6 or less. • Promotion of health management • To reduce risks in the field of health management as part of Murata's business operations.	• Reduction of work accidents — No serious accidents leading to death or lasting impairment occurred, achieving the goal. — The accident rate per 1,000 workers was 1.70, which did not achieve the goal of 1.6 or less. • Reevaluated the health management plan, established a conference to increase the effectiveness of the health management plan, and implemented measures. • Determined the policies for responding to the novel coronavirus infection (COVID-19) and carried out the necessary measures.	△
	Respect for human rights and diversity ▶P.75	• To firmly establish a "Management System on Human Rights and Labor" and make improvements. • To expand and enhance employee education to raise awareness of human rights, labor, and harassment. • To promote diversity and inclusion.	• Firmly established the "Management System on Human Rights and Labor" and made improvements through the PDCA cycle. However, the system has not been adopted in some areas such as new locations and small-scale worksites. • Implemented human rights education, lectures by outside experts, educational activities on SOGIE, and other initiatives to help employees closely understand Murata qualities as stated in the management philosophy. • In addition to promoting understanding of diversity and inclusion, the following measures were taken: · Increased the ratio of women in technical fields for new graduate in career-track hiring at Murata Manufacturing Co., Ltd. on a non-consolidated basis (fiscal 2021 result: 14.8%) · Set a medium- to long-term target for the ratio of women in managerial positions at Murata Manufacturing Co., Ltd. on a non-consolidated basis (10% by the end of fiscal 2030) · Established a special subsidiary to provide opportunities for persons with disabilities to feel a sense of purpose in working.	△
	Coexistence with local communities ▶P.77	• To realize our founder's philosophy on a global level.	• Enacted the Guidelines of Contribution Activities for Society and Community, and implemented activities in accordance with the guidelines. • Deepened our relationship with local communities through STEAM[*4] and environmental education and promoted support for the development of the next generation.	○
Governance	Appropriate business transactions ▶P.78	• To develop global compliance activities overseas in cooperation with overseas control companies.	• Established practical guidelines for preventing cartels, continuously implemented training for employees, and improved the operation of the cartel control process. • Revised the Basic Policy for Prevention of Bribery, enacted regulations that establish a bribery prevention management system, and improved in-house training.	○
	Business continuity management (BCM)[*5] ▶P.79	• To embed risk management at the global level. • To develop BCPs, prevent risks, and reduce losses when risks occur.	• Implemented risk surveys and evaluation across the entire company twice per year. • Introduced new company-wide risk management audits by the Audit Department. • Conducted BCP drills to confirm the efficacy of loss limitation strategies and prevention strategies for risks, and took all necessary measures.	○
	Information security ▶P.80	• To achieve a situation where the PDCA (Plan-Do-Check-Act) system for information security measures at the global level are functioning effectively and the concept of data security has become a part of daily operations.	• Continuously implemented human, technical, and physical measures to detect risks, respond to persistent risks, and maintain and improve the level of information security. • An incident occurred where a Murata outsourcing partner inappropriately handled personal information and other data. In response to this, we have confirmed how data is being managed when we provide such data to any outsourcing partner in order to prevent a similar incident from occurring. For details of the incident, please see here. https://corporate.murata.com/en-global/newsroom/news/company/general/2021/0805	△

we will create innovations to reduce social and environmental burdens that occur throughout the supply chain surrounding Murata, and build business processes that are in harmony with society.

For the process of identifying material issues, please see here. https://corporate.murata.com/en-global/csr/way_of_thinking/materiality#id3

For more information on each materiality initiative, please see here.   https://corporate.murata.com/en-global/csr/way_of_thinking/activities

Medium- to long-term target (fiscal 2022-)

Key areas	Key issues	Target
Environment	Strengthening Murata's response to climate change ▶P.65	Fiscal 2024 targets: Amount of GHG emissions (Scope 1 + Scope 2): 20% reduction vs. fiscal 2019 Renewable energy implementation rate: 25% Fiscal 2030 targets: Amount of GHG emissions (Scope 1 + Scope 2): 46% reduction vs. fiscal 2019 Amount of GHG (Scope 3): 27.5% reduction vs. fiscal 2019 Renewable energy implementation rate: 50% Fiscal 2050 targets: Renewable energy implementation rate: 100%
	Use of sustainable resources ▶P.71	Fiscal 2024 targets: Rate of use of sustainable resources[6]: 1% improvement from fiscal 2021 results[8]; resource recycling rate[7]: 5% improvement from fiscal 2021 results[8] Fiscal 2030 targets: Rate of use of sustainable resources: 25%; resource recycling rate: 50% Fiscal 2050 targets: Rate of use of sustainable resources: 100%; resource recycling rate: 100%
	Preventing pollution and managing chemical substances ▶P.72	Fiscal 2024 targets: Serious environmental incidents: 0; amount of VOC emissions: Equal to or lower than fiscal 2021 emissions Chemicals used for cleaning must not contain specific VOCs. Fiscal 2030 targets: Serious environmental incidents: 0; amount of VOC emissions: 30% reduction vs. fiscal 2021
Social	Secure and safe workplace and health management ▶P.73	Fiscal 2024 targets: Fatal serious accidents: 0; accident rate per 1,000 workers: Less than 1.35 Fire accidents: 30% reduction 30% reduction compared with average for fiscal 2019–2021; subjective health view: 80% (with 14% reporting extremely good health) Fiscal 2030 targets: Workplaces must allow employees to work in a spirited manner, without any fatal serious accidents or employee injuries/accidents. Fatal serious accidents: 0; accident rate per 1,000 workers: Less than 1.0 Fire accidents: 0; subjective health view: 80% (with 20% reporting extremely good health)
	Respect for human rights and diversity ▶P.75	Fiscal 2024 targets: Percentage of overseas indirect employees[9] with experience working at other sites: 7% Ratio of women in managerial positions: 4% (Murata Manufacturing Co., Ltd. on a non-consolidated basis) A PDCA cycle according to the Management System on Human Rights and Labor must be implemented at each worksite. Fiscal 2030 targets: Percentage of overseas indirect employees with experience working at other sites: 10% Ratio of women in managerial positions: 10% (Murata Manufacturing Co., Ltd. on a non-consolidated basis)
	Coexistence with local communities ▶P.77	Fiscal 2024 targets: Must continue to value communication with local residents and promote contribution activities with the goal of resolving local issues. Fiscal 2030 targets: Must continue to value communication with local residents and promote contribution activities with the goal of resolving local issues.
Governance	Appropriate business transactions ▶P.78	Fiscal 2024 targets: Antimonopoly Act: Laws/ordinances and internal rules/procedures must be deployed and implemented globally. Bribery: In regions with a high corruption index, bribery management and prevention systems compliant with company policy must function and systems for reporting to headquarters must be established. Fiscal 2030 targets: Antimonopoly Act: Laws/ordinances and internal rules/procedures must be deployed and implemented globally. Bribery: All affiliated companies must establish bribery management and prevention systems compliant with company policy, and must maintain zero incidents of bribery/corruption.
	Business continuity management (BCM) ▶P.79	Fiscal 2024 targets: BCP that satisfies requirements must be established at domestic worksites and plants. BCP for handling disasters that might occur in our overseas locations must be formulated at each worksite and plant. Fiscal 2030 targets: A company-wide BCM must be established so that, if a disaster occurs, sites not affected by the disaster can cooperate quickly in order to maintain the business continuity of the entire Murata Group. Autonomous BCM activities must be performed, such as conducting periodic trainings at worksites and plants to verify and improve BCP effectiveness. Measures must be taken for a Nankai Trough earthquake, which is expected to cause major damage.
	Information security ▶P.80	Fiscal 2024 targets: Incidents determined to be potentially serious: 0; employee training ratio[10]: 100% Fiscal 2030 targets: Incidents determined to be potentially serious: 0; employee training ratio: 100%

*1   Science Based Targets: Quantitatively based scientific goals regarding long-term scenarios for greenhouse gas reductions.
*2   Standards that designate substances to be managed as regulated by Murata among environmentally harmful substances included in Murata's products and materials, and establish regulatory requirements and rank for each substance.
*3   Volatile Organic Compound: One of the causes of air pollution, and a standard that sets a regulatory rank.
*4   An approach in which education focusing on creativity is combined with education focusing on science and mathematics.
*5   Business Continuity Management: Management activities are operated on an ongoing basis to formulate, maintain, and renew a Business Continuity Plan (BCP), to take preventative measures, and to conduct education and training for permeating initiatives.
*6   Resources at low risk of depletion, which Murata can use continually into the future by taking steps such as building recycling schemes.
*7   Percentage of Murata's outputs (emissions) that are recycled as circulating resources
*8   Actual figures for fiscal 2021 are currently being compiled.
*9   Applies to overseas local staff, excluding those transferred from Japan to overseas
*10 Ratio = (Number of sites that have conducted training) / (Total number of sites)

Strengthening Murata's response to climate change

Our goal

We aim to reduce the amount of greenhouse gases (GHG) emitted during manufacturing, by operating in accordance with RE100[1] and SBT.

Fiscal 2024 targets	• GHG emissions (vs. fiscal 2019) Scope 1 + Scope 2: 1.28 million t-CO_2e (20% reduction) • Renewable energy implementation rate : 25%
Fiscal 2030 targets	• GHG emissions (vs. fiscal 2019) Scope 1 + Scope 2: 0.87 million t-CO_2e (46% reduction) Scope 3: 3.25 million t-CO_2 (27.5% reduction) • Renewable energy implementation rate: 50%
Fiscal 2050 targets	• Renewable energy implementation rate: 100%

Promoting climate change measures

Murata is working to reduce total GHG emissions by promoting energy conservation and the use of renewable energy, with the Climate Change Committee taking a central role. In addition, the Climate Initiatives Subcommittee, a subordinate organization of the Climate Change Committee, works with the Committee to discuss responses to major climate change initiatives such as RE100 and TCFD[2]. In fiscal 2021, Murata acquired SBT certification for our fiscal 2030 GHG emission reduction targets.

Murata has been highly rated even from outside the company such as being selected for the A list in the CDP climate change questionnaire[3] in 2021.

[1] RE100: an international initiative run by the international NGO called "The Climate Group" in which globally influential companies aim for 100% renewable energy.
[2] TCFD: Task Force on Climate-related Financial Disclosures
[3] A questionnaire conducted by CDP, an international environmental NGO, that surveys and evaluates the climate change measures and strategies, etc. of each company.
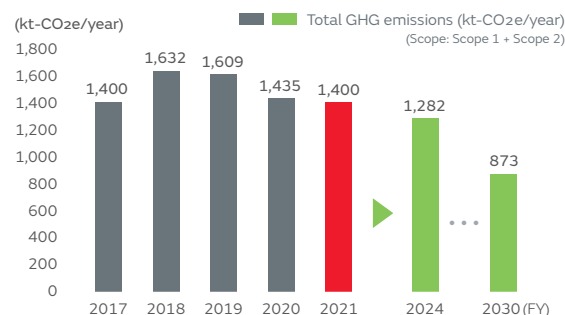
Trends in GHG emissions and reduction efforts

Murata has been involved in implementing energy conservation initiatives and continues to implement anywhere from 450 to 600 energy conservation measures annually (equivalent to 40 to 50 kt–CO_2 reduction). However, recent business expansion has outpaced these efforts, and our GHG emissions have increased in recent years.

In response, Murata has implemented measures to conserve energy and expand renewable energy

sourcing. GHG emissions peaked in fiscal 2018 and decreased to 1.4 million t-CO_2e in fiscal 2021. To achieve our targets for fiscal 2024 and fiscal 2030, we will further accelerate our initiatives going forward.

In order to accumulate future CO_2 reductions, we designed an internal carbon pricing system that encourages decision-making on investment implementation with CO_2 reduction effects by incorporating CO_2 reductions into investment decision indicators, and have been operating the system since fiscal 2021. Moreover, from fiscal 2022 we started a sustainability investment promotion system that reduces the increased costs associated with investments aimed at solving social issues, as well as the burden associated with holding assets, in management accounting.

(kt–CO_2e/year)

Total GHG emissions (kt–CO_2e/year)
(Scope: Scope 1 + Scope 2)

1,400 (2017) 1,632 (2018) 1,609 (2019) 1,435 (2020) 1,400 (2021) 1,282 (2024) 873 (2030)

* CO_2 calculation method
Location-based: Calculated using the average CO_2 emission coefficient for the power network in that region
Market-based: Calculated using the CO_2 emission coefficient for each power purchase agreement
Murata's calculation method changed to the market-based method since fiscal 2019 because market-based calculation is more accurate and has become the mainstream method used in recent years

Obtaining SBT certification for GHG emission reduction targets

Murata has established GHG emission reduction targets by fiscal 2030 based on the 1.5°C scenario for Scope 1 and 2 and the WB2°C scenario for Scope 3. As these targets are based on scientific evidence, we obtained SBT certification by the international initiative "SBTi" in fiscal 2021. This was the first time Murata was able to set a reduction target that included Scope 3.

In Scope 1 and Scope 2, the goal is to reduce emissions through enhanced focus on the energy conservation and renewable energy efforts we have so far promoted. In Scope 3, we will strengthen cooperation among related divisions and promote the reduction of CO_2 throughout the entire supply chain by primarily tackling "CO_2 emissions (Category 1) due to purchased goods and services," which account for a high percentage of emissions, while simultaneously refining our approach to calculating emission volumes.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Introduction of renewable energy

Murata endeavors to expand renewable energy sourcing. As a global company, we have actively promoted the introduction of solar power generation on the roofs and parking lots of our sites, both in Japan and other countries, and we have incorporated the utilization of renewable energy certificates. During fiscal 2021, electricity originating from generation via solar power generation equipment, renewable energy certificate procurement, and other forms of renewable energy reached approximately 600 million kWh (the ratio of renewable energy to the total consumption is about 21%), which is equivalent to a reduction of approximately 330 kt-CO_2. We are continuing to promote the introduction of renewable energy in Japan and overseas to help reduce the environmental load.

As an example of the efforts in fiscal 2021, Kanazu Murata Manufacturing. (Fukui Prefecture) became the first plant in the Murata Group to run on 100%

renewable energy. This was made possible through the introduction of a system which combines large-scale solar panels and Murata storage batteries, along with a menu of renewable energy power from hydroelectric power generation.

This way, Murata will contribute to the realization of a sustainable society by accelerating responses to climate change, combining our products and systems.

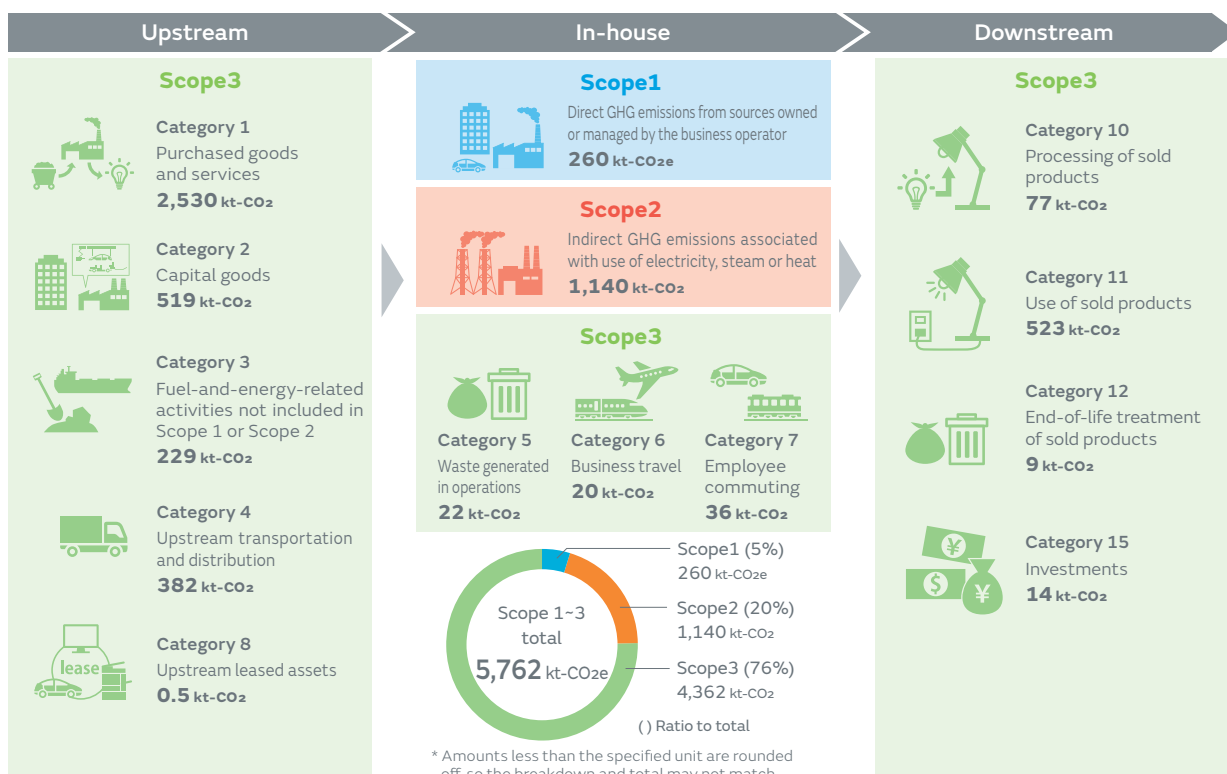Solar power generation system at Kanazu Murata Manufacturing

---

TOPICS   Procurement of renewable energy-derived electricity

In March 2022, Murata concluded an agreement with The Chugoku Electric Power Co., Inc. for the supply of green energy via solar power generation (offsite agreement) and other services with the introduction of new renewable energy facilities. Thanks to this agreement, all Murata production sites in the Chugoku region will be operating on 50% renewable energy by fiscal 2030. In this way, we will continue to promote the use of renewable energy and to strengthen our efforts to combat climate change.In March 2022, Murata concluded an agreement with The Chugoku Electric Power Co., Inc. for the supply

of green energy via solar power generation (offsite agreement) and other services with the introduction of new renewable energy facilities. Thanks to this agreement, all Murata production sites in the Chugoku region will be operating on 50% renewable energy by fiscal 2030. In this way, we will continue to promote the use of renewable energy and to strengthen our efforts to combat climate change.

For more information on the initiative, please see here.
https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2022/0331

Upstream ➤ **In-house** ➤ **Downstream**

Scope3

Category 1
Purchased goods and services
2,530 kt-CO_2

Category 2
Capital goods
519 kt-CO_2

Category 3
Fuel-and-energy-related activities not included in Scope 1 or Scope 2
229 kt-CO_2

Category 4
Upstream transportation and distribution
382 kt-CO_2

Category 8
Upstream leased assets
0.5 kt-CO_2

Scope1
Direct GHG emissions from sources owned or managed by the business operator
260 kt-CO_2e

Scope2
Indirect GHG emissions associated with use of electricity, steam or heat
1,140 kt-CO_2

Scope3

Category 5
Waste generated in operations
22 kt-CO_2

Category 6
Business travel
20 kt-CO_2

Category 7
Employee commuting
36 kt-CO_2

Scope 1~3 total
5,762 kt-CO_2e

Scope1 (5%)
260 kt-CO_2e

Scope2 (20%)
1,140 kt-CO_2

Scope3 (76%)
4,362 kt-CO_2

( ) Ratio to total

* Amounts less than the specified unit are rounded off, so the breakdown and total may not match.

Scope3

Category 10
Processing of sold products
77 kt-CO_2

Category 11
Use of sold products
523 kt-CO_2

Category 12
End-of-life treatment of sold products
9 kt-CO_2

Category 15
Investments
14 kt-CO_2

Created based on "Guide to Calculating Supply Chain Emissions" (Ministry of the Environment) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/supply_chain_201711_all.pdf)

TCFD

Climate change is a global threat to the life of humanity and the health of the planet. It will also affect Murata's business, our customers and our supply chain. The scientific assessment from the United Nations' Intergovernmental Panel on Climate Change (IPCC) released in 2021 called for urgent deep decarbonization action in this decade in order to avoid the worst climate impacts and maintain a liveable planet.

We believe businesses have an important role to play to fight climate change. We recognize that climate change presents both risks of increased cost and disruption for our business as well as new opportunities for Murata to create value while meeting the needs of society. Therefore, in the next decade, we will aim to achieve our objective to "innovate to create a continuous cycle of social and economic value and contribute to the enrichment of society" through innovative technologies and solutions. The following outlines Murata's efforts in the four thematic areas specified in the TCFD recommendations, namely, governance, strategy, risk management, and metrics and targets.

GOVERNANCE

Murata is strengthening its governance in the fight against climate change. The Board has overall accountability for the management of all risks and opportunities, including climate change. In addition, our President and an Executive Vice President, who are Executive Directors of the Board, chair Murata's CSR Management Committee and Climate Change Committee respectively and are ultimately accountable for the oversight of our climate change agenda.

The Climate Change Committee is responsible for governing Murata's overall strategies in response to climate change and monitoring the delivery of climate-related targets across the Murata group of businesses. The Committee, composed of people responsible for the Manufacturing Department, Research and Development Department, Environment Department, and other business units, meets at least twice a year, with additional meetings on selected topics.

The Committee examined initiatives to reduce GHG emissions at manufacturing sites, the development of light, thin, short, small, and high-efficiency products to support the achievement of CO_2 reduction goals by customers, the establishment of GHG reduction targets to acquire SBT certification, the introduction of renewable energy, etc.

Subordinate Organizations of the Climate Change Committee

The Climate Initiatives Subcommittee, a subordinate organization of the Committee, is chaired by the General Manager of Murata Group's environment department and consists of senior managers of relevant departments. This subcommittee deliberates the implementation of climate-related strategies and offering a platform for collaboration and best practice sharing across the Company.

In response to its membership in RE100, a global initiative that aims to achieve a 100% introduction ratio of renewable electricity by 2050, Murata has established a Renewable Energy Subcommittee consisting of the Battery Department, Business Development Department, Environment Department, and other relevant departments, to strengthen company-wide efforts to promote the introduction of renewable energy, while also utilizing Murata's technologies. In addition, an Energy-saving Subcommittee, consisting of members from each manufacturing department and plant, was established as a subordinate organization of the Committee. We will strengthen company-wide efforts to further develop energy-saving activities. First of all, we believe that it is important to visualize energy consumption, and will examine the carbon footprint (CFP) calculation for each product through this Subcommittee. We will then investigate further possibility of CO_2 reduction in our production processes, in order to link this to the measures to be taken.

Responses in terms of business management system

In order to increase the corporate value from a long-term perspective by strengthening governance of various issues related to climate change, starting in fiscal 2021 we introduced an internal carbon pricing system. The system applies financial values to CO_2 reduction volumes and incorporates those values into an investment index. Specifically, we have introduced and are utilizing a shadow pricing system that encourages investments to reduce CO_2 emissions, and the associated business costs and risks, from a long-term perspective.

Moreover, from fiscal 2022 we have introduced and are utilizing a sustainability investment promotion system that reduces the costs related to investments aimed at solving social issues in management accounting.

: Reporting flow related to climate change
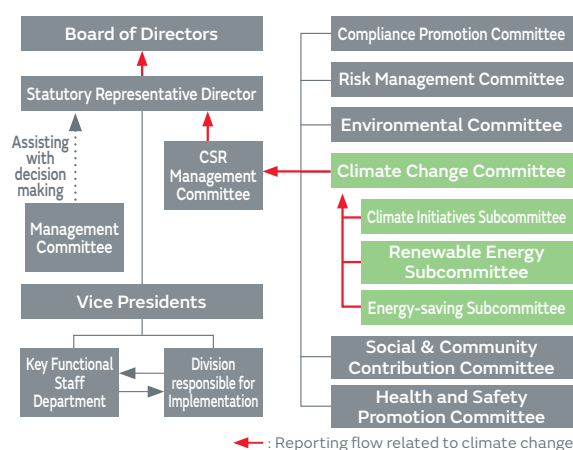
STRATEGY

The risks and opportunities brought by climate change are expected to have a significant impact on the sustainable development of our business in the medium and long term. To anticipate the potential impact and appropriately incorporate the potential effects in our strategic planning processes, we analyzed how Murata's key assets and markets would be affected.

