Murata value report 2020
The Murata Philosophy was established in 1954 by our founder, Akira Murata, so that all employees can walk toward the future with a common spirit. The philosophy is the culmination of his effort to put together and summarize what he had in mind and his passion from the time of Murata’s foundation until 1953.

What am I working for?
What should Murata be in the future?
A compass that helps all employees, including executives, rethink their own actions and face the direction in which they should move in times of rapid change. This is the meaning of the Murata Philosophy.

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.

A future woven by Murata’s DNA

“A company is generally defined as an entity set up primarily for the purpose of making profit. In today’s society, many companies are looking beyond just the profits and working together with like-minded companies to help the world’s culture advance and develop. Given the current situations we see, one would have a narrow view of life if they did not feel the need to contribute to society. Likewise, a company cannot grow without contributing to its local community and society at large.

Such a thought led me to believe that a company can have its raison d’être only if it contributes to its society, and it should earn profit proportional to the degree of its contribution. I thus established our founding spirit that we shall find joy and pride in contributing to our society.

Contributing to society means devoting yourself to somehow improve society and one’s community. Working for Murata must directly mean devoting yourself to society and people.”

February 1953 Akira Murata

The Murata Philosophy was established in 1954 by our founder, Akira Murata, so that all employees can walk toward the future with a common spirit. The philosophy is the culmination of his effort to put together and summarize what he had in mind and his passion from the time of Murata’s foundation until 1953.

What am I working for?
What should Murata be in the future?
A compass that helps all employees, including executives, rethink their own actions and face the direction in which they should move in times of rapid change. This is the meaning of the Murata Philosophy.
Each employee takes on challenges for change as a reformer

“To innovate is to pioneer. We must always proactively drive things forward with a pioneering spirit.”

This was a message Akira gave to all employees in 1961. The pioneer spirit is what has enabled Murata to overcome all kinds of hardship. Innovation in electronics has almost infinite potential. Therefore, we hope that each one of us will take on challenges for change as a reformer and working for Murata will bring about positive changes for our society.

Murata’s identity “Innovator in Electronics” is shared among all Murata employees around the world. This slogan reflects our aim to become a leading innovator in the electronics industry.

Let’s take mobile phones as an example. In 1992, the “Communications” was first included in our reportable product categories. Murata has continually responded to society’s evolving needs by providing the required design enhancements, such as small, high-performance components to the fast-growing mobile phone market. What made this possible was the passion to do what is good “for society and people” as a reformer, which has been carried on since the foundation of Murata. Communications equipment, such as mobile phones and smartphones, are filled with Murata’s technologies and passion.

Weaving the future with ideas and a spirit to take on challenges

We will inherit the passion embodied in the Murata Philosophy and continue to take on challenges to make our future better.
Amid significant change in the electronics market, Tsuneo Murata assumed office as Murata’s Chairman of the Board and Norio Nakajima assumed office as President in June 2020.

In order for us to continue to grow sustainably together with our society, we must consciously operate businesses that harmonize with our stakeholders, while incorporating into our business strategies the solutions for social issues that only Murata can offer.

With all employees working together to preserve and pass down the spirit of the Murata Philosophy that has been inherited from the founder, we at Murata aim to contribute to the development of our culture by continuing our efforts to put into practice the slogan of “Innovator in Electronics,” which reflects our wish to become a leading innovator in the electronics industry.

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**Message from Chairman of the Board**

President reflects our wish to become a leading innovator in the electronics industry. As Chairman of the Board, our efforts to put into practice the slogan of “Innovator in Electronics,” which has been inherited from the founder, we at Murata aim to contribute to the development of our culture by continuing our efforts to put into practice the slogan of “Innovator in Electronics,” which reflects our wish to become a leading innovator in the electronics industry.

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**Message from the President**

Amid significant change in the electronics market, Tsuneo Murata assumed office as the Chairman of the Board in June 2020.

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**Editorial policy**

Murata Manufacturing Co., Ltd. published its Environmental Report in 2002, and has been disseminating the company’s information since 2010 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 an “Integrated Report” from 2018 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 Responsibility) activities that the company has been continuously implementing are described as resource strategies 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 are posted on the Murata website. Please refer to the tool map below to obtain the required information.

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**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 environmental activities can be found on our website. We will continue to proactively disclose information to allow our stakeholders to better understand Murata.

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**Reference guidelines**

- GRI (Global Reporting Initiative)
- 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, plans and targets**

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.

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**Term of this report**

Between April 1, 2019 and March 31, 2020

Some activities taking place in or before 2019 or in or after April 2020 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)

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**Main disclosure tools**

- Financial information
  - Historical financial data
  - Annual securities reports
  - Financial results
  - Earnings release conference materials
- Nonfinancial information
  - Compliance
  - Messages from Outside Directors
  - CSR-related policy list
- Tool map

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**Corporate website**

- Top page: https://corporate.murata.com/en-global/
- Nonfinancial information: https://corporate.murata.com/en-global/csr
The evolution of electronics has been enriching people’s lives and realizing various dreams.
Murata has contributed to the evolution of products and the expansion of the electronics market by foreseeing the future and tenaciously refining its technologies under the motto, “good electronic equipment starts with good electronic components and good electronic components start with good materials.”

**History of value provision**

The evolution of electronics has been enriching people’s lives and realizing various dreams.

Murata has contributed to the evolution of products and the expansion of the electronics market by foreseeing the future and tenaciously refining its technologies under the motto, “good electronic equipment starts with good electronic components and good electronic components start with good materials.”

**TOPICS**

Compared to mobile phones used in the 1990s, the thickness, volume, and weight of smartphones used in 2017 are 1/3, 1/2.5, and 1/2, respectively; however, the number of components used has tripled. Murata has supported the evolution of smartphones, which have become lighter, thinner, and more functional, by realizing further miniaturization, increased functionality, and high-density mounting of components. Representative products include multilayer ceramic capacitors and inductors for high-frequency circuits. Murata has also developed communication modules that combine multiple components in anticipation of the trend toward space-saving and multi-functionalization.