Our approach to climate scenario analysis

Two scenarios, with different extent of physical risks and strength of transition measures – one with high level of warming and another with strong policy interventions to limit temperature rise – were selected to assess the resilience of our assets, business strategies and climate change countermeasures. IPCC Representative Concentration Pathway (RCP)*1 8.5 and 2.6 are used in the analysis.

We focused the assessment on the material

physical impacts of climate change to Murata's business in the year 2030 and 2050, and the risks and opportunities brought forth by evolving policy and regulatory changes as the world aspires to transition to a decarbonized society.

*1 Representative Concentration Pathways: Greenhouse gas concentration trajectory scenarios

List of each RCP scenario

Acronym		Scenario (forecast) type
😊	**RCP 2.6**	Lowest stabilization scenario (radiative forcing of 2.6 W/m² at the end of the century)Lowest emissions scenario developed with the goal of limiting future temperature increase to 2°C or less
😐	**RCP 4.5**	Medium stabilization scenario (radiative forcing of 4.5 W/m² at the end of the century)
😟	**RCP 6.0**	High stabilization scenario (radiative forcing of 6.0 W/m² at the end of the century)
😵	**RCP 8.5**	High reference scenario (radiative forcing of 8.5 W/m² at the end of the century)Scenario corresponding to maximum greenhouse gas emissions in 2100

Based on the Japan Center for Climate Change Actions (JCCCA) IPCC Fifth Assessment Report special page
(https://www.jccca.org/ipcc/ar5/rcp.html)

Our climate scenario analysis prerequisites (key assumption and variables)

Approach
A mix of quantitative and qualitative methods:
- Quantitative modelling to assess potential direct physical climate impact on Murata's assets
- Qualitative approach to transition impact analysis

Scenarios
IPCC RCP 2.6 (2°C scenario) and RCP 8.5 (4°C scenario) were used as base scenarios.
- The physical impact of 10 climate hazards*2 to the selected portfolio of assets
- The transition impacts from policy intervention in Murata's top markets

Scope
- The assessment covers: Direct physical impacts on 20 major manufacturing sites and business facilities
- Transition impacts in Murata's top operating locations and markets (based on net sales)

Timing
Given the nature of global warming effect and typical process of public policy formulation, the following time horizons were adopted:
- Medium-term: 2030
- Long-term: 2050

Climate models and data sets
- Referenced an ensemble of peer-reviewed climate models recognized by IPCC and leading climate bodies, such as CMIP5 (Fifth Coupled Model Intercomparison Project)*3, GFS weather forecast model, GPM flood and precipitation data, etc.
- Use of AI technology to enhance the predictive power and quality of analysis

Physical risks
Examined the impact of 10 climate hazards to the selected portfolio of assets.
This research focused on the direct physical impact on the assets, and we are planning to analyze the impact on the whole value chain, such as suppliers and product transportation

Value-at-risk (VaR)
Reflects the estimated financial loss that can incur to the selected portfolio or asset in a year, with a certain probability, if all the estimated hazard events occur under the considered scenarios and period.
VaR is estimated based on a macro view of the following two aspects.
- Loss from physical damage to an asset: Evaluated with reference to historical events, asset types and cost of construction for the specific locations
- Loss from business interruption: Evaluated based on macro-economic factors such as country GDP, population, land use (e.g. farming, commercial, residential, manufacturing, etc.), urbanization.

Policy
Referenced relevant climate-related policy intentions and targets announced in Murata's top operating locations and markets, including national carbon reduction targets, Nationally Determined Contributions (NDCs) for Paris Agreement, etc.
Policies are assumed to be more stringent in the 2°C scenario and less in the 4°C scenario.

*2 Storm surge, rainfall floods, river floods, landslides, typhoons, drought, precipitation, sea-level rise, snowmelt and extreme heat
*3 Coupled Model Intercomparison Project (CMIP5) is a collaborative framework led by World Climate Research Programme (WCRP) with the aim to foster climate model improvements and support national and international assessments of climate change impact. For more information, please see here. www.wcrp-climate.org/wgcm-cmip/wgcm-cmip5

Understanding the plausible impacts

The business implications of these climate scenarios were assessed without considering any actions that Murata might take to mitigate or adapt to the evolving circumstances. We outlined the material impacts of these scenarios and included a high-level discussion of how climate change is positioned in our business strategy. The figures for "4°C scenario" and "2°C scenario" in the "IMPACTS TO MURATA'S BUSINESS" are currently being analyzed and reviewed based on Murata-specific information.

Physical risks	Assessed Murata's top 20 manufacturing sites and business facilities Assets: Japan, China and South-East Asia

IMPACTS TO MURATA'S BUSINESS

4°C scenario	**2°C scenario**
• Over 80% increase in the risk of one or a group of these assets being affected by extreme climate hazards in 2050 from that in 2020 • Risk exposure by types of acute and chronic physical risks:	• Over 25% increase in the risk of one or a group of these assets being affected by extreme climate hazards in 2050 from that in 2020, a 60% point reduction in the increase of risk exposure than that in the 4°C scenario • Risk exposure by types of acute and chronic physical risks:

High to very high level of risk	extreme typhoons and extreme heat, with risk factors of both being over 70%
Medium level of risk	extreme drought and landslide
Low level of risk	extreme rainfall flood and sea-level rise
Not material	extreme precipitation, storm surge, river flood or snowmelt

Medium-high to high level of risk	extreme typhoons and extreme heat, with risk factors of both being over 50%
Medium level of risk	extreme drought and landslide
Low level of risk	extreme rainfall flood and sea-level rise
Not material	extreme precipitation, storm surge, river flood or snowmelt

4°C scenario (continued):
- Value at Risk (VaR): estimated to be approximately 1 billion yen.
- We aim to conduct analysis based on Murata-specific information in the future, and depending on the results, VaR may increase.
- Impact to our operating costs:
  The ramification of physical impact of climate change will likely cause increased incidences of disruption to our supply and distribution networks and higher prices of raw materials.

2°C scenario (continued):
- Value at Risk (VaR): estimated to be approximately a few hundred million yen.
- We aim to conduct analysis based on Murata-specific information in the future, and depending on the results, VaR may increase.
- Impact to our operating costs:
  Increased in operating costs will likely come from transition measures, such as emissions restrictions, price of carbon relating to our operation, raw materials and products

RESPONSE AND RESILIENCE OF STRATEGY

(Common for Physical and Transition risks)
Company-wide emissions reduction programs, led by the Climate Change Committee, have resulted in continued reduction of our total carbon footprint since fiscal 2018 .
- Energy conservation:
  - While we have been working to save energy by optimizing air-conditioning systems and other actions, energy-saving technologies at the design and development stage will be essential to achieve even greater energy savings. Accordingly, we established the Energy Conservation Promotion Subcommittee in fiscal 2021 and begin to examine the calculation of CFP for each product.
- Renewable energy:
  - Introduced solar power generation facilities and implemented purchase of renewable energy (RE).
  - In fiscal 2021, total amount of renewable energy introduced: approximately 600 million kWh equivalent, ratio of renewable energy introduced: approximately 21%, contribution to CO_2 reduction: approximately 330 kt-CO_2.

Additionally, we are developing new internal systems and targets to guide emissions reduction effort.
- Internal systems:
  - An internal carbon pricing system and a sustainability investment promotion system were introduced to align investment decision-making with the Company's commitment to CO_2 emissions reduction.
- New targets:
  - Joined RE100, committing to sourcing 25% electricity from renewables by fiscal 2024, 50% by fiscal 2030, and 100% by fiscal 2050.
  - Established Scope 1, 2, and 3 reduction targets in conformance with SBT standards. (▶P.65 Strengthening Murata's response to climate change)
- Scope 3 initiatives:
  - Refined CO_2 emissions in each category and coordinated with a wide variety of related departments while advancing the shift to DX to promote climate change countermeasures across the entire Murata supply chain.

Risk Management

CSR Management Committee regularly evaluates the materiality of a wide range of social, environmental, and economic issues through a structured process. In the most recent materiality assessment, climate change was identified as a critical risk and endorsed and monitored by the Board of Directors as an important issue that Murata should prioritize management actions. (▶P.42 Process of identifying key issues (materiality), Promotion framework for key issues (materiality))

On a strategic level, the Climate Change Committee provides oversight on Murata's climate change agenda, including the continuous monitoring of evolving climate-related risks.

On the operational level, ISO14001 is enforced in our production facilities to assess environmental risks and drive continuous improvement.

Our participation in industry associations, such as Japan Climate Leaders' Partnership (JCLP), and global initiatives, such as RE100, can help us gather insights into emerging risks and opportunities related to climate change.

Transition Impact	Assessed major markets (based on net sales) and operating locations Markets: Japan, China, the USA, European Union, South East Asia and Korea.

Transition risks

Emerging Trends	Risks
Countries with net-zero emissions targets account for over 70% of Murata's sales in fiscal 2021. Although the electronic components industry is not a targeted industry for heavy regulatory emissions control across the priority markets that we have assessed, policy interventions (e.g. carbon tax or carbon trading schemes) will likely increase over time	Increase in cost of our production activities
Most countries have set energy efficiency improvement targets	Increase in utility costs of production operation
Some countries intend to set product energy efficiency standards or carbon import tax	Increase in the cost of accessing these markets

Transition opportunities

Emerging Trends	Opportunities
All the assessed economies have set targets for the deployment of renewable energy and electric vehicles (EV) by 2025 or 2030	These commitments would fuel a soaring demand for EVs and renewable energy, and hence for Murata's products.
Global sales of automobiles have declined over the past several years, but net sales for Murata's car electronics increased by 23.1% year-on-year to 336.3 billion yen in fiscal 2021	EVs, with their rising share in the global automobile market, require more electronic components than conventional cars, which will likely bring about higher demand for a number of our product lines
Rising public concern on climate change and policy trends of pursuing a green and smart economic transition globally	Increase the demand for our compact and energy-efficient electronic components over the medium to long term, driving revenue growth and creating opportunities for us to enter new markets
Current Nationally Determined Contributions (NDCs) are considered insufficient to limit the rise in global average temperature to below 2°C	Our innovative technologies and products will play an increasingly important role
Rising investor interest in green investment in the medium to long term	Murata's robust environmental management and carbon-efficient innovations will make it appealing to investors

(Physical risks)
- We aim to conduct analysis based on Murata-specific information in the future, and depending on the results, VaR may increase.
- Business Continuity Plan (BCP) to minimize the impact of hazards on our operations. (▶P.79 Business continuity management (BCM))

(Transitional risks)
- Capital investment projects related to energy saving can result in a less aggressive threshold on the rate of return compared to other investment activities. The net costs of these energy-saving investments are considered to be negligible in the long run as the projects can generate saving in energy costs over time.

- Positioning the mobility market as opportunity for business growth in our long-term vision "Vision 2030," as the EV market, with high demand of electronic components, is expected to grow
- Similarly, harnessing business opportunity related to environmental countermeasures, including working to expand earnings from our battery business, such as from battery storage technology
- Developing fully-solid-state batteries that can be used in safety-conscious applications, such as consumer wearables, household and power-plant sensors
- Continuing to evolve the technology behind our market-leading capacitors, inductors, SAW filters, RF modules, and other products

Metrics and Targets

In order to contribute to global initiatives to limit the average temperature increase to 1.5°C, Murata acquired SBT certification. In addition, as a member of RE100, we have committed to achieving 50% electricity from renewable energy by fiscal 2030 and 100% by fiscal 2050.

In our medium-term business plan through fiscal 2024 (Medium-term Direction 2024), we have set a management target of social value to reduce GHG emissions (Scope 1 + Scope 2) to 1.28 million t-CO_2e, a 20% reduction from fiscal 2019, in addition to aiming to expand our business scale.

GHG Emissions (kt-CO_2e[*4])	Fiscal 2019	Fiscal 2020	Fiscal 2021
Total emissions	**5,979**	**5,237**	**5,762**
Scope1	307	278	260
Scope2[*5]	1,302	1,157	1,140
Scope3	4,371	3,801	4,362[*6]

*Figures are rounded to the nearest unit, so the breakdown and total may not match

*4 The approach we use in measuring our emissions (Scopes 1, 2 & 3) are in line with the emissions accounting methodology defined in the GHG Protocol. Our annual emissions data have been reviewed and certified by third-party assurer to ensure consistency and reliability of the emissions data.
*5 Scope 2 emissions calculation method:
Location-based: Calculated using the average CO_2 emission coefficient for the power network in that region.
Market-based: Calculated using the CO_2 emission coefficient for each power purchase agreement.
Murata's calculation method changed to the market-based method since fiscal 2019.
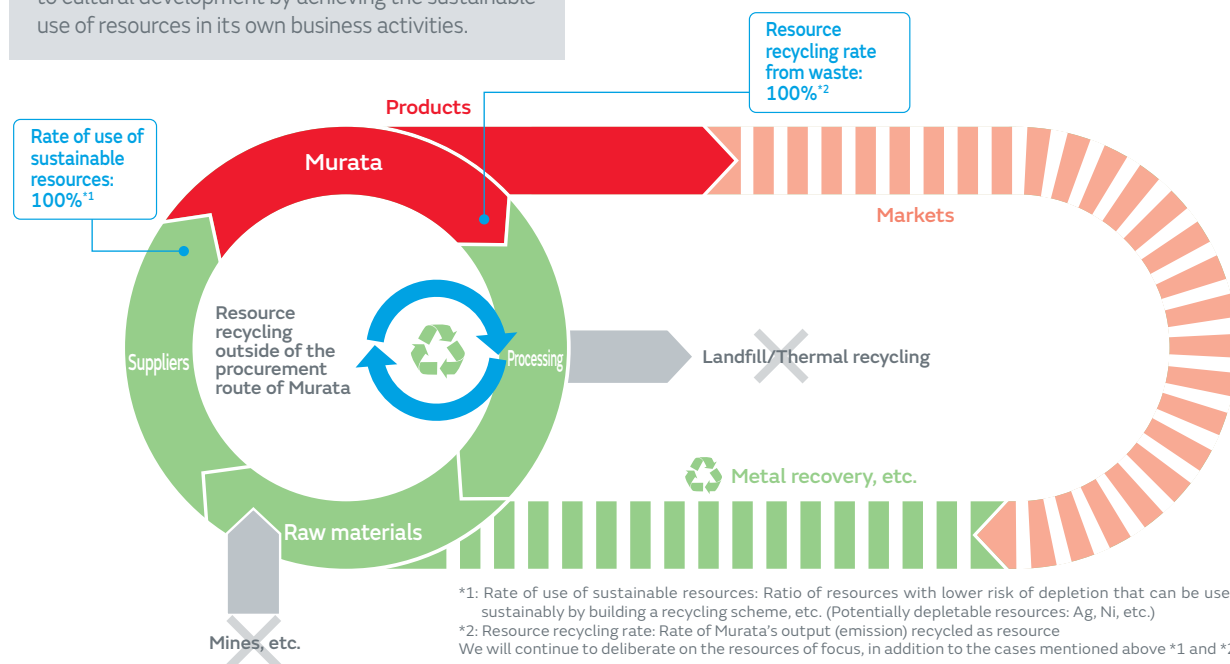*6 From fiscal 2021, categories 8, 10, 11, and 15 have been newly added to the range of Scope 3 aggregation.

Use of sustainable resources

Background of setting the material issues

As the global population increases, pressing social issues such as resource depletion and increased waste have become more severe. Murata has set "use of sustainable resource" as a material issue in order to address these social issues and to contribute to cultural development by achieving the sustainable use of resources in its own business activities.

Our goal

Realize sustainable resource usage within Murata's business activities, and contribute to the development of culture through co-creation with partners.

Rate of use of sustainable resources: 100%[*1]

Resource recycling rate from waste: 100%[*2]

Products

Murata

Markets

Resource recycling outside of the procurement route of Murata

Suppliers

Processing

Landfill/Thermal recycling

Metal recovery, etc.

Raw materials

Mines, etc.

*1: Rate of use of sustainable resources: Ratio of resources with lower risk of depletion that can be used sustainably by building a recycling scheme, etc. (Potentially depletable resources: Ag, Ni, etc.)
*2: Resource recycling rate: Rate of Murata's output (emission) recycled as resource
We will continue to deliberate on the resources of focus, in addition to the cases mentioned above *1 and *2

In promoting the "use of sustainable resources," Murata has set the following targets for fiscal 2050: "rate of use of sustainable resources" for procured materials and "resource recycling rate" for waste, and is promoting efforts to achieve them.

Fiscal 2024 goals	• Rate of use of sustainable resources: 1% improvement from fiscal 2021 results[*3] • Resource recycling rate: 5% improvement from fiscal 2021 results[*3]
Fiscal 2030 goals	• Rate of use of sustainable resources: 25% • Resource recycling rate: 50%
Fiscal 2050 goals	• Rate of use of sustainable resources: 100% • Resource recycling rate: 100%

*3: Actual figures for fiscal 2021 are currently being compiled

Rate of use of sustainable resources

We will conduct our business activities so that we can use resources sustainably in the future by using resources with lower risk of depletion, avoiding the use of resources that our customers prohibit or discourage the use of, and using recycled resources.

Resource recycling rate

Murata has been committed to zero emissions, emphasizing the elimination of landfill and working on measures such as material recycling and thermal recycling (heat recovery). Going forward, we will further address issues such as resource depletion and waste growth.

TOPICS — Efforts to utilize recyclable resources

Murata has become the first company in the electronic component manufacturing industry to successfully create a closed-loop recycling system for polyethylene terephthalate (PET) film used in the manufacturing process of multilayer ceramic capacitors (MLCC).[*4]

In the new recycling system, closed-loop recycling has been made possible by working with a partner company to take the PET film used in the dielectric sheet-forming process and convert it back into PET film to be used again for the same purpose. The recycling system has been introduced in stages, starting from May 2022.

Currently, the amount of recycled material in the PET film we use is around 25%. However, we will work on further improvement to create a PET film recycling scheme so that in the future we will be using 100% recycled PET film, which will contribute to the reduction of waste and CO_2 emissions.

*4: Until now, used PET film for MLCCs was thermal-recycled or downcycled (recycling with degradation). However, this is the first time that the closed-loop recycling of PET film for sheet forming in MLCCs, converting it back into PET film to be used again for the same purpose, has been attempted in the electronic component manufacturing industry. (As of May 2022, according to the company's study)

For more information on our efforts, please see here.
https://corporate.murata.com/en-global/newsroom/news/company/csrtopic/2022/0616

For more information on our activities regarding use of sustainable resources (including water resource management), please see here.
https://corporate.murata.com/en-global/csr/environment_murata/resource

Preventing pollution and managing chemical substances

Background of setting the material issues

Recently, stricter environmental regulations have been enacted in many countries. Murata has set this key issue in order to pursue sustainable business processes, such as reducing environmental burden as much as possible by promoting initiatives to proactively prepare for these regulatory changes.

Our goal

Murata aims to reduce environmental burden and realize manufacturing that harmonizes with society by pursuing sustainable business processes that are not restricted to conventional frameworks.

Pollution prevention

We are aware of the significant environmental risk accompanying the use of chemical substances, and we are taking steps to avoid pollution. In particular, regarding equipment related to the storage and transport of liquid chemical substances within worksites, we are implementing measures by setting four voluntary standards, to prevent accidents. In addition, risk assessments of accidents are conducted and risk reduction measures are implemented.

Voluntary rules for prevention (equipment-related)
- Prohibition of underground storage tanks
- Permeation barrier coatings
- Prohibition of underground piping
- Installation of emergency containment structures

There were no major environmental accidents or violation of environmental laws and regulations in fiscal 2021. In order to control emissions of volatile organic compounds (VOC), which are a contributor to atmospheric pollution, we voluntarily installed regenerative thermal oxidizers (RTO), a type of exhaust gas treatment equipment, at worksites whose emission level is high, and eliminated 96% of the amount used in fiscal 2021.

We will promote initiatives to reduce VOC emissions, including introduction of an IoT system that prevents environmental incidents by human error, reconsideration and update of materials and manufacturing methods.

Trends in volume of VOC use and rate of discharge into the atmosphere (Japan)
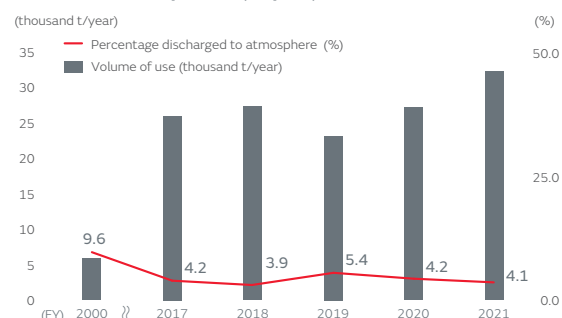
Chemical substance management

In addition to complying with laws and regulations such as the RoHS Directive and the REACH regulations[1], we have established voluntary standards that incorporate consideration of global trends related to environmentally hazardous substances and requests from our customers. By means of the management system shown in the diagram below, we are actively working to reduce or eliminate the use of environmentally hazardous substances in our products.

[1] A regulation of the European Union regarding registration, evaluation, approval and restriction of chemicals

Management of environmentally hazardous substances at Murata

We are also responding preemptively to the revision of laws relating to environmentally hazardous substances.

The current RoHS Directive restricts the content of ten types of chemical substances in electrical and electronic devices marketed in the EU. Of these, restrictions on four types of designated phthalic esters went into effect in July 2019. Acting in advance of the revision, Murata prohibited the use of designated phthalic esters in newly developed products from July 2017. Also, we are managing the packaging and tools that come into contact with products in the course of processing and logistics, in order to prevent contamination from contact.

In the future, we will also promote initiatives to reduce the risk of exposure of workers to chemical substances handled in manufacturing processes. As a priority initiative, we will promote an initiative regarding chemical substances used in cleaning applications to prohibit the inclusion of nine specified substances[2] by March 2025.

[2] The list of nine specified substances is as follows.

Name of chemical substance	CAS No.
Benzene	71-43-2
1-Bromopropane (nPB)	106-94-5
Dichloromethane	75-09-2
Methanol	67-56-1
NormalHexane (n-Hexane)	110-54-3
1-Methyl-2-pyrrolidone (NMP)	872-50-4
Tetrachloroethylene	127-18-4
Toluene	108-88-3
Trichloroethylene	79-01-6

For more information on our activities in preventing pollution and managing chemical substances, please see here.
https://corporate.murata.com/en-global/csr/environment_murata/pollution_chemical

Secure and safe workplace and health management

Background of setting the material issues

A foundation of CS and ES, which are Murata's important values, is the physical and mental health of employees. Based on this recognition, Murata has set this key issue in order to implement health management that ensures safety and security.

Our goal

We aim to provide employees with safe workplaces where each and every employee can feel healthy and work with peace in mind.

Health and safety promotion system and medium- to long-term targets

At Murata, the executive in charge of health and safety activities is in overall charge, and the Sustainability Department, the responsible department, supports and promotes these activities across the Group. The Health and Safety Promotion Committee, a subordinate body of the CSR Management Committee, deliberates and shares information on the following three matters related to health management and health and safety.