**1940s**
- **Establishment**
  - The spread of communications equipment after the start of commercial radio broadcasting

**1950s**
- **Emergence of the transistor radio**
  - Beginning of the miniaturization and weight reduction of equipment

**1960s**
- **Launch of color television broadcasting and increased demand for electronic components as the Tokyo Olympics drove economic growth**
  - 1962: Commercialization of ceramic filters for communications equipment
  - 1966: Launch of multilayer ceramic capacitors
  - 1967–69: Establishment of a mass production system for multilayer ceramic capacitors

**1970s–1980s**
- **Emergence of car phones, mobile music players with stereo headphones, and CDs**
  - Contributing to making information personal and portable
  - 1975: Launch of GIGAFIL dielectric microwave filter
  - 1977: Commercialization of ceramic resonator CERALOCK
  - Around 1986: Commercialization of chip ferrite beads
  - 1989: Commercialization of multilayer LC filters

**1990s–2000s**
- **Arrival of the age of the Internet owing to the miniaturization of mobile phones and the spread of personal computers**
  - 1997: Around: Commercialization of SWITCHPLEXER
  - 2000: Around: Commercialization of Bluetooth® modules
  - 2004: Development of multilayer ceramic capacitors in 0402 (0.4×0.2mm) size
  - 2005: Commercialization of MEMS gyro sensors

**2010s**
- **Multi-functionalization of smartphones**
  - Changes in the way we communicate.
  - 2012: Development of multilayer ceramic capacitor in 0201 (0.25×0.125mm) size
  - 2016: Development of the world’s first inductor in 0201 size
  - 2017: Commercialization of hybrid multiplexer for smartphone wireless circuits

**2020s–**
- **Arrival of the 5G era and progress in vehicle electrification**
- Murata will continue to contribute to the growing trend toward multi-functionalization of electronic devices and the development of society as a result of such trends.

**Multilayer ceramic capacitors**
- PTC thermostors "POSISTOR"
- Barium titanate ceramic capacitor

**GIGAFIL dielectric for microwave filters**
- Bluetooth® modules

**Barium titanate ceramic capacitors**
- Multilayer ceramic capacitors

**Net sales**
- Number of employees at the end of the year

*Bluetooth is a trademark of Bluetooth SIG, Inc.*
Murata products

Murata electronic components contribute to enriching people’s lives through their use in all sorts of electronic devices in everyday life, including televisions, PCs, and smartphones. Murata will also continue offering new value as an innovator in the growing electronics fields such as automobiles with mobility features and electric based propulsion energy, IoT, healthcare and medical.

Quantity used and global share of Murata products

<table>
<thead>
<tr>
<th>Chip multilayer ceramic capacitors</th>
<th>Murata’s global share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indispensable to electronic circuits, these components serve to store and adjust flows of electricity.</td>
<td>40%</td>
</tr>
<tr>
<td>Quantity used</td>
<td>Smartphone</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q: 1,000 P: 8,000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SAW filters</th>
<th>Murata’s global share</th>
</tr>
</thead>
<tbody>
<tr>
<td>The filters that extract only the required portion of a radio signal are key devices in high frequency circuits.</td>
<td>50%</td>
</tr>
<tr>
<td>Quantity used</td>
<td>Smartphone</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q: 70 P: —</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Noise suppression products EMI suppression filters</th>
<th>Murata’s global share</th>
</tr>
</thead>
<tbody>
<tr>
<td>These components eliminate external noise and protect delicate electronic circuits.</td>
<td>35%</td>
</tr>
<tr>
<td>Quantity used</td>
<td>Smartphone</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q: 100 P: 200</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radio frequency (RF) inductors</th>
<th>Murata’s global share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic components that work in various ways by making electricity and magnetism interact with each other.</td>
<td>30%</td>
</tr>
<tr>
<td>Quantity used</td>
<td>Smartphone</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q: 300 P: 100</td>
<td></td>
</tr>
</tbody>
</table>

New challenges

Development of the world’s first fabric with antimicrobial performance through the power of electricity

Murata Manufacturing Co., Ltd. and Teijin Frontier Co., Ltd. have jointly developed the world’s first piezoelectric fabric “PIECLEX” that generates electrical energy and exhibits antimicrobial performance when motion is applied.

PIECLEX fabric is a new energy utilization technology that realizes antimicrobial performance by converting motions such as human movement into electrical energy by combining Murata Manufacturing Co., Ltd.’s piezoelectric technology cultivated through development and manufacture of electronic components with Teijin Frontier Co., Ltd.’s fabric technology, which spans from yarns and materials to product manufacturing. PIECLEX uses plant-derived polylactic acid as its raw material and uses a carbon-neutral, earth-friendly material. In addition, PIECLEX fabric generates electricity by using the expansion and contraction of the fabric produced by human movement or other motions. This enables antimicrobial and deodorant functions without using chemical agents or organic solvents, helping to reduce the environmental load. We will continue to contribute to the realization of a sustainable society through the ongoing development of new technologies.

(For more information on Murata’s technological development, please see p.52.)
Murata’s profile

Murata products are playing pivotal roles all around the world. Since our sales exceed one trillion yen and are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs.

Global expansion and development

Murata’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  Number of employees outside of Japan
62 companies  42,851 persons

A diverse range of products for a diverse range of applications

Murata holds a large market share in a wide range of products, from our mainstay capacitors to filters, inductors (coils), sensors, batteries, and other components, and modules comprised of these components. The market areas where our products are valued have expanded beyond our core markets, such as smartphones, computers, AV equipment, and home appliances, and are now experiencing increasing demand from other areas such as 5G wireless communications, mobility enabled automobiles, EV (Electric Vehicles), IoT, automobiles, healthcare, and energy.
We will continue to lead innovation in the electronics industry with an eye on technological development over the medium to long term.

Achieving growth by taking advantage of management that grasps the big picture of technological trends as our strength

Nowadays, the electronics market is undergoing major changes. We are entering a new growth stage against the backdrop of 5G (the 5th generation of mobile communication systems) in the telecommunications industry and electrification and automation in the automotive industry. By constantly creating new value, Murata will continue to fulfill its mission as an innovator in the electronics industry. Moreover, we are determined to firmly meet the expectations of our stakeholders through the development of competitive and unique products.

The origin of Murata’s technology lies in ceramics, inorganic materials with various electrical properties, leading us to refer to them as “Wonder Stone.” Based on this, we have created a wide range of electronic components including capacitors. In particular, we hold the world’s top market share of multilayer ceramic capacitors (MLCCs) owing to our technology and quality.