(1) Discussing policies and goals
(2) Determining key issues, targets and measures
(3) Reporting results

In order to achieve our goal, we have set targets for fiscal 2024 and fiscal 2030, and are promoting health and safety activities.

Fiscal 2024 targets	• Fatal serious accidents:0 • Industrial accident rate per 1,000 workers*: Less than 1.35 • Fire accidents: 30% reduction compared with average for fiscal 2019-2021 • Subjective health view: 80%(with 14% reporting extremely good health)
Fiscal 2030 targets	No Fatal serious accidents, no employee injuries or accidents, and a vibrant workplace. • Fatal serious accidents: 0 • Industrial accident rate per 1,000 workers*: Less than 1.0 • Fire accidents: 0 • Subjective health view:80% (with 20% reporting extremely good health)

* Murata manages the number of industrial accidents resulting in lost workdays and those not resulting in lost workdays together.

Status of efforts made in fiscal 2021

As a result of promoting health and safety activities aimed at creating a workplace environment where employees can work with peace of mind, Murata's industrial accident frequency rate has remained relatively low among the manufacturing industry and electrical industry, according to statistical figures published by the Ministry of Health, Labour and Welfare. Meanwhile, the number of industrial accidents resulting in lost workdays has recently leveled off, although it has decreased compared to a sharp increase in fiscal 2017. To prevent the occurrence of fire incidents, we promote disaster prevention management initiatives such as risk assessments and emergency drills.

Going forward, in order to make the workplace environment more secure, in Japan, we aim to provide thorough safety education to the increased number of employees due to business expansion and to eliminate the shortage of management and supervisory personnel. Overseas, the number of industrial accidents has been steadily decreasing due to the penetration of safety activities. We will strengthen our efforts such as carrying out safety activities that go further into the workplace and developing human resources needed to promote such activities.

Trends in industrial accident frequency rates and the number of industrial accidents resulting in lost workdays (Japan)
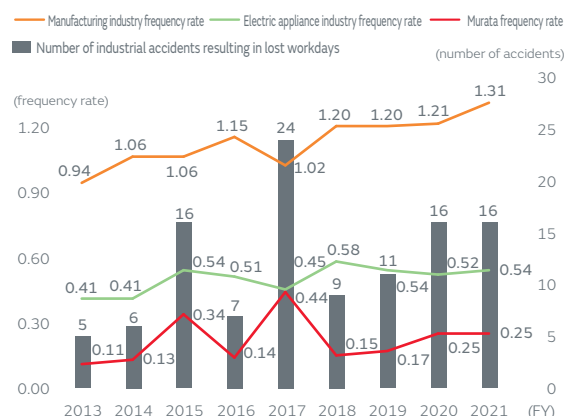
Initiatives to achieve medium- to long-term targets

In order to achieve the newly set targets for fiscal 2024 and fiscal 2030, we will promote the following activities.

Challenges

(1) Creating a secure and safe work environment for a variety of people

(2) Fostering an organizational culture that encourages safety and security

(3) Promoting an increase in the number of people who can practice safety behaviors in a natural way

Problem-solving activities

(1) Realizing a work environment where safety is respected as the top priority through a two-track approach comprising the obligations of considering safety assumed by the management level members and the self health care obligations assumed by individual

(2) Promoting increased hazard sensitivity by increasing the safety literacy of each employee

For more information on secure and safe workplace activities, please see here.
https://corporate.murata.com/en-global/csr/people/safe_secure

Health management KPI "subjective view of health"

At Murata, "health" is defined as a state of harmony among the body, mind, and relationships with people and society. We believe that it is important for employees to feel healthy not only medically but also personally. Based on this idea, we are working on health management with a vision of "each employee being able to work while feeling healthy." As a KPI, we have set "subjective view of health," which is a subjective evaluation of one's own health condition, as an indicator, rather than numerical results of health checkups and other tests. This indicator is based on the stress check question, "Regardless of whether or not you have a disease, do you consider yourself healthy?," and trends in the responses are periodically checked. In fiscal 2021, subjective view of health performance was 78%. We will continue to work toward achieving and maintaining the medium-term target of 80%.

Health Management Plan

Murata formulated the Murata Health Management Plan in fiscal 2019 to promote employees' health initiatives. Furthermore, in light of the environmental changes caused by the spread of COVID-19 infections, we evolved the plan into four plans based on the concept of "practical and healthy management" in fiscal 2020.

Details of Murata Health Management Plan

Plan 1	Creating a system that promotes health management Various functions work together on the basis of the actual state of physical and mental health of all employees to prevent illness
Plan 2	Implementation of health policies conforming to data and the actual conditions of employees Improvement of sleep, smoking, exercise, and eating
Plan 3	Enhancement of stress management Fortification of self-care and employee mental health support from the line manager, improvement of stress check implementation
Plan 4	Improving health literacy

The objective of the "diversity" specified in the group-wide targets is that the employees should "trust, cooperate, and harmonize with each other." However, for employees new to the organization, such as new hires and mid-career hires, it is difficult to realize this goal immediately. In addition, the state in which "employees can feel rewarded and growth," which is aimed for in the "ES" of the same target, presupposes that all employees are in good health. Murata intends to contribute to building these foundations through efforts such as sleep improvement.

For more information on our health management activities, please see here.
https://corporate.murata.com/en-global/csr/people/safe_secure

Health management measures that support the realization of "diversity"

One of the Health Management Plans, "enhancement of stress management," is a measure taken from a viewpoint of how employees can overcome challenges attributed to COVID-19. We identified "new employees," "mid-career employees," and "transferees between Japan and overseas" as the groups most affected by this change, and conducted self-care and stress management training for the targeted employees. Through this training, we believe that if participants can learn how to cope with stress caused by their new environment, they will be able to stabilize their minds and bodies and step forward to build new trusting relationships and demonstrate their abilities. Through these efforts, we will continue to support a variety of employees to achieve harmony.

Initiatives for shift workers based on actual site conditions (improvement of sleep)

In the course of promoting the Health Management Plans, it became clear that a certain number of shift workers who support Murata's manufacturing sites were asking for advice on sleep. In order to address these on-site problems by improving sleep to better fit shift workers, we invited Mr. Kazuhiro Yagita, a professor at the Kyoto Prefectural University of Medicine and an expert on "circadian rhythms and internal body clocks," as an advisor on measures to improve the sleep quality, since September 2021. We are working on sleep improvement efforts utilizing the body clock theory. These efforts are being carried out through on-site trials and effectiveness measurements, and are being improved upon. We believe that the implementation of such effective measures will lead to the establishment of a foundation for ES.

Expansion of activities to the entire Murata Group

In promoting these health management measures, we hold quarterly "Health Management Plan Dialog Meetings" and implement the PDCA cycle. The Dialog Meetings are attended by industrial physicians, health nurses, and nurses from 27 business sites, health promotion administrative staff, safety functions staff, human resource staff, and members of the Health Insurance Society. In each meeting, participants discuss actual activities carried out at each site. They reflect on their own activities in the Dialog Meetings and make improvements based on learning from other sites. Rather than directives from the head office or management, each business site examines measures based on the actual on-site situation, makes improvements through dialogue, and takes the initiative. These activities are also linked to the practice of "autonomous and decentralized organizational management" set forth in Vision 2030.

Respect for human rights and diversity

Background of setting the material issues

As stated in the Murata Philosophy, "We contribute to the advancement of society by creating innovative products and solutions," Murata has grown together with our customers through innovation. Innovation is the result of diverse individuals helping each other to improve. It is essential for the development of culture to respect human rights of all stakeholders involved, including those in the supply chain. Based on that belief, Murata has set this key issue.

Our goal

We aim for sustainable growth leveraging diverse human resources globally, understanding and respecting the concept of human rights.

Respect human rights

Human Rights and Labor Policies

To be an innovator by leveraging diverse human resources, it is essential to respect the human rights of individuals. Murata has set its "Human Rights and Labor Policies" based on that belief.

The policies reflect human rights awareness embedded in the Murata Philosophy and the company's history, while specifying our commitment to respect, protect, and not violate the basic human rights of each employee. With a Member of the Board of Directors and Executive Vice President serving as a person in charge, we held discussions with management on how recent business expansion has been affecting human resources, organizations and local communities, conducted analysis on the expectations from stakeholders, and reflected the results in the policies.

Human rights due diligence

Based on the risk assessment of human rights due diligence, human rights are reported and discussed at the Board of Directors and Management Committee meetings. At this point in time, we have not identified any serious problems that require immediate action. However, we anticipate that various new issues will arise as global conditions and business developments evolve, and we will continue to work to improve our Management System on Human Rights and Labor through its firm establishment and operation. Regarding human rights risks in the supply chain, we are also strengthening the process to identify and remedy forced labor (including child labor, foreign workers, working hour issues, etc.), gender disparity, various forms of harassment, impacts on local communities , and the impact of products on society at our business partners and suppliers.

Human rights education

We believe it is important to foster awareness among each and every employee, and we are strengthening our education system. For example, in Japan, we provided an education program for new employees on the theme of "business and human rights," and for other employees, training on how Murata's global business relates to human rights through discussions and learning by mapping business activities and human rights. Through these education programs, every employee is encouraged to take responsibility for his or her own work.

We are also strengthening our networks in Japan and overseas by holding consultation and study sessions for human rights personnel at each of our sites.

TOPICS   Initiatives embodying diversity

Since fiscal 2021, we have launched two projects, the Murata Philosophy Penetration Project and the IT-based Business Reform Project, both led by young global members. The process of discussing initiatives to solve these common global issues among members with different cultural backgrounds provided an opportunity to create new solutions. In addition, by working together while taking advantage of diverse individual strengths, we were able to broaden the perspectives of the project promotion members.

Feedback from project promotion members

"How can we make the teaching of the Murata Philosophy more appealing?"

It was challenging to get new Murata members interested in the Murata Philosophy. At that time, I heard from the IT-based Business Reform Project team that they were considering education programs using a virtual space, and I thought, "That's it!" This is where the collaboration between the two teams began. It was never easy for members from different countries to create a single thing. However, by sharing the same beliefs and

Respect for diversity

Culture of leveraging diverse individual strengths while collaboratively working together

Murata believes that a culture focused on trusting relationships and cooperation that transcends national and organizational boundaries is necessary for diverse individuals to help each other to improve and create innovation. We will promote initiatives to foster such a culture.

In fiscal 2021, young members of the global team took the lead in creating systems to allow employees to experience the connection as employees of Murata, including virtual spaces for the Murata Philosophy study room and cross-border dialogues among employees. Although the change in communication style to online initially caused some confusion among employees, we believe that discussions throughout the project will help form a sense of solidarity that Murata is one team.

Discussion in a virtual space

Promotion of diverse human resources and improvement of systems

As one of the priority themes for promoting diversity, we are focusing on the promotion of women in the workplace. We are promoting initiatives related to the promotion of women's advancement in a manner appropriate to the country and situation in which each company in the Group is located. Murata Manufacturing Co., Ltd. has set the following two targets on a non-consolidated basis.

(1) Proportion of women in technical fields in new graduate for career-track hiring: 10% or more
(2) Proportion of women in managerial positions: 10% by the end of fiscal 2030

Regarding (1), we have achieved the target since fiscal 2017 through ongoing efforts such as seminars for women in technical fields. Regarding (2), in order to achieve the target, we have set a stepwise target for the proportion of women in managerial positions at 4% in fiscal 2024 and 7% in fiscal 2027. We are working to raise awareness and engage in dialogue within the company. As of the end of April 2022, the proportion of women in managerial positions has increased to 3.0%, and we are making steady progress toward achieving this target.

We also consider it important to provide support for balancing work with childcare, nursing care, and medical treatment. As for nursing care, the requirement of years of service to obtain reduced work week and reduced working hours has been abolished, and the period during which it can be obtained has been expanded to the expiration of the grounds for its use. As for childcare, as a result of continuous support for taking childcare leave, the percentage of male employees taking childcare leave increased to 18.2% in fiscal 2021. In addition, the ratio of female taking childcare leave continues to be 100%.

Furthermore, we are promoting initiatives for diverse values such as SOGI*. From fiscal 2022, we are revising the system to apply the same benefit system for same-sex marriages, common-law marriage, and foster parents as for legal marriages and biological children, in principle, to create an environment that facilitates work for those who do not or cannot choose legal marriages.

Through these various efforts, we will continue to strive to create a workplace where all employees can play an active role regardless of gender or environment.

* SOGI: Sexual Orientation & Gender Identity

discussing the same goals, we were able to create the Murata Philosophy study room on a virtual space. In addition to a variety of materials and videos, the room also includes a dialogue zone where participants can discuss and deepen their understanding with each other.

We also thought it necessary to deepen our own understanding of the Murata Philosophy, and so we held discussions with top management. In doing so, we were able to hear about experiences that allowed us to realize and embody the Murata Philosophy. Particularly impressive was the phrase, "a company philosophy is not something you consciously act on." I was very impressed by the fact that it means that if the company philosophy is correctly understood and is instilled in oneself, one can naturally put it into practice without being conscious of it.

Through these efforts, we feel that we have been able to achieve a new style of instilling the Murata Philosophy.
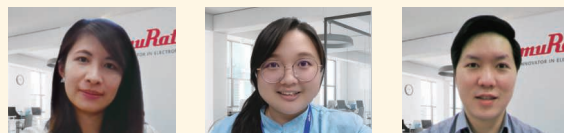
From left, Reirei Jan (Taiwan), Sharon Lim (Malaysia), Nattaphong Namphon (Thailand)

Coexistence with local communities

Under our founder's philosophy, Murata hopes to continue to be a company whose presence in local communities is a source of pride and joy to those communities as well as a company that our employees are proud and happy to work for. To this end, Murata has contributed to society as a member of local communities.

In order to meet increased expectations from the local communities where Murata operates, we believe it is necessary to reinforce the initiatives to achieve the philosophy. For this reason, Murata has set this key issue.

Our goal

We aim to keep in harmony with local communities regardless of changes in the business environment and to be a company that makes communities proud.

Promoting activities to contribute to solving issues in communities

In pursuit of where Murata wants to be under our Vision 2030, we value communication with local communities and promote activities to contribute to solving issues in communities, in accordance with our founder's philosophy. Specifically, we have established five priority areas: "support for the development of the next generation," "local community support," "environmental protection," "cultural support," and "academic support." In accordance with the Guidelines for Activities to Contribute to Society and Local Communities, each group company actively identifies the areas to focus on based on the status of the local areas, and plans and implements activities to contribute to society and local communities.

When hiring employees, we strive to consider the impact of our business sites on local communities both domestically and overseas while actively hiring local people to vitalize local communities and create employment.

TOPICS

Murata has concluded a comprehensive cooperation agreement with Nagaokakyo City in Kyoto Prefecture, where its head office is located, for the purpose of cooperating in sustainable regional development.

We have been promoting cooperation in various aspects, such as zero-carbon electricity for plaza lighting in the JR Nagaokakyo Station plaza redevelopment and a verification test using "AIRSual" to visualize the concentration of CO_2 at an elementary school in the city.

Murata's contributions to society and local communities in figures

Number of Murata Group employees participating in social contribution activities (Fiscal 2021)

14,288 (approximately 18% of total group employees)

Murata Group's total expenditure on social/local contribution activities (Fiscal 2021)

Approximately 588 million yen

Practical example

Murata Electronics Europe B.V. (Germany)
Collection and donation from employees of items needed at school for new students with financial difficulties

Korea Murata Electronics Company, Limited (Korea)
Providing visiting classes (principles of solar energy) for children with financial difficulties

Kanazawa Murata Manufacturing Co., Ltd. (Japan)
In cooperation with Kanazawa College of Art, winter illuminations designed by students were installed and exhibited at the Company's business sites

Murata Manufacturing Co., Ltd. (Japan)
Promoting STEAM education by utilizing the "Mulabo!" interactive science facility for children in the Minato MIRAI Innovation Center

Murata Electronics Trading Mexico, S.A. de C.V. (Mexico)
Tree planting activities in the Centinela Forest

Shenzhen Murata Technology Co., Ltd. (China)
Holding of the "Murata Cup" table tennis tournament

Murata Electronics Philippines Inc. (Philippines)
Donation of daily necessities, food, and other relief supplies to underprivileged households

Taiwan Murata Electronics Co., Ltd. (Taiwan)
Christmas gifts and party for economically challenged children

For the Basic Policies for Activities to Contribute to Society and Local Communities and a list of the Murata Group's major social contribution activities, please see here.
https://corporate.murata.com/en-global/csr/people/society

Appropriate business transactions

Background of setting the material issues

Murata's CSR Charter and Corporate Ethics Policy and Code of Conduct define how we engage in appropriate transactions with suppliers, how we comply with antitrust laws, and how we prevent bribery and other corruptions. We aim to engage in fair business transactions with these practices serving as a foundation for our daily business activities and duties. At Murata, we recognize the importance of conducting fair business transactions in order to realize healthy sustainable growth and to earn social trust while expanding business globally. Therefore, Murata has set this key issue.

Our goal

We aim to maintain zero occurrence of major violation of appropriate business transactions and continue to be a company trusted by society.

Compliance programs for appropriate business transactions

Murata strives to prevent bribery and violation of antitrust laws as the key compliance risk in expanding business globally by introducing compliance programs for appropriate business transactions. In 2014, Murata released the Basic Policy for Prevention of Cartels and Bribery[1] (available in Japanese, English and Chinese) as an addendum to the Corporate Ethics Policy and Code of Conduct in order to disseminate Murata's attitude towards cartels and bribery throughout the Group. Furthermore, in order to effectively mitigate risk of violation of antitrust laws and bribery, Murata has set rules based on the result of risk surveys conducted globally and disseminated these rules within the company through messages from the President and training.

Prevent antitrust violations

To prevent cartels, Murata has set global rules stating that (1) contact with competitors must be avoided whenever possible and (2) approval must be obtained in advance in situations requiring contact with competitors. A control process requiring that officers and employees apply for approval and report their actions in such situations has been established for use throughout the entire Group. In addition to creating guidelines that include these internal rules and procedures, officers and employees are made aware of this information through either in-person or online training. We also regularly check the operational status of the control process.

We believe it is important to thoroughly disseminate the rules and processes within the Murata Group in order to prevent violation of antitrust laws. Murata will continue to provide education and training to officers and employees in Japan and other countries so they have practical knowledge of antitrust laws, their related company rules and processes. We will also ensure adherence to these rules through conducting monitoring.

Prevent Subcontract Act violations

In order to ensure compliance with the Act against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors (hereinafter "the Subcontract Act"), Murata implements continuous education for all employees engaged in procurement activities through e-learning, etc. As part of an internal system to prevent violation of the Subcontract Act, audits and diagnostic checks are periodically performed on departments that demand purchases and make orders. Murata has also established its procurement system that manages and checks a series of procurement tasks to prevent violation of the Subcontract Act.

Prevent bribery

Murata has set rules on actions such as exchanging gifts or business entertaining based on the policies established in the Basic Policy for Prevention of Bribery, and activities of officers or employees are managed to prevent unlawful benefit for the purpose of dishonest profit from being provided or received, and to prevent facilitation payments[2] from being made.

Each year, Murata obtains the individual commitment of officers and employees to comply with the basic policy. In addition, we conduct online training on a regular basis and provide education regarding foreign and domestic laws, prohibited matters, and the risks of illegal conduct, etc., so that we can respond to changes in compliance requirements.

As the business environment surrounding Murata becomes more globalized each year and the business expands into new domains, the importance of maintaining transparency is ever increasing. We will further develop the system to prevent bribery, and in order to ensure its effectiveness, we will continue to maintain and operate the compliance program.

[1] For more information, please see here..
https://corporate.murata.com/-/media/corporate/about/csr/management/compliance/compliance_pdf0002.ashx?la=en&cvid=20220629043257000000
[2] Small monetary payments that are not required by laws and regulations to public officials and others requested to facilitate or expedite procedures for routine administrative services such as customs clearance and visas

For more information on our compliance program for fair business transactions, prevention of insider trading, prevention of conflicts of interest, and export control compliance, please see here.
https://corporate.murata.com/en-global/csr/governance/compliance

Business continuity management (BCM)

Basic BCM policy

1. Ensure the safety of employees and others, and then work toward preventing secondary disasters.
2. Do everything possible to resume production and keep supplying products to markets.
3. Support regional recovery as member of the local community.
4. Thoroughly implement required advance measures after taking costs and benefits into consideration, in order to minimize asset loss during a disaster and to resume production more quickly.
5. Revise the Business Continuity Plan (BCP) regularly and as the business environment changes, in order to continuously improve business continuity organizations.
6. Establish business continuity organizations with all employees working together under the proactive leadership of management.

Business continuity plan (BCP)

A major natural disaster has the potential to bring business to a stop for extended periods. Consequently, Murata has devised a business continuity plan (BCP) to ensure that we can fulfill our duty to provide customers with a stable supply of products. We are conducting initiatives to minimize damage and continue business, such as ensuring earthquake resistance and safety for buildings and production facilities, constructing backup frameworks for our communications and information systems, and maintaining supply from inventory.

Within material procurement, the production locations of material suppliers are stored in a database so that procurement activities are not delayed when a disaster or other risk occurs. We are also formulating an initial response system and an initial response flow for expected risks to implement a rapid initial response. Furthermore, with regard to important materials we are promoting measures such as implementing a multi-vendor system, confirming the BCP implementation status of our vendors, and ensuring sufficient inventory to cover the expected recovery period, if risks materialize, as measures to ensure stable procurement.

Status of efforts made in fiscal 2021

We conduct periodic business continuity drills to confirm effectiveness and continually improve initial response measures, improve crisis response capabilities, and find points to be improved regarding BCP. During fiscal 2021, we developed and strengthened BCPs that cover the required items (possible scope of damage, action plans required for business continuity, and advance measures) at domestic business sites and plants, and worked on establishing a BCP to prevent risks that would impair business continuity, and to minimize loss if risks should materialize.

BCP training

Future initiatives

We must promote the establishment of BCM organizations to handle risks that could occur at the global level, prevent risks that could impair Murata's business continuity, and minimize loss if risks should materialize.

Toward that end, Murata implement measures such as verifying the effectiveness of our BCP through regular drills and other activities at domestic and overseas business sites and plants and, when required, revise the BCP, in order to ensure that autonomous BCM activities are put into practice, and to build BCM organizations in order to continuously supply products markets throughout the entire Group.

An earthquake in the Nankai Trough would be especially massive and damaging, and we realize that we must prepare for this. We continue to promote measures in order to fulfill our obligations as a components manufacturer to continue to supply products.

Information security
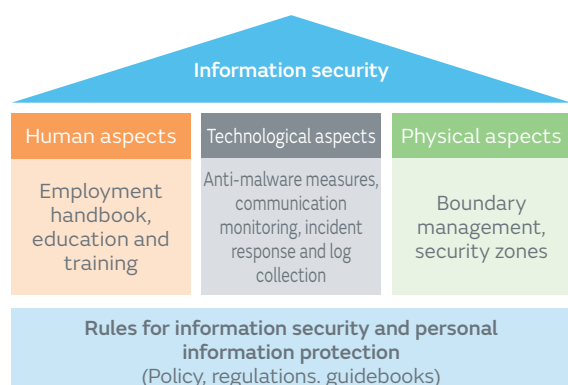
Background of setting the material issues

The risks of information leaks caused by internal fraud targeting information retained by companies and by disruptions to business activities caused by cyber attacks have been increasing in recent years.

In order to provide reassurance to all stakeholders, we believe that it is important to protect the various types of information we retain, including technical, management, and personal, which is the source of Murata's competitiveness. This includes both information handled by the company and information provided by clients, customers, and partners. For this reason, Murata has set this key issue.