If components such as capacitors and inductors comprise the first page of our business portfolio, the second page consists of modules. In the 1990s, Murata developed RF components for 2G (the 2nd generation of mobile communication systems), which led to the creation of a communication module business combining electronic components. At the time, we made an effort to develop technologies based on a development roadmap with our sights set on the next 10 to 20 years.

Moreover, our sales engineers conducted business meetings with our customers by taking advantage of our abundant technological expertise and strove to resolve customers’ issues by leveraging our competitiveness in prompt decision-making. Diverse human resources engaged in monozukuri (manufacturing) at each factory, along with our sales engineers engaged in resolving customers’ issues from the management perspective, have created a foundation for the timely and stable supply of products required by customers, eventually allowing Murata to expand globally.

In the face of the new trends of 5G and the electrification and automation of automobiles, Murata is looking ahead of the times to be fully prepared, while enhancing its confidence in timely provision of products needed in the future market.

I believe there is no limit to technology. For example, the MLCC is considered to have been miniaturized to the maximum extent possible; however, I do not think it has reached its limit. Murata’s true value lies in its constant effort to challenge the limit and create new technologies. Since its foundation, Murata has been focusing on creating imitable products by utilizing “Wonder Stone” as a material. And currently, we are realizing high profitability while focusing on technological development with the aim of achieving the net sales of new products that comprise 40% of the total net sales.

Looking back on Murata’s 75-year history, we have gone through rough seas numerous times and have faced challenging business results in the short term. However, our strength lies in our management’s ability to grasp the big picture of technological trends rather than taking a short-sighted approach. Based on this, our unique management system, called “matrix management,” is supporting our competitive advantage in monozukuri (manufacturing). In this fiscal year, the business environment is expected to be challenging due to the impact of the COVID-19 pandemic, causing concerns to our shareholders and investors. However, we have a clear picture of what we should do in the long term. In this regard, we promise to surely meet your expectations over the medium to long term.

We will be fully prepared to capture the demand for 5G.

As for the market environment in the current fiscal year, we expect a significant decline in the demand for products used in automobiles due to the impact of the COVID-19 pandemic and other factors. Meanwhile, there are also concerns about a decline in the demand for products used in consumer devices; however, we expect that the demand will pick up as the spread of the COVID-19 pandemic is brought under control.

In terms of business operations, a Business Continuity Plan (BCP) has been properly carried out in our entire supply chain, despite disruptions in operations at some production sites. By leveraging lessons learned from previous hardships such as the Great East Japan Earthquake and the Heavy Rain Event of July 2018 in western Japan, we have focused on maintaining and improving our supply chain. And I believe that such efforts have borne fruit. Moreover, in order to ensure the safety of our employees, we have implemented various measures
Message from the President

In a focused manner in terms of both tangible and intangible aspects (please see p.56).

In addition to these efforts, Murata is also working on BCP (Business Continuity Planning) at its production sites. Traditionally, it has been considered difficult to automate the manufacturing process for ceramic products because the process is extremely complicated. However, Murata has been steadily promoting the use of smart factories in its own way. In this process, we are actively working on the use of the latest technologies, such as artificial intelligence (AI). Through these efforts, we will surely fulfill our mission of maintaining a stable supply of products no matter what happens.

As for the latest business opportunities, we place importance on products compatible with 5G. We are in the stage where actual demand is rapidly increasing, mainly for smartphones and base stations. The current climate of the 2020 Tokyo Olympics, which was supposed to drive a new trend in the telecommunications industry, is uncertain. However, Murata strives to be fully prepared to meet the demand of the market.

Regarding the potential of 5G, I would like to make a point that it is not limited to an increase in the communication speed of smartphones. Particularly, we are focusing our attention on the merit of low latency. I expect that if communication latency is minimized to the maximum extent, the data can be called up from the cloud in real time, and accordingly, the form of smartphones and other communication devices will change dramatically in the future.

At the same time, all kinds of electronic devices in our lives and several industries will be connected through the network after the launch of 5G. In this regard, when it comes to Murata’s business, we expect to see more commercial opportunities in the fields of modules and solutions, in addition to components. Moreover, we are also steadily preparing to enter the domain of software in the communication infrastructure field and we will meet the demand of the market by developing new business with an eye on 5G and even 6G.

We are steadily preparing for growth in the next ten years.

In order to achieve sustainable growth over the medium to long term, we are working to add the third page of our business portfolio called “solutions” to the two existing business portfolios, namely, components and modules. This aims to create a new business model that includes the domain of software.

Specifically, we are envisioning businesses related to various big data, including traffic information such as congestion of automobiles, operational information related to preventive maintenance at factories, and biometric information related to health management. Murata has a variety of sensors in its lineup, capable of providing constituent services ranging from data sensing, data processing and analysis by combining such sensors with components, modules, and software. We are currently proceeding with the development of technologies to make this solution field a new pillar of our business.

However, a new business cannot be established overnight; it is a preparation with an eye on the future in the next ten years. To develop such a field, it is essential to train engineers who will sustain the future of Murata. I myself would like to utilize internal social networking sites as much as possible, and refer to a variety of opinions through direct discussions with young engineers with an eye toward fostering engineers and further developing the future. Based on monozukuri (manufacturing), which is the foundation of Murata’s business, we will also aim to generate revenue in the domains of system maintenance and services.

In addition to positive efforts to create the third business in our portfolio, I believe it is also important for me to closely examine a wide range of our businesses to envision the mission of the new president. For example, as for projects that are not contributing to earnings despite research and development activities over a long period of time, I am planning to develop an exit strategy after determining certain criteria and milestones. Some may feel this is a negative effort; however, this is an issue I cannot avoid as a corporate manager. Going forward, I will discuss the matter at the Board of Directors’ meetings and the Management Executive Committee meetings to find the best course of action.

No one knows what society will be like in the next 10 or 20 years. However, in terms of technology, I am confident that we are going in the right direction. With an eye toward what the future of technology looks like, we will apply a backcasting approach and solemnly do what we should do now. By doing this, I am confident that we will achieve our goals in the future.