Our goal

We aim to minimize risks by routinely implementing the information security risk management PDCA cycle, in order to prevent potentially serious incidents from happening.

In fiscal 2007, Murata established an information security subcommittee as a lower branch of the Risk Management Committee, which incorporates recent risk trends and related guidelines from Japan and overseas based on international standards (ISO27001) to implement information security management. Specifically, information security basic policy, information security management regulations, and privacy policy are enacted to develop and operate information security measures in terms of human, technical, and physical aspects. The subcommittee periodically meets to examine new and persistent risks, and to propose and implement measures. The subcommittee also strives to increase the adoption and improvement of such measures through internal and external audits and diagnostics.

Information security

Human aspects	Technological aspects	Physical aspects
Employment handbook, education and training	Anti-malware measures, communication monitoring, incident response and log collection	Boundary management, security zones

Rules for information security and personal information protection
(Policy, regulations. guidebooks)

Human aspects

Information security related rules are described in Employee handbook and the pledge with employees. In addition, the Information Security Guidebook, which explains the rules in an easy-to-understand manner, is written and distributed in Japanese, English, and Chinese so that officers and employees in Japan and overseas can understand information security and handle information in the proper way.

The company also implements annual training, phishing e-mail exercises, in-house training by level, security training for telecommuting employees, and other forms of education targeting all employees to increase their awareness of information security. (Fiscal 2021 global training ratio* = 96% [*Training ratio = (Number of sites that have conducted training) / (Total number of sites)])

Technological aspects

In order to deter leaks of Murata's company secrets and personal information as well as interruptions of business activities due to cyber attacks, we continue to strengthen anti-malware measures, hardware asset management, firewall construction, Internet communication checks, ID management, system access controls, and diagnosis and countermeasures for vulnerabilities in current information systems.

Moreover, we are globally collecting and monitoring various logs to construct a system for responding to incidents which may become a security accident. In particular, we continue to strengthen security at the plant sites that form the basis of our business activities, and promote responses and countermeasures to constantly changing cyber attacks and risks to maintain a stable and safe production system.

Physical aspects

To prevent unauthorized intrusions into premises at offices, sites and affiliated companies in Japan and overseas, access control of people and vehicles is carried out at all times. Security zones are established within business sites according to the level of security control, and various measures including access controls using ID cards, etc. are implemented in highly secure zones to prevent unauthorized internal and external intrusions. Moreover, in order to continuously improve the physical security level, we periodically diagnose and audit the operating conditions from the perspectives of early detection and evidence accumulation measures in addition to restricting people's movements and preventive measures, and we are promoting the construction of a system to horizontally deploy responses to accidents and incidents which may become accidents with other offices, sites and affiliated companies.

Supply chain management

Promoting CSR approach to procurement with a focus on partnership with suppliers and optimization of supply chain management

Based on the Procurement Policy underpinned by the principles of honesty, fairness, and sincerity, Murata has been building partnerships with its suppliers, working to realize mutually satisfying and prosperous relationships. In particular, regarding quality, we have worked with suppliers to improve unique technologies and management technologies in order to increase the technological capabilities, decrease the defect ratio, and improve yield.

We are also required to extend our CSR activities to the entire supply chain, addressing issues such as human rights, child labor, forced labor, gender or religious discrimination as well as responsible procurement of minerals. Murata considers that CSR procurement is one of these issues and takes measures to mitigate risk in daily operations.

Procurement Policy and Attitude and Conduct Murata Expects of Suppliers

In fiscal 2021, we have revised the group's Procurement Policy and Attitude and Conduct Murata Expects of Suppliers, in addition to revising the risk assessment method for new suppliers and existing suppliers.

Procurement Policy	Basic Procurement Policies
	Procurement Code of Conduct
Attitude and Conduct Murata Expects of Suppliers	Our Expectations of Suppliers
	Supplier Code of Conduct*

* The Supplier Code of Conduct is stipulated in the Murata Group Supply Chain CSR Procurement Guideline.

Basic Procurement Policies

Murata engages in procurement activities under the following basic policies.

1. **Legal compliance**
   We observe laws and ordinances, regulations, and company rules, and we conduct business in accordance with social ethics.
2. **Fairness**
   We broadly open the door on a global level and strive for equality in business opportunities.
3. **Impartial and honest**
   We build relationships of trust and cooperation with suppliers and aim to develop strong partnerships with suppliers.
4. **Social responsibility**
   We fulfill our social responsibility with respect to human rights and the environment, etc. through our procurement activities.

For details on our responsibility to and actions concerning suppliers (CSR procurement initiative), please see here.
https://corporate.murata.com/en-global/csr/people/suppliers

• Joined RBA, an alliance of companies promoting social responsibility

To promote CSR procurement initiatives, Murata joined the Responsible Business Alliance (RBA) in fiscal 2022, an alliance of companies promoting CSR in the global supply chain.

RBA is comprised of electronics manufacturers and suppliers from around the world and aims to improve CSR in the areas of labor, health and safety, environment, ethics, and management systems through the global supply chain. As an RBA member company, we fully support the vision and mission of the RBA and are committed to making further improvement and realizing prosperity with all of our stakeholders to achieve a sustainable society throughout our supply chain.

• Supply Chain CSR Procurement Guideline

Based on the RBA Code of Conduct, we have established the "Murata Group Supply Chain CSR Procurement Guidelines" (hereinafter, "Guidelines") which add information security, Business Continuity Planning (BCP), and import and export controls, etc. The details which we would like suppliers to observe and put into practice are clearly specified under the "Supplier Code of Conduct." In addition to publishing the Guidelines in Japanese, English, and Chinese on our website, they are also distributed to existing suppliers as well as to new suppliers before they begin doing business with Murata.

RBA Code of Conduct

↓

Murata Group Supply Chain CSR Procurement Guideline

Supplier Code of Conduct

↓

CSR Compliance Checklist
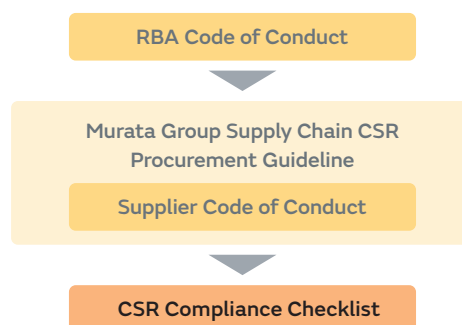
Targets for promoting activities

To promote CSR procurement, Murata sets KPIs (targets) and conducts CSR assessment initiatives in line with its procurement policy.

All of the KPIs set for fiscal 2021 were generally achieved. We will continue to reduce risks for CSR procurement issues in order to achieve the newly set KPIs for fiscal 2024.

•KPIs (targets) and results for fiscal 2021

Fiscal 2021 KPIs	Targets	Results
Rate of agreement signed for compliance with the CSR Procurement Guidelines for Murata Group supply chain	95%	94%
Ratio of suppliers in conformance with the CSR assessment	95%	96%
Ratio of CSR audit execution (new suppliers)	100%	100%

•KPIs (targets) for fiscal 2024

Fiscal 2024 KPIs	Targets
Rate of agreement signed for compliance with the CSR Procurement Guidelines for Murata Group supply chain	95%
Ratio of CSR evaluation improvement	100% improvement of all suppliers needing corrective action
Ratio of CSR audit execution	95% execution rate of CSR audits on important suppliers

* For more information on the identification of important suppliers, please see here.
https://corporate.murata.com/en-global/csr/people/suppliers#id5

Risk assessment for suppliers (audit)

•New supplier with which Murata will start transaction

When starting a new transaction with a supplier, we conclude a CSR Agreement and request that the supplier self-assesses based on the guideline using the CSR Compliance Checklist (hereinafter "the checklist"). There were 36 suppliers that conducted self-assessments in fiscal 2021, and none required improvement. Furthermore, we conduct CSR audits to assess risks and seek improvement of CSR, as well as quality control and chemical substance management systems. There were 22 suppliers audited in fiscal 2021. Of these, five companies that were identified as having minor risks related to "ethics" were requested to submit a follow-up sheet and implement improvement activities. All remediation has been completed at this point in time. In terms of environment, approximately 75%
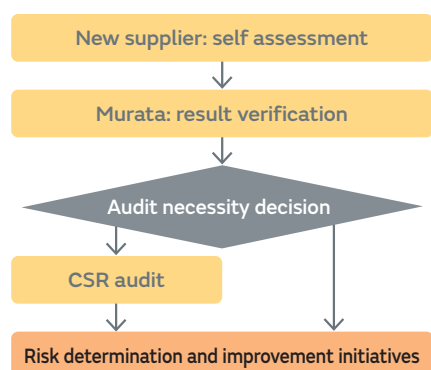
of Murata's GHG emissions are Scope 3 emissions. Furthermore, Category 1 (purchased goods and services) accounts for about 60% of Scope 3. Therefore, it is also essential to reduce GHG emissions from materials purchased from suppliers, and we will work together with our suppliers to reduce GHG emissions.

• Existing suppliers

To help suppliers achieve an understanding and dissemination of Murata's procurement policies and guidelines and recognize and improve CSR risks, Murata has its suppliers conduct an annual self-assessment using the CSR Compliance Checklist. A survey of 133 important suppliers was carried out during fiscal 2021. As a result, we achieved a response rate of 100%, and no critical risks were found at any of the suppliers.

	Scope	Number of companies	Number of companies that needed improvement	Ratio of suppliers with low risk
Fiscal2019	Important suppliers	110	0	100%
Fiscal2020	Important suppliers	154	2	99%
Fiscal2021	Important suppliers	133	5	96%

In March 2022, we started CSR audits in addition to self-assessments for important suppliers selected based on RBA criteria such as transaction amounts and importance in product functions. In the future, we plan to conduct CSR audits of all important suppliers.

CSR audits confirm compliance with the guidelines. In addition to document checks, we also conduct on-site inspections and interviews with employees to get a more accurate picture of the actual situation. Furthermore, prior to conducting CSR audits, we hold briefings for suppliers on the guidelines and CSR audits, and provide Q&A before and after the audits and support for improvement initiatives to deepen their understanding of the guidelines and CSR audits.

In this manner, we use opportunities such as CSR audits of new and existing suppliers to work with them to strengthen their CSR compliance initiatives in the areas of human rights, health and safety, environment, ethics, and management systems. With growing and increasingly sophisticated CSR procurement, Murata strives to secure a reliable supply chain and provide assurance to stakeholders.

Promotion of responsible minerals procurement

•Background and our goal

It is concerned that 3TG[2], cobalt, and mica that are mined in conflict-affected and high-risk areas (CAHRAs)[1] such as Democratic Republic of the Congo (DRC) and its neighboring countries, are associated with financing of armed groups, forced labor, child labor and other violation of human rights, destruction of the environment, money laundering, and other crimes.

In order to avoid the use of minerals in our products that could lead to such misconduct, Murata continues to conduct appropriate due diligence in accordance with the OECD Due Diligence Guidance as well as to avoid engaging in Annex II risk[3].

•Initiative details

We have established a response policy to promote responsible mineral procurement and are building a system to manage whether there are any Annex II risks in CAHRAs for target minerals included in our products. In order to identify smelters and refiners in the supply chain, we conduct surveys in compliance with the RMAP[4] industry-standard and evaluations in accordance with internal standards. In the event that we are using high risk smelters and refiners, we communicate the details of those risks and advance appropriate initiatives aimed at improvement. In response to requests from our customers for our supply chain information, based on surveyed results we are also providing information on cobalt and mica using the EMRT (Extended Minerals Reporting Template) in addition to the CMRT (Conflict Minerals Reporting Template) published by the RMI (Responsible Minerals Initiative)[5]

For more information on our Responsible Minerals Sourcing Policy and efforts for compliance with 5-Step framework of OECD Due Diligence Guidance, please see here.
https://corporate.murata.com/en-global/csr/people/suppliers#id14

•Survey results and future issues and initiatives

At Murata, we regularly conduct surveys of our suppliers to keep abreast of the latest supply chain information. Through previous conflict mineral surveys, we confirmed that our mainstay products such as multilayer ceramic capacitors, inductors, thermistors, and ceramic resonators are already conflict-free.

In the fiscal 2021 survey of conflict minerals, we carried out a survey of 154 major suppliers handling 3TG and achieved a 100% response rate. Moreover, in the cobalt survey of 91 companies, we achieved an 86% response rate.

From the above surveys, we identified 420 smelters, 327 of which are RMAP conformant smelters.

Fiscal 2021 responsible mineral procurement survey results

	Gold	Tin	Tantalum	Tungsten	Cobalt	Total
Total number of smelters and refiners	177	84	41	57	61	420
Total number of conformant smelters and refiners	121	80	37	50	39	327

Through this most recent survey, Murata broadly recognizes three issues and believe that it is important to advance initiatives to address them.

Issue (1) Improving the procurement rate from RMAP-conformant smelters and refiners:

Suppliers are requested to build control systems and implement risk evaluations to use RMAP-conformant smelters and refiners. At the current time, however, we have not reached a 100% rate of RMAP conformant, and it is difficult to guarantee that all of our products are not contributing to Annex II risks.

Initiative

With respect to suppliers who report the use of non-RMAP-conformant smelters and refiners, Murata does not unilaterally demand that they be excluded from the supply chain but rather shares the current issues and consults with the supplier to reach a solution while advancing improvement activities.

Issue (2) Initiative to reach a 100% response rate in the cobalt survey:

Because the cobalt survey is not a legally required response, it is difficult for it to be treated as a priority issue that should be undertaken by the suppliers, and in some cases they do not cooperate with the survey.

Initiative

For problems that are difficult to resolve as an individual company, we will raise the issue with industry organizations as well as continue to seek understanding and cooperation from suppliers regarding the survey.

Issue (3) Handling new minerals other than 3TG and cobalt with risks that are a matter of concern:

In recent years, inquiries from customers have been increasing regarding whether CSR risks also exist for minerals other than 3TG and cobalt. There is no method for performing a risk assessment for new minerals not supported by RMAP, which Murata adopts as the risk evaluation standard, and it is difficult to guarantee the safety of such minerals.

Initiative

In fiscal 2020, mica was added to the RMI's RMAP list of minerals to be controlled, and Murata began a smelter survey. In response to the expansion of target minerals such as lithium, copper, nickel, and aluminum, we will check their use in our products and supply chains. We will continue to work closely with our customers, suppliers, and related organizations to procure minerals, while taking into account risks such as human rights issues.

•Initiatives to address issues through industry actions

Murata is a member company of industry organizations such as the JEITA "Responsible Minerals Trade Working Group" and RMI*6. We are proactively working on issues that are difficult to solve as an individual company, such as creating industry-wide frameworks.

Initiative (1):

For cobalt, there are still many refiners that do not participate in the RMAP. As a member of the JEITA "Smelter Support Team"*7, we carry out activities to encourage smelters and refiners that do not participate in RMAP to undergo the validation process.

Initiative (2):

We participate in the operation of the "Responsible Minerals Sourcing Inquiry Briefings" hosted by JEITA and share the latest information with suppliers and many other companies through these briefings to educate and enlighten them so as to deepen their understanding of the importance of this initiative.

Initiative (3):

Regarding worries about the risks of new minerals, we are clarifying the problems, proposing mechanisms, and engaging in other active debates at the JEITA working group to make proposals to RMI so that RMAP support may proceed in an efficient manner.

*1: Conflict Affected and High Risk Areas
*2: Tin, tantalum, tungsten and gold
*3: Material risks that may occur in relation to mining, trading, dealing, and exporting of minerals from CAHRAs.
*4: A program of the RMI for the assessment of smelter/refiner
*5: For more information, please see here.
 https://www.responsiblemineralsinitiative.org/
*6: For more information, please see here.
 https://home.jeita.or.jp/mineral/index.html (in Japanese)
*7: For more information, please see here.
 https://home.jeita.or.jp/mineral/eng/index_e.html

Supplier commendation system

We at Murata recognize suppliers that have given us great assistance in achieving CSR procurement in addition to their contributions in terms of improvement of quality and delivery, cost reduction activities, and technological innovation, by presenting them letters of appreciation. In selecting the awardees, we determine the eligible suppliers based on their year-round performance and in light of Murata's original standards applied to the criteria. Through these awards, we reiterate our gratitude to our suppliers and build a trust relationship for mutual harmony and benefits with the suppliers..

Promotion of CSR procurement activities with suppliers

In accordance with our Procurement Policy, we have been working to ensure transparency of supply chains by establishing the management system and mitigating risks since 2009. We will continue to work closely with our suppliers and engage in appropriate business activities.

		2009	2013	2016	2019	2020	2021	2022	2023	• • •
Promotion of CSR Procurement Policy		Promotion of RBA (formerly EICC) Code of Conduct					Establishment and dissemination of CSR Procurement Guideline			
Risk evaluation	Existing suppliers			Implement self-assessment			Conduct regular audits			
	New supplier with whom Murata will start transaction						Implement self-assessment			
							Conduct audits for new suppliers			
Measures against conflict minerals			Start using CMRT for response (3TG: tantalum, tin, tungsten, gold)							
						Start using CRT for response (cobalt)				
								Measures against new minerals such as mica		

Executives

Members of the Board of Directors

Takashi Nishijima

Outside Director
Nomination Advisory Committee Member
Remuneration Advisory Committee Member

Takashi Nishijima has been involved in business management in a company group expanding business related to industrial automation globally and has extensive experience and insight as an executive and a board chairman.

Masanori Minamide

Member of the Board of Directors
Nomination Advisory Committee Member
Remuneration Advisory Committee Member

Masanori Minamide has been involved in accounting, financial and corporate planning duties, and business management in Southeast Asia, accumulating a wealth of experience and a solid record of achievement.

Hiroshi Iwatsubo

Member of the Board of Directors

Hiroshi Iwatsubo has been involved in technology development and business management, planning, and sales, accumulating a wealth of experience and a solid record of achievement.

Yuko Yasuda

Outside Director
Nomination Advisory Committee Member
Remuneration Advisory Committee Member
(Committee Chairperson)

Yuko Yasuda has engaged in introducing, assessing, and developing CEOs and evaluating the effectiveness of the Board of Directors for many years as a Japan Director at companies that search for corporate executive candidates. She has extensive experience and insight in fields concerning executive personnel assessment, development and corporate governance.

Norio Nakajima

President

Norio Nakajima has been involved in technology development and business management, accumulating a wealth of experience and a solid record of achievement.

Vice Presidents

24, of whom two concurrently serve as Member of the Board of Directors

Senior Executive Vice President	Executive Vice President		Senior Vice President
Hiroshi Iwatsubo	Satoshi Sonoda	Masanori Minamide	Nagato Omori
	Kenichi Mizuno		Ken Tonegawa

Yoshiro Ozawa

Member of the Board of Directors
Audit and Supervisory Committee Member
(Full-time/Committee Chairperson)

Yoshiro Ozawa has been involved in accounting, finance, and personnel affairs in and outside of Japan, and has extensive experience and insight in these fields.

Hyo Kambayashi

Outside Director
Audit and Supervisory Committee Member
Remuneration Advisory Committee Member

Hyo Kambayashi has been engaged in affairs concerning financial auditing, internal control advising, risk management, and strengthening governance for many years as a certified public accountant and executive and has extensive experience and insight in corporate accounting, auditing and internal control.

Takatoshi Yamamoto

Outside Director
Audit and Supervisory Committee Member
Nomination Advisory Committee Member

Takatoshi Yamamoto has extensive experience of corporate analysis of companies in and outside of Japan as a securities analyst, particularly in regard to the electronics industry, and has specialized insight in finance and accounting, in addition to a wealth of experience related to global corporate management.

Tsuneo Murata

Chairman of the Board
Nomination Advisory Committee Member
(Committee Chairperson)
Remuneration Advisory Committee Member

Tsuneo Murata has been involved in the running and management of business and sales divisions in and outside of Japan, accumulating a wealth of experience and a solid record of achievement.

Naoko Munakata

Outside Director
Audit and Supervisory Committee Member

Naoko Munakata has extensive experience and knowledge about administrative fields including economics, international trade, and intellectual property.

Vice President

Shinji Nomura	Yoshihiro Yamada	Shogo Hashimoto	Takanori Toi	Toshiyuki Sato
Takaharu Sakai	Toshinobu Yamazaki	Yoshitaka Tanino	Koichi Kawakita	David Kirk
Noriyuki Kubodera	Tatsuo Bizen	Kohei Miyao	Shigeki Fukunaga	
Toshihiko Okamoto	Harunobu Sano	Masamichi Ando	Eiichi Morimoto	

Working toward a more advanced governance system

Chairman of the Board
Chairman of the Board of Directors
Nomination Advisory Committee Member
(Committee Chairperson)
Remuneration Advisory Committee Member

Tsuneo Murata

My mission as Chairman of the Board of Directors

As Chairman of the Board, I oversee governance throughout Murata. The subject is something I think about daily, and I try to engage in dialogue with officers and employees both internally and externally. At Board of Directors meetings, which I chair, I am charged with facilitating proceedings. Because of that, I prepare for meetings in advance to further improve their effectiveness and encourage lively and substantive discussions.

We have strengthened efforts to stimulate discussions at meetings since the previous fiscal year, with the most significant change being the introduction of the key meeting topics ahead of scheduled meetings to Outside Directors. Although we had created such opportunities as the need arose in the past, we decided to incorporate such briefings as part of the Board of Directors' meeting process. I feel that this approach has led to more substantive meetings held.

To enhance substantive discussions, we ask the relevant Members of the Board of Directors to provide broad overviews during question-and-answer sessions and discussions at Board of Directors meetings. In the past, Outside Directors spent a great deal of time asking questions to personnel in charge of departments. Now Members of the Board of Directors can directly engage in discussions between themselves that get to the heart of the matter. Naturally, there are times when Members of the Board of Directors' opinions differ.

However, I believe that Members of the Board of Directors can share their opinions based on their expertise and engage in meaningful discussions.

We also introduced new initiatives outside of Board of Directors meetings.

One such initiative is an executive session after each Board of Director meeting. These sessions are an opportunity for Outside Directors to share feedback on the proposals and discussions from that day, the format of the agenda, the timing, and so on. Outside Directors express a range of ideas and opinions, and I feel that this is a valuable opportunity for exchanging ideas not only in relation to the Board of Directors, but also about governance in general.

Additionally, we arranged other opportunities for Outside Directors to exchange opinions with our Representative Director Nakajima and myself. Outside Director-only meetings have been held on a regular basis, and include candid discussion on issues raised during those meetings and topics that are of current interest to Outside Directors. We will continue evaluating the format of these opinion exchanges and the way we determine topics to make them more meaningful.

We believe that there is a need for continual discussions and evaluation form of the Board of Directors to ensure best practices. Established in 2016, one of our objectives for transitioning our governance structure to one that includes an Audit and Supervisory Committee was to delegate authority for the execution of duties and

strengthening our oversight function. Meanwhile, we leveraged the diverse background of our Outside Directors to contribute on oversight activities and operational counsel. Moving forward, we need to clarify what role we expect Outside Directors to play and how to balance decision-making, supervision, and advice when conducting more strategic, bigger-picture discussions at Board meetings. Clarifying these issues will strengthen governance and enhance our corporate value.

Enhancing the Nomination and Remuneration Advisory Committees

The company established a voluntary Nomination Advisory Committee and Remuneration Advisory Committee. Both entities have evolved so that now most of their members are Outside Directors, and the topics and issues they discuss have expanded over the past few years. We now receive activity reports from both Advisory Committees at meetings of the Board of Directors. These reports serve to provide an overview of issues and help frame discussions for Members of the Board of Directors who are not members of the Advisory Committees. This helps deepen their understanding of our nomination and remuneration systems, as well as improve the transparency of the Advisory Committees.