At Murata, the ratio of R&D expenses to sales has remained at around 7%. It may sound expensive when compared to other companies in the industry, however, we believe it is a meaningful investment from the perspective of an advance investment to achieve our vision in the future. Meanwhile, Murata operates its business while placing importance on return on invested capital (ROIC) based on the belief that we are entrusted with the precious funds of our shareholders and investors (please see p. 17). We will continue to deliver inimitable and valuable products to the market through active research and development activities while maintaining a sound financial base from a long-term perspective.

We will move on to a new growth stage by strengthening the human resources base and ensuring the management transparency.

We understand that further promotion of the management based on the Environmental, Social and Governance (ESG) criteria is important to achieve sustainable growth in the long term. Among other things, the most important thing is to strengthen our human resources base. Since its foundation, the source of Murata’s strength has been management that values and develops people. Our corporate culture is characterized by the fact that the development of subordinates is considered the main mission of their superiors.

Based on the above, in the process of building their careers, employees are able to acquire multiple skills, starting with six months of training at a factory after joining the company and then gaining various work experience at each group company. This is beneficial not only in terms of gaining business skills, but also in fostering diverse perspectives. We can say that such job rotation has led to the ongoing development of management personnel. In the future, as we carry on our corporate culture of cherishing and fostering human resources, I am planning to consider how to ensure that human resources development is compatible with changes in the times and the scale of our business.

At the same time, as our business becomes increasingly globalized, we consider that it is also important for us to promote diversity and inclusion. Our corporate culture, which respects the diversity and creativity of each and every employee, will become the foundation for growth in the next era. Going forward, we will accelerate internal discussions to create a work environment in which all employees can positively engage in their work, regardless of gender, nationality, or disability.

Moreover, as for corporate governance, Tsuneo Murata, who has been appointed Chairman of the Board, will take the lead in strengthening the system (please see p.39). In particular, we believe it is important to further increase the transparency of management, and we will enhance the monitoring function of management, including further revitalization of the Board of Directors. As a matter of course, we will focus on communicating information to our shareholders and investors and engaging in dialogue with them more than ever in a sustainable manner.

In its 75-year history, Murata Manufacturing Co., Ltd. has received tremendous support from various stakeholders and has been able to achieve prosperity that it enjoys today. Moreover, the three strengths that have been developed by former President Tsuneo Murata, namely, the ability to improve at work sites, our engineers’ curiosity, and the ability to deliver solutions, have also become a driving force for our growth. I consider it my job to further enhance these strengths. While demonstrating these strengths and pursuing a decentralized autonomous organization, we will aim to become a corporate group that can always engage in the resolution of issues faced by our customers and provide optimal solutions in a prompt and timely manner. We hope you will look forward to seeing Murata’s continuous challenge to create new value.
In order to ensure that we live up to the stakeholders’ expectations, we will focus efforts on enhancing our corporate value from both financial and nonfinancial angles.

Commitment to Murata Philosophy is the core of our Business & Management Foundation

My name is Yoshito Takemura, and I am in charge of the Corporate Planning & Administration Unit. I would like to express my sincere gratitude for your support for our Group. I would like to discuss Murata’s financial policy and initiatives and our views on business management and issues we face amid increasing interest in nonfinancial value in recent years.

First, what underlies the accounting system of Murata Manufacturing Co., Ltd.? It is the Murata Philosophy established by our founder, Akira Murata. At Murata, we have been emphatically told to always be conscious of capital costs, to win the trust of our stakeholders, including shareholders, clients, and suppliers. To this day, the Murata Philosophy has remained at the base of Murata’s Business & Management Foundation.

Transparency of profit drives growth

At Murata, we have a three-dimensional matrix organizational structure in which businesses such as capacitors and RF modules are categorized in the vertical axis and process-based organizations that conduct location (entity) operations, including production activities, are categorized in the horizontal axis, and which includes functional staff who support these organizations on the ground (staff of Head Office, development, sales, etc.). This organizational structure combines with the management accounting system to constitute Murata’s unique matrix management system.

The aim of the matrix management system is to finely break down business management units using the matrix (combination) by product and process to identify costs and create a system in which business performance is managed by profit/loss unit. In particular, grasping consolidated business performance each month is very important for adjusting management policies in response to the wildly fluctuating management environment. Results of business activities appear in numbers on the statement of income of each department and make individuals in charge of profit and loss management aware of their responsibility, helping them enhance their sense of business management.

Murata has unique systems to support this management accounting system, including an elaborate system of accounting line items unified across global operations, internal interest rate system, standardized cost calculation system, internal price transfer system and investment economy calculation system to support decision making. We have an organizational culture in which opinions expressed openly and freely from different angles are brought together, while placing importance on the business axis, and in which departments share information on their respective issues and cooperate with each other using objective data, even when there is a conflict between departments, to resolve these issues.

In addition, Murata was early to introduce a structure to make not just executives but heads of business units aware of capital costs. By setting internal interest rates at the same level as capital costs, the concept of engaging in business operation while being conscious of capital costs has been instilled among staff on the manufacturing floor as well, which has led to the evaluation of operations based on return on invested capital (ROIC) as we practice today.

Through these numerous efforts, we have built an ample amount of capital required for growth investment and to become able to raise funds smoothly by winning the confidence of financial institutions and the capital market. This has resulted in a virtuous cycle of investment and investment recovery during the period of a rapid increase in the number of mobile phone users. In the 2000s, we stepped up an aggressive management policy under which we took risks backed by our solid financial position, which enabled us to capture huge business opportunities related to smartphones and other devices, leading to continuous growth today.

Solid “Business & Management Foundation” and healthy growth riding on business opportunities

We expect demand for Murata’s electronic components will increase over the medium to long term along with the multi-functionalization and increased functionality of electronic devices as well as advancement in the electrification of automobiles. In order to capture opportunistic gains for business expansion, we have aggressively made investments over the past few years. On the other hand, various risks have materialized in relation to opportunities for business expansion, including deteriorated cost structures as a result of higher standards of technical requirements in response to new technologies, including 5G, and investment recovery not being achieved as expected amid increased volatility of demand fluctuation as we expand operations globally. Taking these issues into consideration, we established our Mid-term Direction 2021, which is currently in the second fiscal year after introduction.

Mid-term Direction 2021 has a slogan: “Murata focuses on strengthening Business & Management Foundation” in order to seize expanding business opportunities and realize Healthy & Sustainable Growth.” I would like to call your attention to the word, “healthy.” A healthy state for a company is a situation in which its work structures and organization are evolving in pace with the growth speed and diversification of its business operations so that the company can successfully respond to changing business opportunities, and in which the company is contributing to the sustainable development of society and winning the trust of the public by meeting its expectations and requirements from society, not just complying with laws and regulations, while maintaining high profitability. In order to achieve this state, we have introduced three initiatives (please see pp.29-30).

And we set medium-term financial targets of minimum 20% in ROIC (before tax) and minimum 17% in the ratio of operating income to net sales. For net sales, we set 2 trillion yen as a guideline. The reason for using ROIC based on post-tax operating income as the target is that it makes it easy to allocate figures to profit and loss units based on product, business division, operational location, etc. in the above-mentioned management accounting system.
As our new President, Norio Nakajima discusses in his message, one of the key issues in Mid-term Direction 2023 is to closely examine the profitability of each financial statement and the management of portfolio management. Some of our businesses are in "healthy" deficit, so to speak, having a potential to contribute to our future growth. For such businesses, we do not just terminate them categorically. Instead, we make a judgement in the course of monitoring their business performance.

Today, a large wave of change in the business environment is coming to the communication and automotive markets. Furthermore, we expect the pace of change to further accelerate as demand related to IoT (Internet of Things) technologies, including contactless and remote-control technologies, has emerged all at once due to the impact of COVID-19. In addition, we need to work to resolve social issues, including climate change and sustainable use of resources, in order to achieve a sustainable society.

Murata aims to steadily capture business opportunities, provide valuable satisfaction to customers, achieve sustainable growth, and work to resolve social issues in our business. For this, we are working to strengthen our Business & Management Foundation, including organizational structures and work structures in line with expansion of the scale of our business.

Use of human capital and information capital essential for healthy growth

A company’s real ability is not necessarily represented only by its financial statements. Nonfinancial factors, including its human resources and information, can also form part of its power or capital that creates value. I believe that the mission of Murata’s management team is to make Murata a company where each and every employee can have an opportunity to play an active role and seek to achieve healthy growth as a person with a sense of fulfillment.

In today’s rapidly changing environment, there are many cases where it is difficult to foresee the future. Therefore, it is also important that employees can become a driving force in such a situation as a sign of change and finding a new direction by themselves. Even if we draw up an excellent business strategy, the business environment changes every moment. Unless we adjust our strategy flexibly in accordance with changes in the environment, we may fall off the pace. Accordingly, we will need people who can see signs of change and flexibly change direction.

For Mid-term Direction 2021, we will work on this under the theme of “Harmony among people, organization, and society.” In the age of IoT, companies who control information will control their market share. Under Mid-term Direction 2021, each department, including factories in various locations has been actively engaged in efforts to improve productivity through utilization of data and to promote smart factories under the theme of “Establishment of advanced supply system & exponential productivity enhancement.” In addition, just as we accumulate our inimitable monozukuri (manufacturing) technologies, our indirect divisions are stepping up their unique initiatives. I believe that information can transform into management resources by giving significance to simple data and it will exert its power as so-called invisible capital (please see pp. 29–30).

Accordingly, in addition to the capital employed as recorded in financial statements, human resources and information that do not appear on financial statements are also the source of competitive advantage, and they are important capital that drives value creation.

Financial strategy to achieve sustained growth for the future

Now, in the second year under Mid-term Direction 2021, it is unclear whether we can achieve sales of two trillion yen due to impacts from the spread of COVID-19 and the intensified U.S.-China trade friction. Yet we continue our efforts to improve the ratio of operating income to net sales and ROIC and steadily build the Business & Management Foundation to achieve sustained growth for the future, based on our efforts to create added value through our operation and enhance capital by increasing profits. Since its foundation, Murata has continued to believe that enhancement of equity capital as a robust financial strength is essential amid abrupt changes in demand and rapid advancement in technologies. It is often thought that securing of financial base is contrary to growth, efficiency, but we believe it is important for achieving the permanent growth of our company. When business conditions have deteriorated, we cannot expect to achieve sustained growth unless we have enough funds to keep spending to achieve our vision in the future. We also believe that as a company we can adapt flexibly to changes only if we have a stable financial base.

Enhancement of cash reserves is also an important theme as the market outlook remains uncertain. For this, we are prepared to deal with unexpected situations, we have three months’ worth of cash reserves, which we think is an adequate level, and have secured credit lines from financial institutions. In addition, we have successfully diversified means of raising funds because we were able to issue bonds under favorable terms in the last fiscal year and a year earlier. We did not do this in anticipation of the spread of COVID-19; it simply proves that our effort in always foreseeing one step ahead has worked very well.

In terms of shareholder returns, our basic policy is to pay dividends to investors from a portion of profit earned through business activity, while maintaining corporate value over the long term and reinforcing financial position. In addition, we will strive to stabilize increase dividends by increasing earnings per share.

In terms of our financial strategy, as you can see in the tables below, we are working to improve our financial performance. We would like to continue to respect the spirit of “being trustworthy,” as called for in the Murata Philosophy, that we have built with our shareholders and investors. As our businesses and organizations continue to grow globally, we will remain focused on fostering a relationship of trust with you by stepping up our management transparency and disclosing information.

We think provision of information to employees is also important, in the sense of information disclosure to stakeholders. This is our wish that all employees, regardless of their positions, can come together to think about management issues and face shareholders and investors with the investor relations division playing an intermediary role.

Building the trust of stakeholders and contributing to the development of the world through manufacturing of electronic components: this is the ideal vision of management Murata aims for. My wish is that our shareholders and investors will empathize with Murata’s management philosophy and feel proud of holding its shares. We will focus on further improving our corporate value in both financial and nonfinancial aspects as an innovator that can sensitively detect business opportunities and risks, proactively initiate changes to respond to them, and further strengthen the relationship of trust with you while sincerely working to meet your expectations.