The Nomination Advisory Committee continues to discuss the skills that the Board of Directors should have considering our management strategy, the diversity of the Board of Directors as a whole, ideas concerning the appropriate size of the Board of Directors, and succession plans. When nominating candidates for Members of the Board of Directors, the Advisory Committee not only checks their qualifications against our skills matrix, but considers whether candidates embody Murata's corporate philosophy.

The Remuneration Advisory Committee reached a major milestone during the past two years, as we conducted a fundamental review of our executive remuneration system. The remuneration structure and decision-making processes have been reorganized to allow for increased transparency. Specifically, we introduced an index corresponding to capital efficiency for bonuses, which are short-term incentives, and ESG factors for share-based remuneration, which is a medium- to long-term incentive. We also added a repayment system for remuneration. The Advisory Committee held numerous discussions when designing the system, and we believe that this has enabled us to bring the system to a satisfactory level. (▶ P.93 Remuneration

for Members of the Board of Directors)

While their activities have been enhanced, issues remain regarding coordination between the two Advisory Committees. However, we are starting to take concrete steps toward collaborating on the evaluation process for Members of the Board of Directors. We also intend to discuss how information should be shared between the two Advisory Committees and the Audit and Supervisory Committee.

How Murata can contribute to the realization of a sustainable society

As we indicated in Vision 2030 and Medium-term Direction 2024, Murata is aiming to contribute to the realization of a sustainable society.

Twice a year, the Board of Directors receives a report from the CSR Management Committee, which is tasked with promoting company-wide sustainability initiatives. The reports capture their findings based on extensive discussions. We also started discussions on the executive side to ensure that the committees' and subcommittees' structure and authority will be more effective as a framework for promoting sustainability initiatives. Most recently, the Board of Directors held several discussions on annual execution targets for "materiality," which was established as a key issue originating from social issues. We have been monitoring these targets since.

The continuous cycle of social value and economic value concept in Vision 2030, is well-established. This is the foundation of the Murata Philosophy: "We contribute to the advancement of society by" and "creating innovative products and solutions being trustworthy and, together with all our stakeholders." This expresses the philosophy that Murata has and will always continue to value. Although the external environment is changing rapidly, we constantly think about what makes Murata unique and pursue a form of governance appropriate for improving our corporate value to ensure sustainable growth.
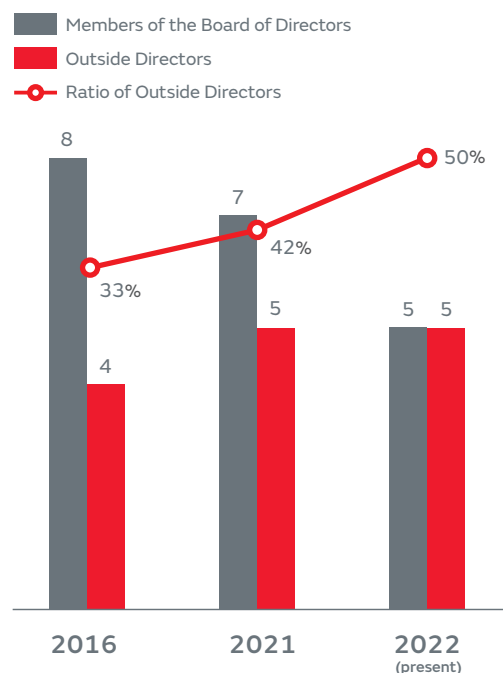
Corporate governance

Our basic views on corporate governance and history of initiatives for reinforcement

At Murata, we position corporate governance as one of our most important management focuses. Seeking to realize sound corporate growth and development while also considering all our stakeholders, we work constantly to establish and ensure the efficient functioning of optimal management systems.

Based on the idea that it is important to adopt "perspectives from outside the Company," we first appointed Outside Statutory Auditors in 1971 and Outside Directors in 2001. In recent years, we have enhanced the diversity of Outside Directors and increased the ratio of Outside Directors. After transition to a Company with an Audit and Supervisory Committee in 2016, the ratio of Outside Directors is at least one-third. In addition to appointing outside executives, we are making efforts to strengthen our corporate governance by steadily taking measures as below, in order to strengthen executive and supervisory functions and increase the transparency of management.

Year	Initiatives
2000	● Established a Vice President system and declared the appointment of Outside Directors ● Established the Management Executive Committee (currently Management Committee)
2001	● First appointed Outside Director * In 2002, the number of Outside Directors was increased to two. * In 1971, we first appointed Outside Statutory Auditors. (We have had full-time Outside Statutory Auditors in the past.)
2002	● Established the Corporate Ethics Policy and Code of Conduct
2004	● Abolished the Directors' retirement benefits system ● Established the Remuneration Advisory Committee ● Established the Internal Control Committee and the Audit Office (currently Office of Internal Audit)
2006	● Established the basic policy on the internal control system
2007	● Established the Corporate Social Responsibility (CSR) Management Office
2008	● Established the CSR Committee (currently the CSR Management Committee)
2015	● Established the Corporate Governance Guidelines ● Established the Nomination Advisory Committee
2016	● Transitioned to a Company with an Audit and Supervisory Committee * Outside Directors shall represent more than one-third of the Directors.
2017	● Introduced a restricted share remuneration plan
2021	● Reviewed compositions of Nomination Advisory Committee/ Remuneration Advisory Committee * The majority of the members of each committee shall be Independent Outside Directors.

Changes in the number of the Members of the Board of Directors

- Members of the Board of Directors
- Outside Directors
- Ratio of Outside Directors

	2016	2021	2022 (present)
Members of the Board of Directors	8	7	5
Outside Directors	4	5	5
Ratio of Outside Directors	33%	42%	50%

Adoption of "Company with an Audit and Supervisory Committee" as a governance system

Murata Manufacturing Co., Ltd. adopted the Company with an Audit and Supervisory Committee structure as a corporate governance system.

In a company with an Audit and Supervisory Committee, a Board of Directors may delegate decisions on important matters for execution to Executive Directors. Delegating decisions on individual matters for execution to Executive Directors enables swift management decisions and flexible execution of duties. We believe this arrangement also helps strengthen the Board of Directors' functions where as it enables the Board to focus more on discussion and monitoring of the company's management policies and business strategies.

In addition, Members of the Board of Directors who are Audit and Supervisory Committee Members hold voting rights on agendas at the Board of Directors and rights to express their opinions as the Audit and Supervisory Committee concerning appointment and remuneration of Members of the Board of Directors at General Meetings of Shareholders. We believe that this ensures strong supervisory functions by Executive Directors.

Structure of corporate governance system
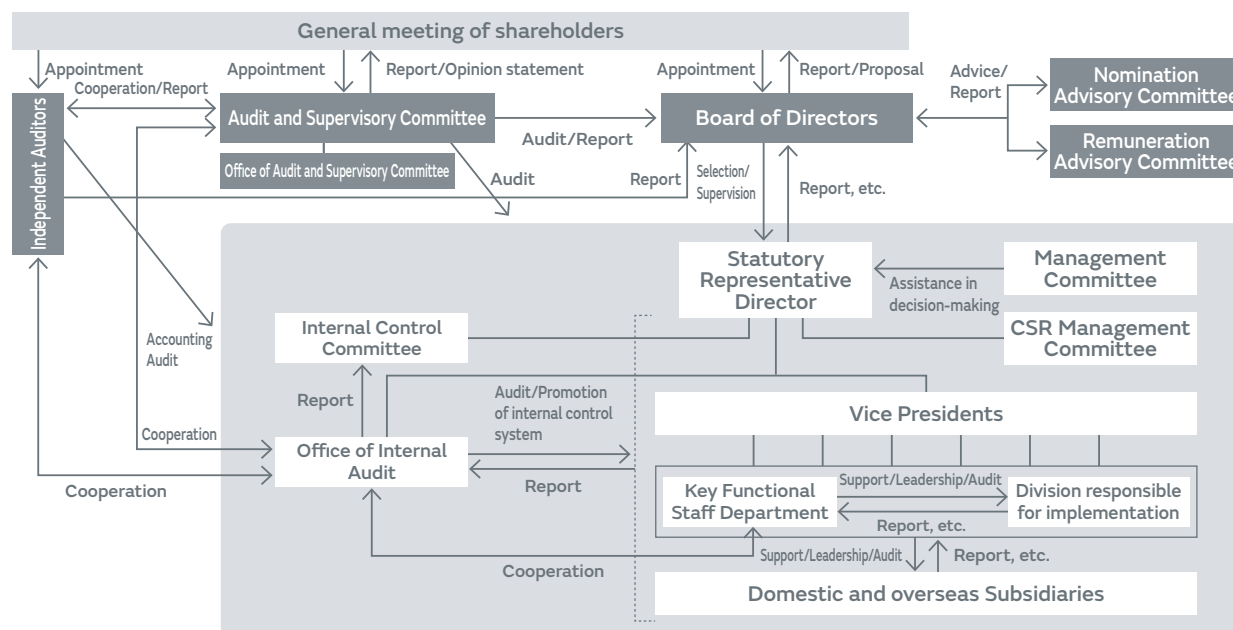
Board of Directors*
The Board of Directors decides on our basic management direction and particularly important matters for execution, and supervises duties implemented by Members of the Board of Directors.

Independent Outside Directors represent more than one-third of the Board of Directors.

Audit and Supervisory Committee*
The Audit and Supervisory Committee establishes auditing guidelines and plans, and based on these, in addition to attending important meetings, audits the legitimacy and appropriateness of duties implemented by the Members of the Board of Directors by conducting surveys of the status of operations and corporate finances with the cooperation of departments involved in the company's internal control system. The Committee may state their opinions in relation to appointment and remuneration of the Members of the Board of Directors at General Meetings of Shareholders.

Three of the Members of the Board of Directors who are Audit and Supervisory Committee Members possess a considerable degree of knowledge in the areas of finance and accounting.

The Committee has one full-time member who shares information concerning the status of operations and corporate finances with part-time members.

Nomination Advisory Committee/ Remuneration Advisory Committee*
These Committees have been established as advisory bodies for the Board of Directors in order to enhance its independence, objectivity, and accountability in relation to the nomination and remuneration of executives.
(▶P.92 Nomination Advisory Committee)
(▶P.93 Remuneration Advisory Committee)

Management Committee
The Management Committee has been established as a deliberative body to assist the Board of Directors and the Representative Director in making decisions. It is made up of Members of the Board of Directors excluding Audit and Supervisory Committee Members and Outside Directors, creating a system for deliberation on management issues specified by the Company regulations.

Vice Presidents
In order to realize more rapid management judgments and more flexible execution in Board of Directors, a Vice President system has been introduced, and our Vice Presidents execute their duties with authority and responsibilities.

CSR Management Committee
The CSR Management Committee has been established to continuously and systematically promote CSR management, including initiatives related to sustainability, and further entrench CSR within the company and serves as a main office to handle issues outside the company. The CSR Management Committee regularly reports to the Board of Directors regarding the status of its activities.

Internal Control Committee
The Internal Control Committee is responsible for the maintenance and continual improvement of the system to secure the appropriateness of the company's operation (the internal control system) and evaluates and examines the status of maintenance and operation of the system. The Internal Control Committee regularly reports to the Board of Directors regarding the status of its activities.

* Please refer to the ESG data collection for information on the number of meetings and attendance rates of Board of Directors and each committee. (▶P.113 ESG data Governance)

Internal control system

The Board of Directors of Murata Manufacturing Co., Ltd. has defined a basic policy regarding the maintenance of a system to secure the appropriateness of company operations (internal control system). Based on this, the company works to maintain and operate the internal control system appropriately.

The Murata Group shares the Murata Philosophy, which acts as a fundamental management policy, and in order to embody it, we have defined a fundamental policy and code of conduct, which have been distributed across the Group including domestic and overseas subsidiaries. The Group has also established common rules and procedures on decision making which are applicable across the Group. Business operation of subsidiaries is discussed based on these rules and procedures, and information on business operation of

Murata is shared. Matters that satisfy specified criteria are submitted to the Management Committee or the Board of Directors for deliberation and discussion.

Divisions that supervise the various business functions (general administration, personnel, accounting, etc.) of Murata Group define frameworks, processing procedures, and judgment standards for duties to ensure that duties within the Murata Group are performed appropriately and efficiently, in addition to providing appropriate direction to subsidiaries as required. As an independent body, the Internal Audit Department (Office of Internal Audit) evaluates and monitors whether duties within Murata are conducted appropriately and efficiently, adhering to laws and regulations and the internal regulations, etc. of the company.

Nomination of candidates for Members of the Board of Directors

Nomination policies

In consideration of the business content, scale, and management environment, etc., of Murata, we nominate personnel with knowledge, experience, and qualities that can contribute to enabling the Board of Directors to function (determination of basic management principles and important business execution, as well as supervision of execution of duties of Members of the Board of Directors) as candidates for Members of the Board of Directors. In nominating the candidates, we take into account the balance and diversity in the expertise, experience, and capabilities of the Board of Directors as a whole.

In nominating candidates for Outside Directors, the company seeks personnel across a wide and diverse range and works to secure candidates who satisfy the independence standards of the Tokyo Stock Exchange and the company. Additionally, under the standards established by the company, we take into consideration the ability of the candidate to perform his/her duties as a director with the expectation that directors will attend at least 75% of Board of Directors meetings.

With regard to candidates for Members of the Board of Directors who will be Audit and Supervisory Committee Members,

as noted above, the company nominates personnel with a wealth of knowledge and experience regarding management administration and business operations who have qualities that can contribute to improvement in the soundness and transparency of management and audit the business execution of Members of the Board of Directors from a fair and objective standpoint. At least half of the candidates for Members of the Board of Directors who are Audit and Supervisory Committee Members nominated by the company are Outside Directors.

Nomination procedures

With the intent of improving the independence, objectivity, and accountability of the functions of the Board of Directors regarding the nomination of Members of the Board of Directors, the Company established a Nomination Advisory Committee as an advisory organ of the Board of Directors.

The Board of Directors determines the nomination of candidates for Members of the Board of Directors based on the reported findings of the Nomination Advisory Committee. Nominations for candidates for Members of the Board of Directors who will be Audit and Supervisory Committee members are subject to approval by the Audit and Supervisory Committee.

[Summary of the Criteria for Independence]

(1) The person is not an executive of the company or its current subsidiary or a company that was a subsidiary within the past three years.
(2) The person is not currently a major shareholder or an executive of a major shareholder.
(3) The person is not an executive of a company, etc., that is currently a significant client or supplier or was a significant client or supplier within the past three years with the company or its current subsidiary.
  * "Significant client or supplier" refers to one with which the company has transactions of 2% or more of consolidated net sales of the company or of the client or supplier.
(4) The person is not an executive of an organization that has received within the past three years a donation or grant of over 10.00 million yen per annum from the company or its current subsidiary.

(5) The person is not an executive of a company or a subsidiary of that company, that employs or has employed within the past three years a Board Member, Statutory Auditor, or Vice President of the company or its current subsidiary.
(6) The person does not have any significant transaction relationship with the company, such as a consulting or advisory agreement, and has not had a significant transaction relationship in the past.
(7) The person is not an executive of the Independent Auditor of the company.
(8) The person is not the spouse or a relative within the second degree of kinship, etc., of a Board Member, Statutory Auditor, or Vice President of the company or its current subsidiary.
(9) The person does not have the risk of constantly creating a substantial conflict of interest with the company's general shareholders as a whole for reasons other than those considered in (1) through (8) above.

Composition of the Board of Directors and Skill Matrix

*○ ... Committee chairperson.   Independent ... Independent Outside Director

Positions in the Company / Name	Nomination Advisory Committee	Remuneration Advisory Committee	Corporate and business management	Technology, research, and development	Insight into industry	Internationality and global experience	Finance and accounting	Legal affairs and compliance	HR, personnel affairs, and human resource development	Sales and marketing	Industrial and trade policy	Governance and risk management
Chairman of the Board and Representative Director **Tsuneo Murata** — Chairman of the Board of Directors	○	●	●	●	●	●				●		●
President **Norio Nakajima**			●	●	●	●				●		
Member of the Board of Directors Senior Executive Vice President **Hiroshi Iwatsubo**			●	●	●	●				●		
Member of the Board of Directors Executive Vice President **Masanori Minamide**	●	●	●		●	●	●	●			●	●
Outside Director **Yuko Yasuda** Independent	●	○	●			●		●			●	●
Outside Director **Takashi Nishijima** Independent	●	●	●	●	● (Solution business)	●				●		●
Member of the Board of Directors who is an Audit and Supervisory Committee Member (Full-time) **Yoshiro Ozawa** — Chairperson of the Audit and Supervisory Committee					●	●	●		●			●
Outside Director who is an Audit and Supervisory Committee Member **Hyo Kambayashi** Independent		●	●			●	●	●				●
Outside Director who is an Audit and Supervisory Committee Member **Takatoshi Yamamoto** Independent	●		●		●	●	●			●		
Outside Director who is an Audit and Supervisory Committee Member **Naoko Munakata** Independent				●		●					●	●

Nomination Advisory Committee

● Composition and Duties

The Nomination Advisory Committee deliberates on criteria for the selection of candidates for Members of the Board of Directors, independence standards for Independent Outside Directors, nomination of candidates for Members of the Board of Directors, nomination of candidates for Representative Directors and executive Members of the Board of Directors, and succession plans for the President, and reports its findings to the Board of Directors. The committee also considers the skill matrix of Members of the Board of Directors and other key issues from the perspective of human resources so that the Board of Directors can continue to perform its functions, and supervises the appointment of Vice Presidents.

The members of the committees are selected by the Board of Directors from among its Members and Independent Outside Directors comprise the majority of the committee members in order to ensure the independence of the committees. At the Nomination Advisory Committee, the Chairman of the Board and Representative Director, who embodies Murata Philosophy and engages in management strategy and governance from an overall perspective that is independent from business execution, sets the discussion plans and agenda items in light of the Company's circumstances and situation of individuals, etc., and leads the meeting proceedings as the chairperson of the committee.

● Activities

The Nomination Advisory Committee deliberates on the annual discussion plans at its first meeting of each fiscal year and upon setting each item, the trends inside and outside the Company and the opinions of each committee member are reflected.

In fiscal 2021, in addition to conducting the nomination of candidates for Members of the Board of Directors, the nomination for candidates for the Representative Directors and executive Members of the Board of Directors, the reporting of findings to the Board of Directors, and the supervision of the appointment of Vice Presidents as in previous years, the committee also conducted discussions in accordance with the revisions of the Japan's Corporate Governance Code regarding the approach, authorities and roles relating to the independence of the composition of the Nomination Advisory Committee, the skills that should be possessed by the Board of Directors in light of management strategies, and the approach regarding the diversity and suitable size of the Board of Directors overall.
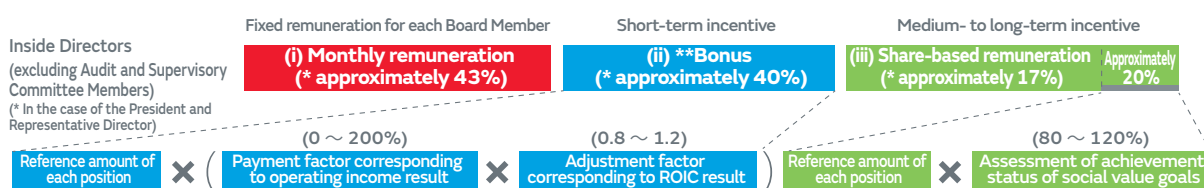
Regarding the succession plan for the President, the Company has already established the conditions required as President, such as "giving highest value to Murata's Philosophy, and embodying it," and the status of the plan has been reviewed, including the measures and procedures to be taken if an emergency situation were to arise.

Remuneration for Members of the Board of Directors

Policies regarding remuneration

With respect to remuneration for Members of the Board of Directors, Murata Manufacturing Co., Ltd. makes it a basic policy to provide a system and level of remuneration that is considered suitable for executive-level managers of a globally competitive electronic equipment and component manufacturer in order to ensure recruitment of human talent considered to be excellent based on a comparison with same-industry competitors, to raise the morale and motivation to improve financial results, and to contribute to the maximization of corporate value. Based on this basic policy, the remuneration system was revised in fiscal 2022.

Remuneration for Members of the Board of Directors who are not Audit and Supervisory Committee Members is made up of (i) monthly remuneration, (ii) bonus with the aim of giving a short-term incentive, and (iii) share-based remuneration (non-monetary remuneration) with the aim of making them further co-creating values with our shareholders by giving a medium- to long-term incentive. The remuneration paid to Outside Directors who are not Audit and Supervisory Committee Members or members of the Board of Directors who are Audit and Supervisory Committee Members is only monthly remuneration.

Inside Directors (excluding Audit and Supervisory Committee Members) (* In the case of the President and Representative Director)

Fixed remuneration for each Board Member	Short-term incentive	Medium- to long-term incentive
(i) Monthly remuneration (* approximately 43%)	(ii) **Bonus (* approximately 40%)	(iii) Share-based remuneration (* approximately 17%) — Approximately 20%

Reference amount of each position × (Payment factor corresponding to operating income result (0 ~ 200%) × Adjustment factor corresponding to ROIC result (0.8 ~ 1.2)) Reference amount of each position × Assessment of achievement status of social value goals (80 ~ 120%)

** Bonuses are variable within the range of 0 - 200% of the reference amount of each position.

(i) Monthly remuneration: The monthly remuneration is a fixed remuneration of an amount individually decided for each Member of the Board of Directors based on a fixed amount for service as Member of the Board of Directors, and an amount that is decided based on consideration of the level of importance of each Member of the Board of Directors' business execution allocation and responsibility.

(ii) Bonus: The bonus is cash remuneration that is provided as an incentive to create economic value in each fiscal year. The amount is calculated by multiplying a reference amount for each position by a factor (variable within a range of 0% to 200%) according to the level of achievement of the targets for the performance evaluation indicators. The performance evaluation indicators are operating income and ROIC (pre-tax basis), which are indicators related to the Group-wide management targets for economic value in the Medium-term Direction 2024. The Company selected these indicators in order to provide an incentive to increase net sales, which are associated with profit margins that the Company emphasizes, and efficiently generate profits from invested capital.

(iii) Share-based remuneration: As the Company's share-based remuneration, restricted shares will be allotted with the aim to increase the willingness to contribute to the co-creation of values and continuous enhancement of corporate value spanning the long term between the Company's Members of the Board of Directors and shareholders. Furthermore, because a portion of the share-based remuneration (approximately 20% of the total share-based remuneration) is based on an evaluation of initiatives related to the creation of medium- to long-term social value and ESGs, every fiscal year the Remuneration Advisory Committee evaluates the progress of the initiatives for achieving the Group-wide management targets for social value in the Medium-term Direction 2024 and adjusts the amount of such portion within a range of ±20% of the reference amount set for each position. In addition, restrictions of the allotted restricted shares will be lifted when Eligible Members of the Board of Directors' term of both positions as Member of the Board of Directors and Vice President expires, or retires due to the compulsory retirement age or resigns.

[Repayment of remuneration, etc. (malus and clawback provision)]
In order to ensure soundness of the remuneration system for Members of the Board of Directors, the Company has established a provision (a so-called malus and clawback provision) whereby, based on the decision of the Board of Directors following deliberations by the Remuneration Advisory Committee, the right to receive a bonus before it is paid and share-based remuneration before the transfer restrictions are lifted are fully or partially forfeited under certain circumstances, such as misconduct or retrospective adjustments to financial statements due to fraudulent accounting.

Each standard and composition ratio of monthly remuneration, bonus, and share-based remuneration is based on the "Executive Compensation Database" operated by the external consultant WTW (Willis Towers Watson) and will be determined by performing benchmarks on corporations similar to the Company's type of industry and scale and verifying the validity. Furthermore, the composition ratio of remuneration elements of remuneration of the President and Representative Director is largely as follows. The composition ratio of remuneration elements for other inside Members of the Board of Directors who are not Audit and Supervisory Committee Members is set so that the ratio of bonuses and share-based remuneration is higher for upper ranking positions according to the responsibilities, etc. of each position.

Procedures for determining remuneration

The Company aims to enhance objectivity and transparency regarding the amount of compensation, etc., of Directors of the Company and decision policy on individual compensation, etc., concerned with determination of calculation methods and the Board of Directors makes decisions based on reports from the Remuneration Advisory Committee, which was established to improve corporate governance.

Remuneration Advisory Committee

The Remuneration Advisory Committee deliberates on the remuneration system and levels for Members of the Board of Directors and reports its findings to the Board of Directors, and is entrusted from the Board of Directors to decide on the amounts of individual remuneration. The members of the committees are selected by the Board of Directors from among its Members and a majority of the committee comprises Independent Outside Directors. The chairperson is selected by resolution of the Board of Directors among members who are Independent Outside Directors.

Analysis and evaluation of effectiveness of the Board of Directors

The company endeavors to improve the effectiveness of the Board of Directors by conducting an analysis and evaluation of the effectiveness of the Board of Directors as a whole once a year and discloses an overview of the procedure and results.

Survey method	Questionnaire for all Members of the Board of Directors and interviews with Outside Directors
Confirmation items	Composition of the Board of Directors, agenda items submitted to meetings, status of deliberation, personal participation of Director, operation of each committee including voluntary advisory committee, and other matters regarding the operation of the Board of Directors
Analysis/ evaluation	The implementation, tallying, analysis, etc. of the questionnaire was carried out by a third party. Survey results were discussed multiple times by the Board of Directors with reference to the results of the questionnaire and interviews

Results of the analysis and evaluation, and recognition of challenges

The Board of Directors of the Company has been assessed to be functioning with sufficient overall effectiveness in consideration of its duties and obligations.

- Regarding number of Directors and diversity, etc., composition of Board of Directors is generally appropriate. Proposals have been sufficiently submitted to the Board of Directors, and an atmosphere that enables Directors to speak out freely and openly is being cultivated and broadminded and constructive discussions and exchanges of opinion are taking place.
- When determining management strategies and plans, discussions are held with an awareness of profitability and capital efficiency, and basic sustainability policies and efforts to enhance them, as well as related information disclosure, are thoroughly discussed.
- Outside Directors actively provide advice from their expert perspectives and ask effective questions.
- The Nomination Advisory Committee and Remuneration Advisory Committee are functioning effectively.

Our recognition of the challenges is as follows.

- The evaluation showed that, due to the measures taken, some improvement has been made in the following issues that were identified in fiscal 2020.
- On the other hand, it was recognized that there are some new challenges and problems, and that more improvements are expected, and further efforts are needed in the future. We will continue working to further improve the effectiveness of the Board of Directors in this fiscal year as well.

Achievements of initiatives in fiscal 2021
- **Improvement of reporting on ESG-related initiatives** The evaluation showed that there is increased reporting and discussion of the basic sustainability policy and efforts to improve it, as well as related information disclosure.
- **Enhancement of discussions on risk approach** An agenda item on risk management was added to enhance reporting and discussion with a more bird's eye view approach. The report on risk management has been previously included in the reports from the CSR Management Committee, which has been held twice a year at the Board of Directors meetings, but it was decided to separate risk management as an individual item and report it twice a year as a regular agenda item.
- **Improvement of reporting and discussions on internal control systems, and expansion of discussion time**
- **Further improvement of the quality of discussions** As a measure to make effective use of time at the Board of Directors meetings, we decided to provide Outside Directors with explanations of important agenda items, etc., in advance. These efforts to provide explanations in advance and corporate information was evaluated as effective in resolving information asymmetry to a certain extent, ensuring more time for discussions at the Board of Directors meetings and enhancing discussions. Furthermore, opportunities were set up and implemented outside of the Board of Directors meetings for exchanges of opinions and sharing of perceptions between Outside Directors and the management.

Challenges and problems identified in the evaluation of effectiveness for fiscal 2021
- **Measures to examine the desired direction of the Board of Directors and further enhance and energize discussions** With the aim of allocating more time for strategic discussions and discussions from a wider perspective, discussions have been started to move in the direction of revising the balance between decision-making functions, supervisory functions and advisory functions. Such examination and discussion will continue into the future.
- **Necessity to further enhance communications among Directors** Aiming to eliminate the information gap between Inside Directors and Outside Directors, and facilitate smooth communications among Directors, the Company is conducting various initiatives including providing explanations and company information to Outside Directors in advance, holding meetings between the Outside Directors and management, and holding meetings for only the Outside Directors as meeting opportunities outside of the Board of Directors meetings. By arranging opportunities for such meetings, the Company strives for more effective utilization of these initiatives.

Initiatives in fiscal 2022
- Examination of schemes to strike balance between the decision making function, supervisory function and advisory function and to improve the effectiveness of the respective functions
- Measures to conduct more strategic discussions and discussions from a wider perspective
- Clarification and shared understanding of the roles expected of Outside Directors
- Examination of arrangement and utilization of off-site meetings
- Commencement of executive sessions (review of Board of Directors meetings)

Outside Director
Audit and Supervisory
Committee Member
Nomination Advisory
Committee Member
Takatoshi
Yamamoto

Outside Director
Audit and Supervisory
Committee Member
Naoko
Munakata

Outside Director
Nomination Advisory
Committee Member
Remuneration Advisory
Committee Member
(Committee Chairperson)
Yuko Yasuda

Outside Director
Nomination Advisory
Committee Member
Remuneration Advisory
Committee Member
Takashi
Nishijima

Outside Director
Audit and Supervisory
Committee Member
Remuneration Advisory
Committee Member
Hyo Kambayashi

What are the challenges to further increase corporate value that governance has brought to light?

Change in attitude toward governance

Yasuda I have served as a Member of the Board of Directors for five years. During this past year, I sensed that Murata's approach for governance has evolved. Under the leadership of Chairman Murata and President Nakajima, the word "governance" has been fully embraced by Members of the Board of Directors, and I sense that members are eagerly trying to link the strengthening of governance to corporate growth and value creation. This change is especially noticeable in determining the agenda for the Board of Directors meetings and in the activities of the Nomination and Remuneration Advisory Committees. I noticed changes at meetings, such as an increase in discussions related to medium- and long-term growth strategies. Although at times Outside Directors and Inside Directors have clashed due to differences of opinion, I see this is a sign that our meetings have become a place for productive discussions.

Yamamoto In the three-way discussion in last year's Integrated Report, I noted that Murata's governance needed to be moved to the next phase. In addition to changes in the Board of Directors' composition, the substantive strengthening of the structure of the Nomination and Remuneration Advisory Committees and the deepening of our discussions, significant changes were made during the past year. This includes a deliberate change in the way that Chairman Murata leads as Chairman of the Board of Directors to stimulate discussions at the Board of Directors meetings.

When Chairman Murata was replaced by President Nakajima as

President, he said that he wanted to place more emphasis on governance to ensure Murata's sound and sustainable development, and I think we are starting to see substantial changes taking place. I feel that the Murata Group is strengthening its governance structure and enhancing internal control capabilities.

Kambayashi As you have both mentioned, I am also aware that Murata's governance has been evolving. Thanks to the deep commitment of Chairman Murata and the management team to governance and their willingness to incorporate outside opinions, I believe that the environment is such that talented Outside Directors can express their opinions on the ideal form of governance from many different perspectives.

Yamamoto In addition to providing company information to Outside Directors, the pre-meeting explanations of the Board of Directors agenda items are now given. Efforts to further improve governance through information sharing, such as regular meetings between Outside Directors and the two Representative Directors and executive sessions after Board of Directors meetings, are another significant change.

Munakata The introduction of opportunities to hear pre-meeting explanations of the Board of Directors agenda items was a major improvement in the previous fiscal year. Being able to check facts prior to meetings allows us to concentrate on day-of Board of Directors discussions and to use our meeting time more effectively. Details of the discussions that took place internally have been added to the text of agenda items, allowing for greater transparency of the issues.

Nishijima I was appointed as a Member of the Board of Director this year, and so I have only attended a few Board of Directors meetings. However, my impression was that the mood was very free and open and that Outside Directors, who come from different backgrounds, were asking questions based on their experience and freely shared insight in their individual areas of expertise. The discussions were both substantial and constructive.

Based on my experience as Chairman of a Board of Directors at another company, I can tell you that in order to improve the effectiveness of a Board, it is extremely important for Inside Directors to take the initiative and be willing to make changes, aiming for better management and corporate governance. A major premise of this is leveraging the experience and knowledge of Outside Directors. I sense that Murata's Inside Directors share this same desire.

Enhancing Nomination and Remuneration Advisory Committees activities

Yasuda Another area where change has been particularly noticeable is in the activities of the Nomination and Remuneration Advisory Committees. The activities of the Remuneration Advisory Committee, which I chair, have increased dramatically during the last fiscal year. We conducted numerous discussions regarding the composition of remuneration for Members of the Board of Directors, including the introduction of a mechanism that incorporates ESG factors. I believe that we have created a precise model that only Murata, a company known for its fairness, can provide. While we are building a remuneration system that will link to improving Murata's competitiveness, we also need to continue to carefully consider what the most appropriate model is as the social environment and the market changes.

Kambayashi I also strongly feel that we have had some effective discussions, especially over the past year. In addition to Murata's unique approach, the basic concept of "Value for Fee" has been incorporated as the foundation for remuneration.

Issues for the future include collaboration with the Nomination Advisory Committee and ESG and remuneration. As the way in which ESG is perceived around the world changes, we need to keep a close eye on what new values will be demanded and deepen our discussions to include not only remuneration paid to Members of the Board of Directors and Vice Presidents, but also remuneration paid to employees.

Yasuda In terms of collaboration between the Remuneration Advisory Committee and the Nomination Advisory Committee, efforts are underway to link Representative Directors' self-evaluation to the process of selecting and dismissing future Presidents. I think this was a major step forward.

The Nomination Advisory Committee has discussed the composition of the Board of Directors, the skills matrix, and a contingency plan (measures for when the President is incapacitated). These discussions have also been very productive.

Yamamoto Yes. We also checked the training provided to the future management team and the sustainability of human resource composition. Diversity & Inclusion (D&I) was another major topic that came up in our discussions. This year for the first time, a foreign national was appointed as Vice President. We are now in the process of deepening

discussions on the development and selection of other such global human resources.

While it is certainly true that the activities of both Advisory Committees have been enhanced, there are still issues that need to be addressed in terms of cooperation between each committee, as well as with the Audit and Supervisory Committee. If we are going to create a structure befitting the Global No. 1 Component & Module Supplier, it is essential for these three committees to share an awareness of the issues Murata is facing and deepen constructive discussions and cooperation.

Realizing the medium- to long-term plan and maximizing corporate value in the future

Yasuda In the previous fiscal year, Murata formulated and announced its long-term Vision 2030 and the first phase of that vision, Medium-term Direction 2024. Murata described the plans in detail to Outside Directors, including providing preliminary explanations from a very early stage. Murata started the formulation process much earlier than it did last time, and it was encouraging to see discussions making progress.

Kambayash I agree. The process of formulating this medium- to long-term plan, characterized by the fact that it was shared and discussed several times during briefings to Outside Directors and at the Board of Directors meetings, was a truly excellent governance initiative.

Munakata This was the first time I witnessed the formulation of a medium- to long-term plan. I got to experience the process of gradually fleshing out the plan from its skeleton form. It was an excellent opportunity for me to revisit my understanding of the company's thinking.

Words used when talking about visions and policies tend to be highly abstract. As a company grows and the number of people involved increases, we need to think about the best way to communicate our message so that it is received in the spirit in which it is intended. I participated in discussions that were very mindful of the need to deliver content in as concrete a way as possible. For example, one of Murata's four management transformations is "management that creates a continuous cycle of social value and economic value." The goal is to expand the axis of value provision to innovation related to solving social issues, which will eventually lead to financial value. This should happen in line with the Murata Philosophy, which states a desire to contribute to the development of culture, rather than being written from a supplier's perspective. We need to look at how Murata has built up its management capital by practicing this Philosophy and consider how it can build on it even further in the future. If Murata can cleverly verbalize the story behind its value creation which is inherent in its Philosophy, I am sure that it will be able to increase employee engagement and meet investors' expectations for disclosure of the methods used to realize its strategy.

Kambayashi I believe it is vital for companies to understand internal and external risks, such as the state of the economy, geopolitics, customer trends, laws and regulations, the global environment, technology, and employee engagement. This sets the framework and direction for their medium- to long-term plans. With this plan, I paid close attention to Murata's ability to thoroughly identify changes in risk. Risk scenarios are constantly evolving, and there may come a time when it is necessary to change a strategy. Going forward, one of the key points will be organizing how to accurately identify these changes, who should make timely decisions on strategic changes, and how such decisions should be made in a way that is easy to understand.

Yamamoto As Mr. Kambayashi has pointed out, a significant number of risk factors were considered when formulating Vision 2030 and Medium-term Direction

its management base. From a human resources perspective, I believe that it is essential to invest in human capital, a significant source of value. President Nakajima has indicated that diversity within the organization is necessary to create the soil for new businesses to emerge from. I believe that D&I should be promoted in terms of career advancement of both women and global human resources. I have had an increasing number of opportunities to talk with Murata's female managers, and I sense there are many highly capable executive candidates with a determined sense of improvement. I hope that Murata will train these women properly and, at the same time, achieve its ambitious goal of increasing the number of female managers to 10% by fiscal 2030.

I find the management goal of sending overseas employees to other locations to gain experience outside of their home country very intriguing. Personnel who work and study across national borders are a source of growth, and I hope that Japanese personnel will continue to be encouraged to gain this global experience.

Nishijima Human resources are the most crucial factor for expanding the scope of value from "things" to "experience." I have been involved in running manufacturing businesses for many years. When you focus on manufacturing, the necessary qualities are firmly cultivated in organizations and individuals. However, this can be an obstacle when it comes to providing value for experience. I intend to follow this process carefully to see whether human resource strategies are being developed in conjunction with management strategies. I will also track whether the necessary initiatives are being implemented to close the gap between required human capital and current situations.

Yamamoto Regarding human capital, increasing employee engagement is one of Murata's medium- to long-term management goals. However, workplaces that are comfortable for employees are not necessarily a sign of a good organization. We need an environment in which there is a certain amount of tension that energizes people and the organization. We will not see improvements in long-term engagement and the maximization of corporate value unless this healthy tension can be converted into motivation that allows people to rise to and take on challenges.

Munakata Murata should also strengthen its intellectual capital initiatives. The source of Murata's competitiveness and

2024. Companies must remain flexible and adapt to these constant changes. The autonomous and decentralized organizational management advocated by President Nakajima must be strong to ensure a resilient response when adapting. Murata has announced that it will raise net sales of its third layer businesses in its 3-layer portfolio to 100.0 billion yen in fiscal 2030. Yet the market will surely calm down, and we will have to see how far along we are towards achieving this goal at the end of the Medium-term Direction 2024.

Munakata At the first layer, I would like to see Murata maintain its current policy of sparing no expense in research and development activities and investment necessary to continue to be a leader. At the second layer, I would like to see responding sensitively to customer changes and integrating acquired companies to make them competitive. With the third layer, which is above these two layers,, I would like to see the development of new customers by showing technology options. In the future, I think Murata will need to further increase the speed and accuracy with which technology is deployed by putting itself in the customer's position and appointing personnel to advocate for them.

Yasuda For Murata to further improve its corporate value, it needs not only to enhance the businesses in each of the three layers, but also to invest in

there are various risks. The global landscape is tenuous and companies must adapt to new balances and relationships. Going forward, the "power to read the future," one of Murata's core competencies, will be even more important.

In the past, the management environment was driven by changes in technology and markets. Currently, policy risks in each country are having a major impact on a range of business divisions. Murata needs to closely monitor the direction in which each country's systems and policies are heading, prepare scenarios, develop mechanisms to swiftly act, and enhance its proficiency. I hope that I can be of help by offering the perspectives I have developed through my experience.

Yamamoto Since I was an analyst, I have had the impression that Murata Manufacturing Co., Ltd. was a company with a lot of institutional knowledge. I have witnessed some of the diverse aspects of the company over the past three years, and I believe that its expansion in size and the changing trends in the world require it to explicitly state its knowledge in a positive way. I understand that this is exactly what Murata is working on now, including the creation of new policies. I hope that this process contributes to constructive dialogue with securities analysts and investors and appropriate information disclosure.

Yasuda I believe imagination is necessary for Murata's growth. I would like to see Murata go beyond the boundaries of a component manufacturer as an "Innovator in Electronics." Rather than considering domestic and Chinese

differentiation from its competitors lies in its intellectual property and intangible assets. We were briefed on the situation in the first and second layers at the Board of Directors meetings. It would be good if we could deepen our discussions from the perspective of intellectual capital when considering new business models for the third layer.

Moving forward in leaps and bounds

Kambayashi As I mentioned earlier, risks affect the realization of Murata's management philosophy and medium- to long-term strategies. To be honest, I feel that Murata's tolerance is not yet clear in terms of the magnitude of risks that occur. It is my understanding that realizing a management philosophy is all about selecting the best strategy based on appropriate governance, identifying risks inherent in that strategy, developing and operating appropriate internal controls, and maintaining a balance between risks and internal controls over the medium to long term, with the aim of improving expected value. I plan to continue to closely monitor how Murata's management reacts to the five elements of management philosophy, governance, strategy, risk, and internal controls.

Munakata As Mr. Kambayashi mentioned, we are in the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) era, in which the future is difficult to predict and

component manufacturers in the same industry as its benchmarks, Murata should be considering global innovators who are expanding their business around the world as they are more comparative groups.

To this end, it is important not only to work hard on daily tasks, but also to play around and shake things up. Murata must invest in creating an environment in which engineers can innovate, such as by setting aside time for them to think about something other than their current business.

Nishijima Murata is famous for using new technologies to create innovative products. However, due to its sincere and humble corporate culture, Murata projects an image of being a force behind the scenes rather than taking center stage. In my view, being at the center of world-changing innovations that can create both social and economic value is a requirement for a top global company. To create innovation in both "things" and "experience," Murata must change its approach as an organization that thinks of products and services from its own view point to one that approaches things from the perspective of customers and society first.

I have experience managing a company that operates globally and been involved in expanding business domains to include "experience." Although my experience was in a different industry, the industrial structure itself is undergoing a major transformation, and the boundaries between markets are blurring. In that sense, I would like to use my experience and knowledge to contribute to the improvement of Murata's corporate value. I hope to ask a number of questions and engage in constructive discussion from a perspective different from Murata's conventional wisdom.

Kambayashi As a universal value, the Murata Philosophy is the foundation of Murata's management. I strongly feel the need to further strengthen the mechanisms for every officer and employee to realize how the Murata Philosophy is being put into practice and whether the company is being managed in accordance with the Murata Philosophy.

Munakata The culture at Murata is one of self-discipline, hard work, and trust. As someone who has been involved in one aspect of Japan's industrial policy as an administrative official, I am very proud that Murata is showing that it can win in the world through this mindset. Even as industrial structures and business

domains change, I hope that Murata will make even greater strides while leveraging the spirit embodied in the Murata Philosophy.

Yamamoto In today's capital markets, Murata has an excellent reputation for management and profitability, and Murata is right to feel confident. Meanwhile, to achieve the sustainable creation of economic and social value, it is important for Murata to continue to take measures to disseminate its Philosophy and slogan, since these have been the source of its success to date. Murata should work to recruit and develop human resources and improve employee engagement to establish a more resilient organization. It is also important for Murata to maintain its global leadership position and high market share of first-layer products and to use this as a driving force to create a continuous cycle with second- and third-layer products.

Yasuda For my part, I will continue to emphasize that innovation is created amidst diversity in terms of human capital. New innovations and completely different ways of thinking will emerge by continuing to seek out diversity, whether that be by employing more women in leadership positions or foreign nationals. It would be great if the management team and employees at sites could experience that. I will continue to propose diversity initiatives and emphasize the importance of maintaining a broad vision that is not limited to a component manufacturer.

Risk management

Basic view

In order to sustainably improve the enterprise value of the entire Group, Murata is building a risk management system to appropriately manage the various internal and external risks related to its business activities. Moreover, we are engaging in activities to reduce loss when risks are discovered that have a significant impact on our business. Examples of these activities include regularly classifying and evaluating each risk concerning our overall business activities and implementing countermeasures in advance according to the priority, etc..

Promotion structure

Murata has established the "Risk Management Committee" as a subcommittee of the CSR Management Committee, which is chaired by the President. This committee is chaired by a Vice President in charge and is composed of Directors in charge of each function including General Affairs, Human Resources, Finance, Corporate Planning, Corporate Communications, Intellectual Property, Environmental Affairs, Information Systems, and Legal Affairs departments to discuss countermeasures concerning company-wide risk matters. We have also established the Information Security Subcommittee and BCM* Subcommittee as subordinate organizations to study and take measures to address particular risks.
(▶P.79 Business continuity management (BCM))
(▶P.80 Information security)

* Business Continuity Management
  Management activities that are operated on an ongoing basis to formulate, maintain, and renew the BCP (Business Continuity Plan), to allocate budget and resources for business continuity, to take preventative measures, and to conduct, check, and continually improve education and training for permeating initiatives.

Understanding risks

The Key Functional Staff Department and the Business Division responsible for implementation, which are responsible for each risk, extract the risks that Murata is currently facing or risks that are expected in the near future. The Key Functional Staff Department prevents the omission of risk identification by correctly recognizing: (1) risks which must be identified as company-wide risks from among the risks extracted by the Business Division responsible for implementation and (2) risks that the Key Functional Staff Department and Business Division responsible for implementation must mutually share and cooperate on. Further, the department is building a system that can appropriately respond to company-wide risks. (Refer to the figure below) Moreover, the extracted risks are comprehensively identified and managed by evaluating the importance based on the frequency of occurrence and impact and then displaying those risks on a risk map.

The Risk Management Committee reviews the details of risks with a high degree of importance and urgency from among the risks which are extracted in this manner and issues instructions for added countermeasures as needed. In addition, the departments which are responsible for each risk report on those risks with a high degree of importance and urgency to management within the Board of Directors and Management Committee. This enables management to identify the corresponding risks and take the appropriate risk countermeasures.