Invested capital (property, plant and equipment)

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</thead>
<tbody>
<tr>
<td>(Billion yen or %)</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
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</tbody>
</table>

Trends in return to shareholders

<table>
<thead>
<tr>
<th>Year</th>
<th>Total dividend (Billion yen)</th>
<th>Dividend on equity (DOE)</th>
<th>Dividend on equity payout ratio</th>
<th>Dividend on equity percentage of profit</th>
<th>Dividend on equity percentage of profit before extraordinary items</th>
<th>Dividend on equity percentage of profit before extraordinary items before one-off gain or loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>44.5</td>
<td>46.8</td>
<td>61.9</td>
<td>54.8</td>
<td>62.1</td>
<td>30%</td>
</tr>
<tr>
<td>2016</td>
<td>45.9</td>
<td>47.8</td>
<td>70.1</td>
<td>58.4</td>
<td>62.1</td>
<td>20%</td>
</tr>
<tr>
<td>2017</td>
<td>47.2</td>
<td>49.1</td>
<td>71.4</td>
<td>57.9</td>
<td>62.1</td>
<td>10%</td>
</tr>
<tr>
<td>2018</td>
<td>48.4</td>
<td>50.0</td>
<td>72.6</td>
<td>57.3</td>
<td>62.1</td>
<td>0%</td>
</tr>
<tr>
<td>2019</td>
<td>49.6</td>
<td>50.4</td>
<td>73.0</td>
<td>57.6</td>
<td>62.1</td>
<td>0%</td>
</tr>
</tbody>
</table>

*From recent forecast announced on April 30, 2020.
Murata’s value creation story

Consolidated financial and nonfinancial highlights

<table>
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</thead>
<tbody>
<tr>
<td><strong>Operating results</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Net sales (millions of yen)</td>
<td>530,819</td>
<td>617,954</td>
<td>584,662</td>
<td>681,621</td>
<td>846,716</td>
<td>1,043,542</td>
<td>1,210,841</td>
<td>1,135,524</td>
<td>1,371,842</td>
<td>1,575,026</td>
<td>1,534,045</td>
</tr>
<tr>
<td>Operating income (millions of yen)</td>
<td>26,730</td>
<td>77,485</td>
<td>44,973</td>
<td>58,636</td>
<td>125,891</td>
<td>214,535</td>
<td>275,406</td>
<td>201,215</td>
<td>163,254</td>
<td>266,807</td>
<td>254,247</td>
</tr>
<tr>
<td>Operating income / net sales (%)</td>
<td>5.0</td>
<td>12.5</td>
<td>7.7</td>
<td>8.6</td>
<td>14.9</td>
<td>20.6</td>
<td>22.7</td>
<td>17.7</td>
<td>11.8</td>
<td>16.9</td>
<td>16.5</td>
</tr>
<tr>
<td>Income before income taxes (millions of yen)</td>
<td>34,658</td>
<td>82,062</td>
<td>50,931</td>
<td>59,534</td>
<td>132,336</td>
<td>238,400</td>
<td>279,173</td>
<td>200,418</td>
<td>167,801</td>
<td>267,316</td>
<td>254,032</td>
</tr>
<tr>
<td>Net income attributable to Murata Corporation (millions of yen)</td>
<td>24,757</td>
<td>53,492</td>
<td>30,807</td>
<td>42,386</td>
<td>93,191</td>
<td>167,711</td>
<td>203,776</td>
<td>150,606</td>
<td>146,086</td>
<td>206,930</td>
<td>183,012</td>
</tr>
<tr>
<td>Shareholders’ equity (millions of yen)</td>
<td>800,857</td>
<td>821,144</td>
<td>808,542</td>
<td>860,963</td>
<td>955,760</td>
<td>1,123,090</td>
<td>1,517,784</td>
<td>1,634,560</td>
<td>1,603,976</td>
<td>1,694,104</td>
<td></td>
</tr>
<tr>
<td>Total assets (millions of yen)</td>
<td>1,243,687</td>
<td>1,431,303</td>
<td>1,087,144</td>
<td>1,243,687</td>
<td>1,431,303</td>
<td>1,517,784</td>
<td>1,634,560</td>
<td>1,694,104</td>
<td>1,703,013</td>
<td>2,048,893</td>
<td>2,250,230</td>
</tr>
<tr>
<td>Net cash provided by operating activities (millions of yen)</td>
<td>107,303</td>
<td>105,610</td>
<td>57,589</td>
<td>88,537</td>
<td>185,751</td>
<td>259,936</td>
<td>252,451</td>
<td>243,920</td>
<td>225,249</td>
<td>279,842</td>
<td>350,334</td>
</tr>
<tr>
<td>Net cash provided by (used in) financing activities (millions of yen)</td>
<td>(22,379)</td>
<td>(14,561)</td>
<td>(9,148)</td>
<td>(6,655)</td>
<td>(40,899)</td>
<td>(66,966)</td>
<td>(56,614)</td>
<td>(11,729)</td>
<td>(83,585)</td>
<td>(51,546)</td>
<td>(17,650)</td>
</tr>
<tr>
<td>Cash and cash equivalents at end of year (millions of yen)</td>
<td>108,777</td>
<td>63,020</td>
<td>61,008</td>
<td>72,323</td>
<td>76,884</td>
<td>84,935</td>
<td>99,105</td>
<td>141,625</td>
<td>187,910</td>
<td>217,805</td>
<td>302,320</td>
</tr>
<tr>
<td>Average exchange rate (Yen/U.S. dollar)</td>
<td>92.85</td>
<td>85.72</td>
<td>79.07</td>
<td>83.11</td>
<td>78.6</td>
<td>78.5</td>
<td>81.0</td>
<td>82.9</td>
<td>81.1</td>
<td>78.3</td>
<td>75.3</td>
</tr>
<tr>
<td><strong>Indices</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Shareholders’ equity ratio (%)</td>
<td>86.2</td>
<td>83.1</td>
<td>80.8</td>
<td>79.2</td>
<td>76.8</td>
<td>78.5</td>
<td>81.0</td>
<td>82.9</td>
<td>81.1</td>
<td>78.3</td>
<td>75.3</td>
</tr>
<tr>
<td>Basic earnings attributable to Murata Corporation per share (yen)</td>
<td>38.45</td>
<td>83.08</td>
<td>48.12</td>
<td>66.94</td>
<td>146.88</td>
<td>264.06</td>
<td>320.85</td>
<td>244.62</td>
<td>228.62</td>
<td>323.45</td>
<td>286.05</td>
</tr>
<tr>
<td>Return on equity (%)</td>
<td>3.1</td>
<td>6.6</td>
<td>3.8</td>
<td>5.1</td>
<td>10.3</td>
<td>16.1</td>
<td>17.3</td>
<td>12.1</td>
<td>10.4</td>
<td>13.5</td>
<td>11.1</td>
</tr>
<tr>
<td>Shareholders’ equity per share (yen)</td>
<td>1,243.78</td>
<td>1,275.27</td>
<td>1,276.85</td>
<td>1,359.65</td>
<td>1,504.84</td>
<td>2,034.88</td>
<td>2,122.83</td>
<td>2,276.82</td>
<td>2,507.11</td>
<td>2,656.26</td>
<td>2,467.88</td>
</tr>
<tr>
<td>Cash dividends per share (yen)</td>
<td>92.85</td>
<td>85.72</td>
<td>79.07</td>
<td>83.11</td>
<td>100.24</td>
<td>109.94</td>
<td>120.14</td>
<td>108.42</td>
<td>110.86</td>
<td>110.91</td>
<td>108.75</td>
</tr>
<tr>
<td><strong>Trends in return to shareholders</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total cash dividends (Billion yen)</td>
<td>23.33</td>
<td>33.33</td>
<td>33.33</td>
<td>33.33</td>
<td>43.33</td>
<td>60.00</td>
<td>70.00</td>
<td>73.33</td>
<td>86.67</td>
<td>93.33</td>
<td>97.00</td>
</tr>
<tr>
<td>Shareholders’ equity (millions of yen)</td>
<td>22,868</td>
<td>56,752</td>
<td>68,445</td>
<td>77,662</td>
<td>69,896</td>
<td>61,795</td>
<td>61,008</td>
<td>72,323</td>
<td>84,935</td>
<td>99,105</td>
<td>141,625</td>
</tr>
<tr>
<td><strong>Research and development expenses (Millions of yen)</strong></td>
<td>22,868</td>
<td>56,752</td>
<td>68,445</td>
<td>77,662</td>
<td>69,896</td>
<td>61,795</td>
<td>61,008</td>
<td>72,323</td>
<td>84,935</td>
<td>99,105</td>
<td>141,625</td>
</tr>
</tbody>
</table>

The 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 2009.

[For other nonfinancial data, please see: ESG data collection](https://corporate.murata.com/en-global/csr/esg_data)
Process of value creation

Treasure Murata Philosophy and pursue the unique qualities of Murata

We continue to value the Murata Philosophy, even in a changing business environment. Employees around the world sharing the Murata Philosophy will create innovation and new value by trusting and cooperating with each other to demonstrate collective strength.

Communications market

Murata’s vision for the future

Smartphones are ubiquitous. We will contribute to fulfilling the advanced needs of our customers through our technological capabilities and product appeal. We will also set our sights on providing integrated solutions for antennas and filters combined with RF modules in addition to our standard capacitors and noise suppressor products in order to meet advanced demand arising from higher functionalities, multifunctionalization, and compatibility with the next-generation communications technology, 5G (the 5th generation of mobile communication systems) for equipment, already aiming to achieve further growth.

Applying Murata’s strengths

- Preference toward smaller and thinner components and high density mounting of consumer MLCCs
- Higher frequency, superior composite performance, and miniaturization in response to the evolution of communications technology for piezoelectric components
- Low power consumption, high-speed data communication, and higher reliability toward an IoT society in connectivity modules

Automotive market

Murata’s vision for the future

We aim to establish a society where everyone can move freely with confidence while protecting the environment. To this end, we are now addressing several themes such as the advancement of electrification and automated driving, sensors for safe driving, and wireless modules for data communication between cars and the outside world. Sharing the value of “higher reliability” that brings our customers peace of mind, we will continue our growth with a diverse lineup that leverages Murata’s strengths in areas such as sensing, communication, miniaturization, and noise suppression.

Applying Murata’s strengths

- Higher reliability and high-temperature/high-humidity resistance in automotive MLCCs
- Utilization of sensors, automotive safety and a connected, comfortable space

Murata market challenges over the medium to long term

We will continue to meet challenges in Energy and Medical/Healthcare markets in a long-term perspective. In addition, we are seeing an expansion of customer needs in relation to the IoT (Internet of Things) society. In response to these expanding needs, we are working to realize the provision of new value that integrates sensor and communication technologies.
Murata’s core competencies

We will increase our collective strength by enhancing and connecting respective strengths together.

Since most of our sales are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs. Murata’s strengths are in our global sales network, technological development capabilities, monozukuri (manufacturing) capabilities, and supply capabilities. We will increase our collective strength by combining these elements.

Core competencies

Innovation driven by CS/ES

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 critical aspects in our management. At Murata, CS means “to create and provide value that customers appreciate,” and ES means “each and every employee feels rewarded and continues to grow through his or her work.” We practice these values based on our desire to be a company that can realize them in our daily business.

Innovation driven by CS/ES

Formulation of roadmaps leveraging marketing capabilities

New technologies such as IoT, automated driving, and AI in the 5G era will change not only individual electronic devices, but also transportation systems, cities, and society as a whole. We have strengthened our efforts to look to the future and provide optimal solutions to our customers by boosting cooperation among sales, marketing, development, and production in order to continue to provide value to our customers in this vastly changing business environment.

As one of those activities, we have formulated four roadmaps. The Sales & Marketing Unit evaluated general trends in the market and produced the Market Roadmap, and the sales and marketing departments in each area and the sales promotion department of the business divisions integrated this Market Roadmap with customer needs over the medium to long term, whereby composing the Needs Roadmap. These are connected to the Product Roadmap and the Technology Roadmap by the development department. Roadmaps are revised every year and reconected to R&D and product development. Based on the roadmaps, product technologies that offer the highest level of technical services to customers play the role of finalizing the services as a product as they respond to customers on the front line during the new product development phase and provide feedback on detailed needs to the development department.