Company-wide risk management system
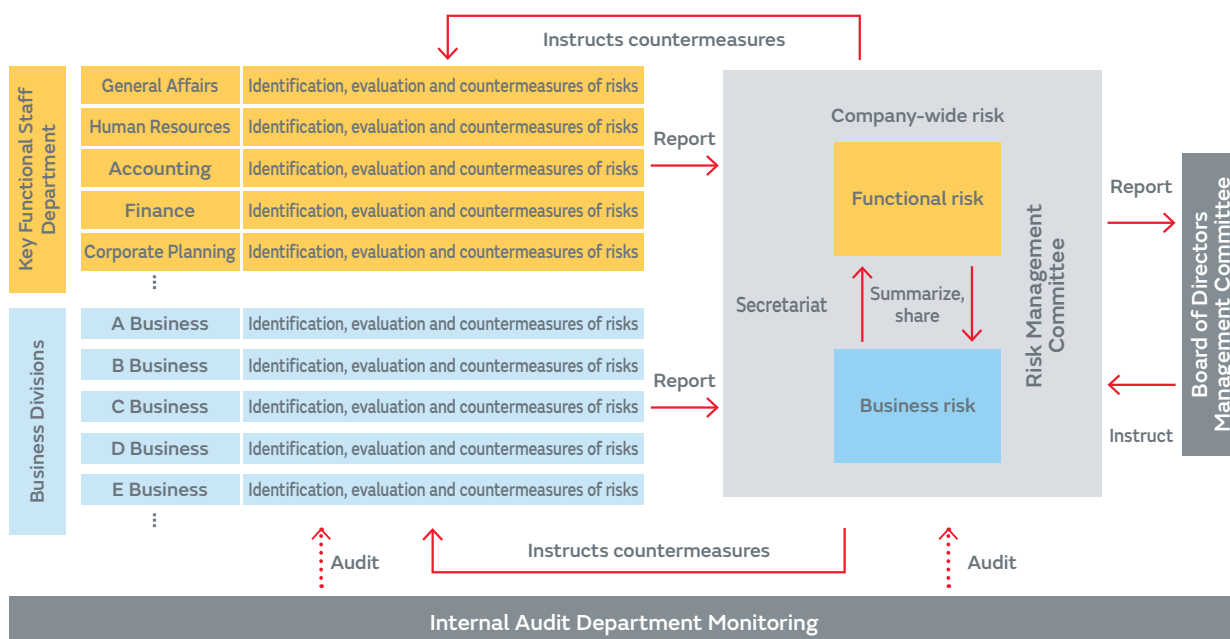
Business and other risks

Risks that may have a material impact on the company include the following.

The frequency of occurrence and the degree of impact of residual risk remaining after implementing each risk countermeasure, are classified into the three categories — "High," "Medium," and "Low." With regard to the degree of impact, an indicator is selected from the five indicators of "Organizational impact," "Impact on production activities, etc.," "Regulatory/administrative impact," "Impact on business transactions," and "Media/reputational impact" and classification is made based on the criteria that has been set in advance for each indicator. For more details about each risk, refer to the Annual Securities Report (date of submission: June 29, 2022)*

* For more information, please see here.
https://corporate.murata.com/-/media/corporate/about/newsroom/news/irnews/irnews/2022/0629d/murata86gorep.ashx?la=ja-jp&cvid=20220629015325000000 (in Japanese)

Risk categories	Risk description	Primary response	Frequency of occurrence	Degree of impact
External environmental risks				
Risks relating to overseas business development	● Political situation in the corresponding country and region that we are entering, exchange rates, taxation and other legal systems, various regulations pertaining to finance and import/export, the status of social capital development, other special regional characteristics, and the impact of sudden changes in these factors	● Thorough risk assessment before starting operations overseas ● Promote the multipolarization of production sites ● Build an alternative production system ● Build a system for gathering information about the international situation on multiple fronts	Medium	High
Risks relating to exchange rate fluctuations	● Impact of exchange rate fluctuations on production, sales, and other business activities as well as the company's performance and financial condition	● Configure the appropriate sales prices which anticipate exchange rate fluctuations ● Implement exchange contracts for a certain percentage of foreign currency denominated transaction amounts	Medium	High
Risks related to financing	● Lack of internal funds for investment aimed at business growth and capital requirements for working capital	● Fundraising through borrowing from banks and the issuing of domestic straight bonds	Medium	Medium
Risks related to fund management	● Impact on portfolio assets due to deteriorating conditions in financial markets	● Hold funds that are distributed across highly safe financial products	Low	Medium
Risks related to environmental regulations	● Costs increase in order to adapt to domestic and overseas environmental regulations	● Ongoing initiatives to reduce waste ● Form an environmental committee chaired by the vice president in charge and promote the undertaking of environmental measures (▶ p.71 Use of sustainable resources) (▶ p.72 Preventing pollution and managing chemical substances)	Low	Medium
Climate change related risks	● Introduction of a carbon tax and other energy cost increases (transition risks) ● Complete shutdown of major plants and raw material supply disruptions due to typhoons, heavy rainfall, and other abnormal weather (physical risks)	● Implementation of energy-saving measures and expanding the adoption of renewable energy for the reduction of CO_2 emissions ● Utilization of internal carbon pricing system ● Strengthen each initiative in accordance with TCFD and SBT guidelines (▶ P.65 Strengthening Murata's response to climate change) (▶ P.67 TCFD)	Medium	Medium
Risks related to the suspension of business activities due to disasters and infectious disease, etc.	● Long-term suspension of business activities due to the occurrence of large-scale natural disasters and the spread of infectious disease, etc. at business locations	● Place production sites in a distributed manner in domestic and overseas locations ● Implement disaster drills and business continuity drills on a regular basis ● Implement various measures to handle the novel coronavirus infection (▶ p.73 Secure and safe workplace and health management) (▶ p.79 Business continuity management (BCM))	Low	High
Strategic risks				
Risks related to fluctuations in the demand for our products	● The occurrence of surplus assets, etc. or the loss of sales opportunities due to sudden changes in the global economic situation	● Diversify risks through business development in the automotive market which has a comparatively long product life cycle ● Arrange for the appropriate production facilities and necessary staff based on medium to long-term demand forecasts ● Continuously improve production efficiency through the proactive utilization of IT technology ● Flexibly adjust production capacity and the number of working days	Medium	High
Risks related to product competitiveness (market share)	● Decrease in the company's market share after a loss of competitiveness	● Continuously release new, high value-added products ● Continuously and proactively promote cost reduction ● Develop a supply capability that is able to meet customer demand in a timely manner ● Maintain and expand our share through sales networks and other overall strengths	Medium	Medium
Risks related to dependencies on specific partners and products	● Sales decline in the event that product sales of a specific partner stagnate ● Sales decline in the event that the demand for a specific product decreases	● Partner diversification ● Earnings diversification through new businesses and other forms of expansion	Medium	Medium
Risks related to M&A, business alliances, and strategic investment	● Notable changes in the market and competitive environments and conflicting interests between business partners or incurring additional costs due to the loss of human resources and the impact of the impairment loss of goodwill and long-term assets	● Carry out a thorough risk analysis of the target market and business or the financial status of the partner company and regular verification of the corresponding matters, make course corrections as needed, and improve the effectiveness of collaboration	Medium	High

Risk categories Management foundation risks	Risk description	Primary response	Frequency of occurrence	Degree of impact
Risks related to information security	●Information leaks due to internal fraud and the suspension of corporate activities due to cyber attacks ●Impact of the exposure of private information and the violation of legal and regulatory matters	●Implement measures in terms of the three human, technical, and physical aspects based on information security management (▶P.80 Information security)	High	High
Risks related to public regulations and compliance	●Disposition by a supervisory authority due to violations of the Antimonopoly Act, export and import regulations, and other public regulations, filing of a lawsuit, suspension of business activities, and other risks, damage to the corporate brand value, and loss of social trust	●Install a Compliance Promotion Committee, enact a "Corporate Ethics Policy and Code of Conduct," and carry out compliance promotion activities (▶P.104 Compliance)	Low	High
Risks related to intellectual property	●The outbreak of an intellectual property dispute with a third party that results in restrictions on the production and sale of the Group's products, compensation for damages, licensing consent fees, and other payments	●Build a global intellectual property portfolio ●Survey and confirm the intellectual property rights of other companies at the appropriate time during design development (▶P.61 Strengthening technological capabilities for the future and underpinning)	High	Medium
Risks related to taxation	●Payment of back taxes and the resulting damage to our credit worthiness ●Dual taxation due to taxation under transfer pricing regulations	●Implement tax processing in accordance with "global tax policies" ●Establish a specialized tax organization ●Secure and train human resources with specialized knowledge and extensive experience	Medium	Medium
Risks related to the hiring and securing of human resources	●Intensified competition to acquire human resources who possess superior expertise	●Strengthen our activities to hire human resources for new markets and outstanding human resources for DX ●Implement various measures to increase employee motivation such as expanding the education system to support capability development and personnel placement emphasizing capability and aptitude (▶P.59 Murata's human capital - Strengthening human resources base and organizational capabilities -) (▶P.75 Respect for human rights and diversity)	Low	Medium
Business execution risks				
Risks related to the development of new technologies and products	●Contraction of existing markets due to technology innovation ●Impact of the shortening of the lifecycle of existing products	●Continuous and proactive implementation of the research and development investment required for new technologies and new product development (▶P.23 Message from the Director of Corporate Technology & Business Development Unit) (▶P.61 Strengthening technological capabilities for the future and underpinning intellectual property activities)	Low	High
Risks related to procurement	●Suspension of the supply of material products and price increases due to problems in the business management of a supplier, deterioration of public order, spread of infectious disease, disasters (man-made and natural), depletion of resources, etc.	●Secure adequate stock based on a material product inventory policy, shift to multiple vendors, and confirm Business Continuity Planning (BCP) by suppliers in advance ●Create a database of the production locations of material suppliers and develop a rapid recovery and response system by formulating an initial response flow	Medium	Medium
Risks relating to customer trust	●Unable to collect account receivables due to customer bankruptcy, etc.	●Partner diversification ●Configure transaction conditions that take continuous credit risk evaluation into consideration	High	Low
Risks related to quality	●The occurrence of compensation liability and loss of trust due to accidents caused by product quality, market recalls, and production suspension, etc.	●Develop a quality assurance system to observe product compliance ●Audit and provide guidance to suppliers and other collaborators ●Build in quality during every stage from development to shipping (▶P.31 Murata's monozukuri (manufacturing) which creates core competencies)	Medium	Medium

Measures for COVID-19

Amid the repeated resurgence and containment of the COVID-19, Murata has continued operations at the Group's locations around the world while focusing on the safety and health of its employees and business partners as well as provide peace of mind to everyone in the community. In response, in addition to monitoring the status of new infections, we carried out various measures to prevent infection, control the spread of infection and ensure business continuity, and with the employees' strong sense of responsibility and their behavior to prevent infection, fulfilled our responsibility to globally supply electronic components that support society and connect the supply chain.

Going forward, Murata will continue to carry out measures based on the latest status of infections and medical knowledge and engage in initiatives to minimize the impact of COVID-19 on the health of the employees and Murata's business activities.

Compliance

Murata believes that observing compliance based on legal compliance as well as a high degree of corporate ethics enhances the credibility of stakeholders and is the foundation of growth. At Murata, we strive to raise awareness of compliance among all Group officers and employees through comprehensive observance of our Corporate Ethics Policy and Code of Conduct.

Corporate Ethics Policy and Code of Conduct

Murata established the Corporate Ethics Policy and Code of Conduct in July 2002. This was revised in April 2007 to reflect a CSR perspective, and the Group's officers and employees united in promising to take appropriate actions with respect to stakeholders and society.

This revised Corporate Ethics Policy and Code of Conduct* has been translated from Japanese into English, Chinese, and other local languages and distributed to officers and employees of the Group. It was also revised and tailored to the local laws and social systems in each overseas location. In addition, the company continuously delivers global messages from the top management and conducts job-grade specific training and education to raise awareness on compliance. Furthermore, with regard to the compliance items articulated in the Corporate Ethics Policy and Code of Conduct, the company implements measures to mitigate risks according to the changes in the environment and content of business.

* For more information, please see here.
  https://corporate.murata.com/en-global/csr/governance/compliance

Compliance promotion system

At Murata, we have established a Compliance Promotion Committee, a subordinate body of the CSR Management Committee chaired by the President, which revises the Corporate Ethics Policy and Code of Conduct, formulate and implements awareness-raising activities, and deliberates and makes decisions on the basic direction to be taken in the global promotion of compliance. The matters decided by the Committee are deployed to the entire Group through persons in charge of promoting compliance appointed at affiliated companies in Japan and overseas. In addition, the Compliance Promotion Leaders, assigned at each department, raise awareness and communicate knowledge learned through the Corporate Ethics Policy and Code of Conduct and through e-learning at the compliance-promotion meetings, etc. at their respective departments.

The status of compliance promotion activities and overview and number of reported "whistleblowing" cases are reported to the Board of Directors twice a year and are also audited annually by the internal audit department to ensure an appropriate level of response.

Compliance promotion system (As of April 1, 2022)
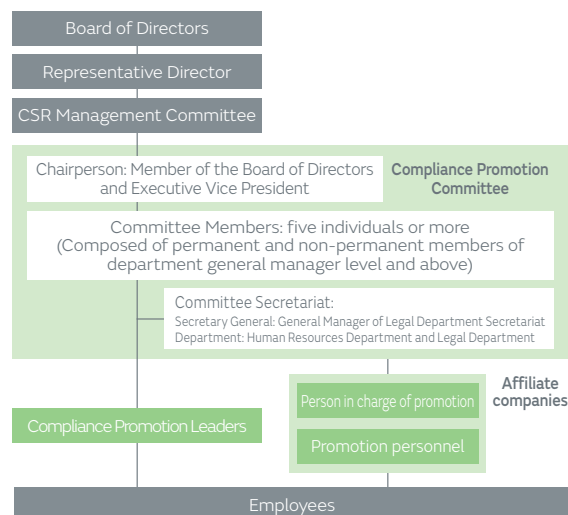
Whistle-blowing system

In order to prevent, early detect, and respond to compliance violations, Murata has introduced a whistle-blowing system within Murata Manufacturing Co., Ltd. and its domestic and overseas affiliated companies. In the event that acts such as corruption which violate or may violate ethics, laws and regulations are discovered, the whistle-blower may report or consult about such acts using their real name or anonymously. In addition to establishing internal hotlines as points of contacts for receiving reports and consultation requests, we have established external hotlines which provide support in local or multiple languages in order to prepare an environment which makes it easier to submit reports and seek consultation.

In the event that a report or consultation is received, the Compliance Promotion Committee, the Chairperson of the Committee, and the Secretariat of the Committee lead the response. Coordinating with relevant departments, they check and investigate the facts and the relevant laws and rules to the extent possible. On that basis, the existence or nonexistence of a compliance violation is recognized and response measures such as correction and recurrence prevention are taken as necessary.

In addition to protecting the anonymity and privacy of whistle-blowers, we take steps to prevent whistle-blowers from being unfairly disadvantaged by their reporting by prohibiting retaliatory actions against whistle-blowers. Feedback on the findings and details are given to the whistle-blowers in an appropriate manner.

11-year consolidated financial summary

(FY)	2011	2012	2013	2014
Business results				
Net sales (Millions of yen)	584,662	681,021	846,716	1,043,542
Operating income (Millions of yen)	44,973	58,636	125,891	214,535
Operating income / net sales (%)	7.7	8.6	14.9	20.6
Income before income taxes (Millions of yen)	50,931	59,534	132,336	238,400
Net income attributable to Murata Corporation (Millions of yen)	30,807	42,386	93,191	167,711
Shareholders' equity (Millions of yen)	808,542	860,963	955,760	1,123,090
Total assets (Millions of yen)	1,000,885	1,087,144	1,243,687	1,431,303
Net cash provided by operating activities (Millions of yen)	57,589	88,537	185,751	259,936
Net cash used in investing activities (Millions of yen)	(46,487)	(56,173)	(117,150)	(91,379)
Net cash provided by (used in) financing activities (Millions of yen)	(9,148)	(9,655)	(40,899)	(66,966)
Cash and cash equivalents at end of year (Millions of yen)	65,302	90,068	118,884	212,936
Average exchange rate (Yen/U.S. dollar)	79.07	83.11	100.24	109.94
Indices				
ROIC (pre-tax basis)[*] (%)	8.4	9.6	18.1	26.8
Shareholders' equity ratio (%)	80.8	79.2	76.8	78.5
Basic earnings attributable to Murata Corporation per share (yen)	48.12	66.94	146.88	264.06
Return on equity (ROE) (%)	3.8	5.1	10.3	16.1
Shareholders' equity per share (yen)	1,276.85	1,359.65	1,504.84	1,768.33
Cash dividends per share (yen)	33	33	43	60
Capital expenditures (Millions of yen)	68,445	77,662	68,197	101,184
Depreciation and amortization (Millions of yen)	61,008	72,323	76,884	84,935
Research and development expenses (Millions of yen)	40,978	48,766	54,649	64,990

Our consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States.
The company implemented a three-for-one common stock split, effective April 1, 2019. Information per share was calculated on the assumption that the relevant stock split had been implemented at the beginning of fiscal 2011.

* ROIC (pre-tax basis) = Operating income / Invested capital (Property, plant and equipment + Inventories + Trade accounts receivable - Trade accounts payable)

2015	2016	2017	2018	2019	2020	2021
1,210,841	1,135,524	1,371,842	1,575,026	1,534,045	1,630,193	1,812,521
275,406	201,215	163,254	266,807	253,247	313,240	424,060
22.7	17.7	11.8	16.9	16.5	19.2	23.4
279,173	200,418	167,801	267,316	254,032	316,417	432,702
203,776	156,060	146,086	206,930	183,012	237,057	314,124
1,229,159	1,354,819	1,456,600	1,603,976	1,694,104	1,920,805	2,263,596
1,517,784	1,634,999	1,797,013	2,048,893	2,250,230	2,462,261	2,809,171
252,451	243,920	225,249	279,842	350,334	373,571	421,458
(205,316)	(202,697)	(194,165)	(303,741)	(284,431)	(150,275)	(212,300)
(56,614)	(11,729)	(83,585)	51,546	17,650	(118,189)	(117,505)
212,570	239,184	187,910	217,805	302,320	407,699	512,072
120.14	108.42	110.86	110.91	108.75	106.06	112.38
30.9	21.2	14.4	18.9	16.1	18.5	22.6
81.0	82.9	81.1	78.3	75.3	78.0	80.6
320.85	244.62	228.62	323.45	286.05	370.51	490.95
17.3	12.1	10.4	13.5	11.1	13.1	15.0
1,935.35	2,122.83	2,276.82	2,507.11	2,647.88	3,002.12	3,537.80
70	73	87	93	97	115	130
172,540	158,579	306,608	291,581	281,599	196,660	152,786
99,105	113,523	141,625	124,419	140,267	143,074	155,583
77,982	81,809	94,181	101,589	102,486	101,727	111,297

Analysis of business results and financial position

Review of fiscal 2021

In fiscal 2021, demand for automotive electronics increased significantly year on year due to advancement in the electrification of automobiles and the accumulation of components inventory by customers. Additionally, demand for personal computers (PCs) continued to be steady mainly by the demand for remote work. On the other hand, demand for smartphones remained weak partly due to inventory adjustment by major customers in Greater China.

Net sales of connectivity modules for smartphones decreased. However, net sales of multilayer ceramic capacitors (MLCCs) increased significantly in the areas of computers and peripherals and automotive electronics. Further, net sales of lithium-ion secondary batteries for power tools increased. Net sales for fiscal 2021 increased by 11.2% year on year to 1,812.5 billion yen, marking a record high, boosted in part by the effects of the depreciating yen.

Looking at profits, performance was posi-tively contributed to by production increase and cost reduction, and the depreciation of the yen, despite an increase in produc-tion-related expenses driven by production growth. As a result, operating income was 424.1 billion yen, up 35.4% from the pre-vious fiscal year, income before income taxes was 432.7 billion yen, up 36.8% from the above-mentioned period, and net in-come attributable to shareholders of the company was 314.1 billion yen, up 32.5% from the above-mentioned period. We marked a record high in each profit level.

ROIC (Return on Invested Capital) (pre-tax basis)* is established as a priority management index in "Medium-term Direction 2021." In fiscal 2021, ROIC (pre-tax basis) increased 4.1 points year on year to 22.6% due to large growth in operating income, despite an increase in invested capital as a result of building up inventories with an eye on demand for electronic components in the next fiscal year.

* ROIC (pre-tax basis) = Operating income / Invested capital (Property, plant and equipment + Inventories + Trade accounts receivable - Trade accounts payable)

● **Actual increases and decreases in operating income** (Billion yen)

Fiscal 2020 Operating income 313.2

Cost reduction (estimate) +46.0

Production increase (estimate) +117.0

Price decline (estimate) −32.0

Exchange rate (estimate) +38.0

Increase of depreciation expenses −12.5

Decrease of semi variable cost and other fixed cost −64.0

Others (product mix, etc.) +18.4

Fiscal 2021 Operating income 424.1

JPY/US$: 106.06 yen (Fiscal 2020) → 112.38 yen (Fiscal 2021)
Sensitivity: Approximately 6.0 BJPY per 1 JPY/US$ change per year
Production: 1,637.0 billion yen (Fiscal 2020) → 1,880.0 billion yen (Fiscal 2021)

Sales by product

(Billion yen)

	FY2020 results	FY2021 results	Increase/ decrease	Reasons for increase/decrease
Capacitors	626.5	785.3	+158.7 (+25.3%)	Sales increased year on year, as sales of MLCCs increased not only for PCs, against the background of demand for remote work and online education, but also for automo-tive electronics due to advancement in electrification of automobiles and the ac-cumulation of components inventory by customers.
Piezoelectric components	129.3	138.4	+9.1 (+7.0%)	Sales increased year on year, as sales of piezoelectric sensors grew for HDDs, and sales of resonators expanded for a broad range of applications.
Other components	387.6	460.4	+72.8 (+18.8%)	Sales increased year on year, as sales of lithium-ion secondary batteries for power tools increased significantly, as well as sales of inductors for PCs and automotive electronics increased.
Modules	484.1	425.6	−58.5 (−12.1%)	Sales decreased year on year, as sales of connectivity modules decreased for smartphones due to the restructuring of product portfolios, and sales of Multilayer resin substrates (Multilayer LCP Product) substrates also fell for communication devices.

Sales by application

(Billion yen)

	FY2020 results	FY2021 results	Increase/ decrease	Reasons for increase/decrease
Audiovisual	71.9	71.5	-0.4 (-0.6%)	Sales decreased compared to the previous fiscal year, as sales of MLCCs decreased for set-top boxes, although sales of lithium-ion secondary batteries for digital cameras increased.
Communication	804.9	779.2	-25.7 (-3.2%)	Sales decreased from the previous fiscal year, as sales of MLCCs for smartphones increased but sales of connectivity modules decreased as a result of a revision to the business portfolio for the above application, while sales of RF modules also decreased.
Computers and peripherals	291.5	360.4	+68.9 (+23.6%)	Sales increased from the previous fiscal year, as sales of MLCCs and inductors for PCs and servers increased significantly.
Automotive Electronics	273.2	336.3	+63.1 (+23.1%)	Sales increased from the previous fiscal year, as sales of MLCCs increased significantly due to demand generated by advancement in the electrification of automobiles and the accumulation of components inventory by customers. Sales of EMI suppression filters and inductors also increased.
Home appliance and others	186.1	262.2	+76.1 (+40.9%)	Sales increased from the previous fiscal year, as sales of lithium-ion secondary batteries for power tools increased significantly and sales of MLCCs for distributors increased.

(Note) The above figures are based on our estimates.

Overview of financial conditions

(Billion yen)

	FY2020 results	FY2021 results	Increase/ decrease	Reasons for increase/decrease
Assets	2,462.3	2,809.2	+346.9 (+14.1%)	Assets increased from the end of the previous fiscal year, mainly due to increases in short-term investments and inventories.
Liabilities	540.6	545.3	+4.7 (+0.9%)	Liabilities increased from the end of the previous fiscal year, due to increases in income taxes payable and trade accounts payable, despite a decrease due to the redemption of bonds.
Equity	1,921.6	2,263.9	+342.3 (+17.8%)	Equity increased from the end of the previous fiscal year, mainly due to an increase in retained earnings.

Cash flows

(Billion yen)

	FY2020 results	FY2021 results	Increase/ decrease	Reasons for increase/decrease
Net cash provided by operating activities	373.6	421.5	+47.9 (+12.8%)	Net cash provided by operating activities was 421.5 billion yen, mainly due to an increase of 81.4 billion yen in inventories, net income of 313.9 billion yen and depreciation and amortization of 155.6 billion yen.
Net cash used in investing activities	-150.3	-212.3	-62.0 (-)	Net cash used in investing activities was 212.3 billion yen. There were cash outflows of 150.5 billion yen for payment for pur-chases of property, plant and equipment aimed at boosting production capacity and 48.8 billion yen in the acquisition of busi-nesses.
Net cash used in financing activities	-118.2	-117.5	+0.7 (-)	Net cash used in financing activities was 117.5 billion yen. There were cash outflows due to dividend payment of 76.8 billion yen and 40.0 billion yen in the redemption of bonds.

Overview of segment information

(Billion yen)

		FY2020 results	FY2021 results	Increase/decrease	Reasons for increase/decrease
Components	Net sales	1,175.4	1,416.6	+241.2 (+20.5%)	Net sales and segment income both increased due to significant increases in sales of capacitors and inductors.
	Segment income	313.0	452.6	+139.6 (+44.6%)	
Modules	Net sales	484.1	425.6	-58.5 (-12.1%)	Net sales and segment income both decreased due to a decrease in sales of connectivity modules as a result of a revision to the business portfolio, and sales of Multilayer resin substrates (Multilayer LCP Product) substrates and RF modules also fell.
	Segment income	54.3	38.5	-15.8 (-29.0%)	
Others	Net sales	61.1	61.3	+0.2 (+0.3%)	—
	Segment income	7.8	6.9	-0.8 (-10.7%)	
Corporate and eliminations	Net sales	-90.4	-90.9	-0.5 (-)	Expenses increased overall due to an increase in expenses in conjunction with the expansion of the business scale.
	Corporate expenses	-61.8	-74.0	-12.2 (-)	
Consolidated	Net sales	1,630.2	1,812.5	+182.3 (+11.2%)	—
	Operating income	3,132	4,241	+1,108 (+35.4%)	

Consolidated Balance Sheets

(Millions of yen)

	End of FY2020 March 31, 2021	End of FY2021 March 31, 2022
Assets		
Current assets	1,184,180	1,435,206
Cash	363,979	370,388
Short-term investments	64,218	174,074
Marketable securities	22,599	23,979
Trade notes receivable	25	0
Trade accounts receivable	342,260	360,517
Allowance for doubtful notes and accounts	(1,414)	(2,207)
Inventories	361,331	464,723
Prepaid expenses and other	31,182	43,732
Property, plant and equipment	1,078,838	1,116,602
Land	73,359	81,213
Buildings	741,346	789,142
Machinery, and equipment, tools, dies, furniture and autos and trucks	1,418,356	1,530,121
Construction in progress	100,277	89,723
Accumulated depreciation	(1,286,598)	(1,405,460)
Operating lease right-of-use assets	32,098	31,863
Investments and other assets	199,243	257,363
Investments	41,438	34,618
Intangible assets	33,524	47,141
Goodwill	71,058	118,014
Deferred income taxes	37,796	26,562
Other	15,427	31,028
Total assets	2,462,261	2,809,171
Liabilities		
Current liabilities	317,911	321,258
Short-term borrowing	97	—
Trade accounts payable	85,927	93,842
Current portion of bonds	39,982	—
Accrued payroll and bonuses	52,909	63,997
Income taxes payable	41,525	59,228
Accrued expenses and other	90,516	97,816
Current operating lease liabilities	6,955	6,375
Long-term liabilities	222,705	224,001
Bonds	109,853	109,901
Long-term debt	772	1,078
Termination and retirement benefits	74,005	64,566
Deferred income taxes	7,603	13,233
Noncurrent operating lease liabilities	25,051	25,627
Other	5,421	9,596
Total liabilities	540,616	545,259
Equity		
Murata Corporation's Shareholders' equity	1,920,805	2,263,596
Common stock	69,444	69,444
Capital surplus	120,880	121,004
Retained earnings	1,786,660	2,024,368
Accumulated other comprehensive income (loss)	(2,627)	102,318
Unrealized gains on securities	(32)	(43)
Pension liability adjustments	(14,814)	(1,963)
Foreign currency translation adjustments	12,219	104,324
Treasury stock, at cost	(53,552)	(53,538)
Noncontrolling interests	840	316
Total equity	1,921,645	2,263,912
Total liabilities and equity	2,462,261	2,809,171

Consolidated Statements of Income

(Millions of yen)

	FY2020 April 1, 2020 - March 31, 2021	FY2021 April 1, 2021 - March 31, 2022
Net sales	1,630,193	1,812,521
Cost of sales	1,007,992	1,044,292
Selling, general and administrative	203,680	232,872
Research and development	101,727	111,297
Impairment losses on goodwill	3,554	—
Operating income	313,240	424,060
Interest and dividend income	1,667	1,193
Interest expense	(384)	(318)
Foreign currency exchange gain (loss)	(10,237)	263
Other - net	12,131	7,504
Income before income taxes	316,417	432,702
Income taxes	79,392	118,823
<Current income tax>	<80,476>	<116,610>
<Deferred income tax>	<(1,084)>	<2,213>
Net income	237,025	313,879
Less: Net income (loss) attributable to noncontrolling interests	(32)	(245)
Net income attributable to shareholders of the company	237,057	314,124

Consolidated Statements of Comprehensive Income

(Millions of yen)

	FY2020 April 1, 2020 - March 31, 2021	FY2021 April 1, 2021 - March 31, 2022
Net income	237,025	313,879
Other comprehensive income (loss), net of tax		
Unrealized gains on securities	29	(11)
Pension liability adjustments	11,185	12,851
Foreign currency translation adjustments	45,568	92,224
Other comprehensive income (loss)	56,782	105,064
Comprehensive income	293,807	418,943
Less: Comprehensive income (loss) attributable to noncontrolling interests	41	(126)
Comprehensive income attributable to Murata Corporation	293,766	419,069

Consolidated Statements of Cash Flows

(Millions of yen)

	FY2020 April 1, 2020 - March 31, 2021	FY2021 April 1, 2021 - March 31, 2022
Operating activities		
Net income	237,025	313,879
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	143,074	155,583
Losses on sales and disposals of property, plant and equipment	1,054	911
Impairment losses on long-lived assets	1,531	2,526
Impairment losses on goodwill	3,554	—
Provision for termination and retirement benefits, less payments	4,918	(5,059)
Deferred income taxes	(1,084)	2,213
Changes in assets and liabilities		
(Increase) decrease in trade notes and ac-counts receivable	(42,560)	11,637
(Increase) decrease in inventories	(16,027)	(81,363)
(Increase) decrease in prepaid expenses and other	4,644	(9,857)
Increase (decrease) in trade notes and accounts payable	4,353	3,507
Increase (decrease) in accrued payroll and bonuses	6,986	9,081
Increase (decrease) in income taxes payable	12,636	16,601
Increase (decrease) in accrued expenses and other	19,755	914
Other - net	(6,288)	885
Net cash provided by operating activities	373,571	421,458
Investing activities		
Payment for purchases of property, plant and equipment	(199,876)	(150,531)
Payment for purchases of marketable securities, investments, and other	(26,542)	(38,941)
Maturities and sales of marketable securities, investments, and other	42,705	34,335
Increase in long-term deposits and loans	—	(81)
Decrease in long-term deposits and loans	5,827	5,476
(Increase) decrease in short-term investments	23,299	(16,689)
Acquisition of businesses, net of cash ac-quired	—	(48,802)
Other - net	4,312	2,933
Net cash used in investing activities	(150,275)	(212,300)
Financing activities		
Net increase (decrease) in short-term borrowing	(50,908)	(91)
Proceeds from long-term debt	249	357
Repayment of long-term debt	(136)	(6)
Repayment of bonds	—	(40,000)
Dividends paid	(67,180)	(76,779)
Other - net	(214)	(986)
Net cash used in financing activities	(118,189)	(117,505)
Effect of exchange rate changes on cash and cash equivalents	272	12,720
Net increase (decrease) in cash and cash equivalents	105,379	104,373
Cash and cash equivalents at beginning of year	302,320	407,699
Cash and cash equivalents at end of year	407,699	512,072
Additional cash and cash equivalents information		
Cash	363,979	370,388
Short-term investments	64,218	174,074
Short-term investments with the original maturities over three months	(20,498)	(32,390)
Cash and cash equivalents at end of year	407,699	512,072

ESG data

Included range: Consolidated: the Murata Manufacturing Group as a whole Non-consolidated: Murata Manufacturing as a standalone company

			Unit	FY2017	FY2018	FY2019	FY2020	FY2021	Included range
Environment	GHG emissions	Total GHG emissions	t-CO_2e	5,660,000	6,074,000	5,979,000	5,237,000	5,762,000	Consolidated
		Scope1	t-CO_2e	251,000	312,000	307,000	278,000	260,000	Consolidated
		Scope2[*1]	t-CO_2	1,149,000	1,320,000	1,302,000	1,157,000	1,140,000	Consolidated
		Scope3	t-CO_2	4,260,000	4,442,000	4,371,000	3,801,000	4,362,000	Consolidated
		Category 1: Purchased goods and services	t-CO_2	3,201,000	3,380,000	3,262,000	2,883,000	2,530,000	Consolidated
		Category 2: Capital goods	t-CO_2	754,000	717,000	693,000	484,000	519,000	Consolidated
		Category 3: Fuel-and-energy-related activities not included in Scope 1 or Scope 2	t-CO_2	74,000	95,300	178,000	197,000	229,000	Consolidated
		Category 4: Upstream transportation and distribution	t-CO_2	152,000	163,000	174,000	159,000	382,000	Consolidated
		Category 5: Waste generated in operations	t-CO_2	35,000	42,000	20,000	34,000	22,000	Consolidated
		Category 6: Business travel	t-CO_2	9,800	10,000	9,600	9,800	20,000	Consolidated
		Category 7: Employee commuting	t-CO_2	34,000	35,000	33,000	35,000	36,000	Consolidated
		Category 8: Upstream leased assets	t-CO_2	–	–	–	–	500	Consolidated
		Category 10: Processing of sold products	t-CO_2	–	–	–	–	77,000	Consolidated
		Category 11: Use of sold products	t-CO_2	–	–	–	–	523,000	Consolidated
		Category 12: End-of-life treatment of sold products	t-CO_2	330	350	320	290	9,000	Consolidated
		Category 15: Investments	t-CO_2	–	–	–	–	14,000	Consolidated
		Percentage of GHG emissions by region							Consolidated
		Japan	%	70	68	66	77	75	Consolidated
		China	%	19	21	21	9	17	Consolidated
		Asia	%	10	11	12	13	7	Consolidated
		Europe	%	1	0	1	1	1	Consolidated
		Total energy consumption[*2]	TWh	6.49	7.72	7.81	8.07	8.65	Consolidated
		Non-renewable fuel consumption (fossil fuel, coal, oil, natural gas, etc.) (A)	MWh	819,000	919,000	916,000	985,000	867,000	Consolidated
		Non-renewable energy consumption (Steam, heat, cooling) (B)	MWh	110,000	168,000	164,000	208,000	248,000	Consolidated
		Non-renewable electricity consumption (C)	MWh	2,067,000	2,443,000	2,321,000	2,168,000	2,194,000	Consolidated
		Total consumption of non-renewable energy (A+B+C)	MWh	2,996,000	3,530,000	3,401,000	3,361,000	3,309,000	Consolidated
		Renewable electricity consumption (wind, solar, biomass, hydraulic, geothermal, etc.) (D)	MWh	30	23,000	35,000	396,000	593,000	Consolidated
		Total electricity consumption (C+D)	MWh	2,067,030	2,466,000	2,356,000	2,564,000	2,786,000	Consolidated
		Renewable energy ratio (D/(C+D))	%	0	0.9	1.5	15.4	21.3	Consolidated
	Emissions of air polluting substances	Volume of use of Volatile Organic Compound (VOC)	t	25,900	27,800	23,100	27,200	32,400	Consolidated (domestic)
		Volume of discharge of Volatile Organic Compound (VOC)	t	1,100	1,100	1,240	1,150	1,320	Consolidated (domestic)
		Volume of transportation of Volatile Organic Compound (VOC)	%	4.2	3.9	5.4	4.2	4.1	Consolidated (domestic)
	Waste management	Total emissions volume	t	95,000	132,000	108,000	105,000	102,000	Consolidated
		Recycling rate	%	94	92	95	98	96	Consolidated
		Hazardous waste volume[*3]	t	39,000	62,000	52,000	43,000	33,000	Consolidated
		Comparative waste intensity (Baseline: FY2016-2018 per-unit average)	%	-4	24	16	0	-12	Consolidated
	Water resource management	Water intake volume	1,000 m³	17,400	19,400	18,500	17,900	18,400	Consolidated
		Municipal water supply (or from other water supply facilities)	1,000 m³	11,600	13,100	12,400	12,800	13,400	Consolidated
		Freshwater and groundwater	1,000 m³	5,700	6,300	6,100	5,100	4,900	Consolidated
		Wastewater discharge	1,000 m³	14,600	15,000	14,800	15,600	15,300	Consolidated
		Volume consumed	1,000 m³	2,700	4,400	3,600	2,300	3,000	Consolidated
		Recycling rate[*4]	%	19	20	20	21	21	Consolidated
		Comparative water resource intensity (Baseline: FY2016-2018 per-unit average)	%	-6	-2	2	-4	-16	Consolidated
	Environmental violations	Accidents and significant exceeding of laws and regulations	cases	0	0	0	0	0	Consolidated
	Related to environmental accounting	Environmental and energy investments	million yen	2,200	4,000	4,000	1,900	1,800	Consolidated
		Environmental and energy business expenditures	million yen	5,500	6,000	6,100	7,200	8,600	Consolidated
		Economic effects per year due to environmental burden reductions	million yen	780	690	650	430	1,110	Consolidated
	ISO 14001 acquisition	Certification rate (Targets are Murata Manufacturing Co., Ltd. on a non-consolidated basis and production site)	%	95	95	95	96	100	Consolidated

* Amounts less than the specified unit are rounded off, so the breakdown and total may not match.
*1: Market-based method of CO2 calcula-tion was adopted in place of location-based method in fiscal 2019.
*2: The total amount of purchased power converted into primary energy
*3: Waste as defined by the laws of each country. In Japan, it refers to specially controlled industrial waste.
*4: Calculated by dividing recycled volume by the sum of recycled volume and water intake volume.

			Unit	FY2017	FY2018	FY2019	FY2020	FY2021	Included range
Society	Attracting and cultivating human resources	General employee education (number of e-learning registrants)	persons	26,877	30,783	32,962	33,975	35,116	Consolidated
		Training results by class	persons	3,637	4,332	5,245	4,590	6,690	Consolidated (domestic)
		Employee education expenses	million yen	1,438	1,476	1,463	1,012	1,363	Consolidated
		Total overseas local employees using the deployment system to affiliated companies in Japan and other countries	persons	616	737	876	958	998	Consolidated
	Diversity & Inclusion	Number of employees (consolidated)	persons	75,326	77,571	74,109	75,184	77,581	Consolidated
		Ratio of women among all employees	%	50.4	49.2	47.6	47.8	47.4	Consolidated
		Number of management staff[*1]	persons	543	625	656	712	749	Non-consolidated
		Ratio of female management staff	%	0.9	0.8	1.5	1.8	2.4	Non-consolidated
		Number of management staff at the level of department head and above (included in the number of management staff)	persons	125	145	158	156	153	Non-consolidated
		Men	persons	125	145	158	155	152	Non-consolidated
		Women	persons	0	0	0	1	1	Non-consolidated
		Ratio of employees with disabilities	%	1.92	1.88	2.32	2.33	2.37	Non-consolidated

			Unit	FY2017	FY2018	FY2019	FY2020	FY2021	Included range
Society	Diversity & Inclusion	Number of recent graduate hires	persons	294	341	399	447	335	Non-consolidated
		Ratio of women	%	28.6	30.2	36.6	36.9	36.1	Non-consolidated
		Number of mid-career hires	persons	363	428	224	121	168	Non-consolidated
		Ratio of women	%	7.4	9.1	9.8	12.4	19.0	Non-consolidated
		Ratio of mid-career hires among all hires	%	55.3	55.7	36.0	21.3	33.4	Non-consolidated
		Average number of years continuously employed	year	14.4	14.1	14.9	14.7	14.3	Non-consolidated
		Men	year	14.7	14.4	15.2	15.1	14.7	Non-consolidated
		Women	year	13.2	13.0	14.0	13.2	12.7	Non-consolidated
		Voluntary turnover rate	%	1.5	1.6	1.3	1.5	1.5	Consolidated (domestic)
		Average age	age	40.1	40.0	41.0	40.1	40.1	Non-consolidated
		Men	age	41.0	40.8	41.8	41.1	41.2	Non-consolidated
		Women	age	36.7	36.6	37.7	36.5	36.5	Non-consolidated
		Paid leave utilization rate	%	69.3	69.2	73.3	74.4	67.1	Non-consolidated
	Work safety and hygiene	Number of serious incidents[3]	–	0.44	0.15	0.42	0.30	0.35	Consolidated[5]
		Number of serious incidents[3]	cases	2	0	0	0	0	Consolidated
		Number of industrial accidents resulting lost workdays	cases	24	9	58	48	56	Consolidated[5]
		Industrial accident rate per 1,000 workers[4] — All employees	–	2.51	2.58	2.12	1.56	1.70	Consolidated
		Industrial accident rate per 1,000 workers[4] — Full-time employee, temporary employee	–	2.51	2.56	2.06	1.31	1.59	Consolidated
		Industrial accident rate per 1,000 workers[4] — Contract employee	–	2.48	2.89	2.87	4.22	2.85	Consolidated
		ISO 45001 certification rate (Targets are Murata Manufacturing Co., Ltd. on a non-consolidated basis and production site)	%	65	66	64	82	82	Consolidated
	Contributions to society/Community	Total social contribution expense	million yen	–	–	167	215	295	Non-consolidated
				–	–	–	–	588	Consolidated
	Social contribution activities	Total number of volunteering employees	persons	–	–	17,088	8,027	14,288	Consolidated
		Support for the development of the next generation	cases	–	–	–	146	254	Consolidated
		Local community support	cases	–	–	–	270	400	Consolidated
		Environmental protection	cases	–	–	–	22	60	Consolidated
		Cultural support (sports, arts, and traditional industries)	cases	–	–	–	13	59	Consolidated
		The visiting class to experiential programming	cases	–	–	–	16	74	Consolidated
		Others	cases	–	–	–	24	69	Consolidated

*1: Number of management staff...Includes expert managerial positions from fiscal 2020.
*2: Work accident (accidents requiring work stoppage) frequency...The number of injuries and fatalities per million cumulative hours worked. Represents the frequency of accidents.
*3: Number of serious incidents...Represents the number of serious industrial accidents that led to death or after-effects.
*4: Industrial accident rate per 1,000 workers...Represents the ratio of the number of injuries and fatalities per 1,000 workers per year. At Murata, the number of occurrences is managed including both accidents that require time off from work and those that do not.
*5: The included range until fiscal 2018 was consolidated (domestic) companies. Since fiscal 2019, the overseas offices have also been included in the calculations.

			Unit	As of June 29, 2022
Governance	Composition of the Board of Directors	Number of members	persons	10
		Outside Directors	persons	5
		Outside Directors appointed as Independent Directors	persons	5
		Inside Directors	persons	5
		Ratio of Outside Directors	%	50.0
		Female Directors	persons	2
		Ratio of female Directors	%	20.0
	Composition of Audit and Supervisory Committee	Number of members	persons	4
		Outside Directors	persons	3
	Composition of Nomination Advisory Committee	Committee Chairperson	–	Inside Director
		Number of members	persons	5
		Outside Directors	persons	3
	Composition of Remuneration Advisory Committee	Inside Director	–	Outside Director
		Number of members	persons	5
		Outside Directors	persons	3

			Unit	FY2021
	Number of meetings, etc	Number of meetings of the Board of Directors	times	12
		Board of Directors meeting attendance rate	%	95.2
		Board of Directors meeting attendance rate for Outside Directors	%	100.0
		Number of meetings of the Audit and Supervisory Committee	times	10
		Audit and Supervisory Committee meeting attendance rate	%	100.0
		Number of meetings of the Nomination Advisory Committee	times	4
		Number of meetings of the Remuneration Advisory Committee	times	9

CSR-related policy list

CSR Charter/Corporate Ethics Policy and Code of Conduct/Human Rights and Labor Policies/EHS Disaster Prevention Policy/Procurement Policy/Quality Policy/Disclosure Policy/Basic Policy for Activities to Contribute to Society and Local Communities/Basic Policy for Prevention of Cartels and Bribery/Global Tax Policy

For other data, please see:	ESG data collection	https://corporate.murata.com/en-global/csr/esg_data
	GRI Standards reference table	https://corporate.murata.com/en-global/csr/gri
	SASB reference table	https://corporate.murata.com/en-global/csr/sasb

Company data

Company overview (as of March 31, 2022)

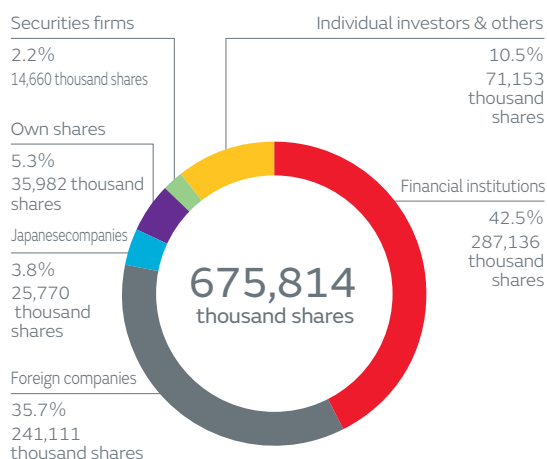|	
Trade name	Murata Manufacturing Co., Ltd.
Date of incorporation	December 23, 1950 (established in October 1944)
Common stock	69,444 million yen
Location	10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555
Subsidiaries in Japan	30 companies
Subsidiaries outside of Japan	59 companies

Stock information (as of March 31, 2022)

Stock data

Number of shares outstanding	675,814 thousand shares
Number of shareholders	138,213 persons

Stock exchange listing

Japan	Tokyo Stock Exchange Prime Market
Overseas	Singapore Exchange

Ownership breakdown

Securities firms
2.2%
14,660 thousand shares

Individual investors & others
10.5%
71,153 thousand shares

Own shares
5.3%
35,982 thousand shares

Financial institutions
42.5%
287,136 thousand shares

Japanesecompanies
3.8%
25,770 thousand shares

Foreign companies
35.7%
241,111 thousand shares

675,814 thousand shares

Major shareholders

Name	Number of shares (unit: one thousand)	Ownership (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	110,310	17.2
Custody Bank of Japan, Ltd. (Trust Account)	45,220	7.1
SSBTC CLIENT OMNIBUS ACCOUNT	16,660	2.6
Nippon Life Insurance Company	16,562	2.6
The Bank of Kyoto, Ltd.	15,780	2.5
Meiji Yasuda Life Insurance Company	15,722	2.5
STATE STREET BANK WEST CLIENT-TREATY 505234	9,935	1.6
The Shiga Bank, Ltd.	9,153	1.4
Mizuho Bank, Ltd.	8,297	1.3
THE BANK OF NEW YORK MELLON 140042	8,154	1.3

(Note) The Company holds 35,982 thousand shares of its own stock. As these shares do not confer voting rights, they are excluded from the above table.