Components

1. Anticipation of market needs
2. Continuous R&D investment enabling product development and accumulation of intellectual property
3. Strong monozukuri capabilities enable timely supply
4. Enablement of advanced supply for management

Core competencies

Murata’s value creation story
 Accumulation of intellectual property

Murata sees the strengthening of its intellectual property (IP) as a critical part of our product development efforts and overall business plan, and we are proceeding with IP strategies and activities accordingly. Each business division and product development department has a representative and a patent leader, both of whom promote IP activities in their respective areas in cooperation and alignment with the corporate IP Department; those representatives and patent leaders play a central role in managing and encouraging IP activities. We also cultivate a company-wide sense of awareness of the value of our IP through various events such as education for all levels of employees, workshops, and patent forums.

Trends in the number of patents owned by Murata

The number of patents owned by Murata is increasing year by year. This is due to an increasing number of applications resulting from expansion in various technological fields as a result of mergers and acquisitions (M&As), and the inclusion of the number of patents that have been transferred. The reason for an increase in the number of foreign applications is that our ratio of sales outside of Japan has increased, and we have been proactive in filing new applications. When moving forward with international applications, we utilize a Patent Cooperation Treaty (PCT) to ascertain appropriate countries where we should file with consideration for optimizing cost effectiveness.

Ranking in PCT applications filed

![Ranking among Japanese corporations](image)

Murata’s core competencies

Murata has built an integrated system of manufacturing, from raw materials to finished products, and we have independently developed technologies in the application of materials and other such core areas of our operation, obtaining a level of expertise that many other companies have not been able to reach. Through continuous investment in innovation, we have sought to differentiate our products, and this has become one of major factors in Murata’s strengths.

Continuous R&D investment enabling product development and accumulation of intellectual property

- **Trends in net sales and new product sales**
  - Net sales
  - Ratio of new products to net sales

- **R&D expenses and ratio of R&D expenses to net sales**
  - R&D expenses
  - Ratio of R&D expenses to net sales

Accruals: 2

Murata has established technologies to precisely control ceramic materials and electrode materials that critically determine the properties of electronic components.

Murata has leveraged the largest production capacity in the industry. Leveraging this capacity, we can deliver to customers in a swift and timely manner, while vertically integrating our manufacturing operation and conducting global and decentralized production, we have optimized the value we can deliver to customers in a swift and timely manner, while leveraging the largest production capacity in the industry.

Once completed, products are delivered to customers only after rigorous testing proves that they are worthy of the Murata label.

**Strong monozukuri capabilities enable timely supply**

Murata’s technologies are directly aligned with our strategic markets and customers. Murata internally develops materials, processes, products and production technology. By vertically integrating our manufacturing operation and conducting global and decentralized production, we have optimized the value we can deliver to customers in a swift and timely manner, while leveraging the largest production capacity in the industry.

**Materials**

- From ceramic sheets that are 1 µm or less in thickness to complexity shaped filters created by injection forming, we pursue an ideal shape aligned with each function.

**Sheet casting**

- When sintered, ceramic crystal structures shift to achieve certain properties. Sintering is a technique to control these invisible changes within a furnace.

**Sintering**

- Once materials have gained the desired electric properties from the previous processes up to sintering, ceramics are formed into electronic components through various additional processing.

**Packaging**

- Once completed, products are delivered to customers only after rigorous testing proves that they are worthy of the Murata label.
Long-term vision (Vision 2025) and Mid-term Business Plan (Mid-term Direction 2021)

Murata has prepared the “Mid-term Direction” that includes actions to be taken over a three-year period for achieving our long-term vision and sustainable growth. Here, we will introduce details of our current Mid-term Direction and our progress.

Long-term vision (Vision 2025)

Theme
Murata focuses on strengthening “Business & Management Foundation” in order to seize expanding business opportunities and realize Healthy & Sustainable Growth.

Where Murata wants to be in 2025

■ Innovation driven by CS/ES (Customer Satisfaction/Employee Satisfaction)
All Murata employees collaborate with one another, innovate, and create new value.

■ Global No.1 Component & Module Supplier
Murata aims to become the first-choice supplier in the target segments of each of our businesses while expanding the scope of our offering and value proposition from parts to solutions.

■ Foundational markets, challenging markets, next new markets
Acquire and enhance core competencies, and achieve the following:
① Establish Automotive market as a foundational market of our business and a pillar of growth, following the Communication market.
② Continue to challenge in Energy and Medical/Healthcare markets.
③ Explore promising NEXT NEW markets.

Mid-term Direction 2021 (fiscals 2019 to 2021)

In the communications and automotive markets, a large wave of environmental change is just around the corner.

In order to secure business opportunities from these markets and achieve sustainable growth, it is necessary to strengthen the foundations of the organization and work structures in accordance with the expanding size of the company.

In the growing markets, we will aim for healthy growth so that we can provide the value that satisfies Murata’s customers and allow each and every employee to feel rewarded as they continue to grow.

Progress of Mid-term Direction 2021

We will introduce our initiatives under three corporate-wide policies for the fiscal year ended on March 31, 2020, the first year of the mid-term direction.

■ Implementation of portfolio management
It is necessary to establish a mechanism for more efficient allocation of resources from the perspective of corporate-wide optimization, and we are working on introducing feasibility assessment models as a measure.

■ Establishment of advanced supply system & exponential productivity enhancement
In addition to the active use of the Internet of Things (IoT), we are making comprehensive efforts to achieve optimization and standardization, in order to enhance the efficiency of monozukuri (manufacturing) while eliminating constraints and waste.

■ Harmony among people, organization and society
We will set targets for issues of materiality (key issues) originating from social issues and accelerate our efforts while maintaining harmony with our business. In addition, as the first step in establishing an organizational culture and business processes that enable trust and respect, we will conduct a global survey to increase the number of employees who feel “rewarded and see opportunities for growth.”

Three corporate-wide issues and mid-term basic policies for seizing expanding business opportunities and realizing Healthy & Sustainable Growth

Implementation of portfolio management

“Murata’s business portfolio is composed of ‘Global No.1’ products and we create additional customer value by designing and proposing specific technologies and products.”

Basic policy

1. In order to respond to changes in the market environment, the key requirements are to identify promising businesses, develop necessary management resources and conduct optimal allocation. From a market perspective, Murata concentrates management resources on the Communication and Automotive markets.
2. Murata tackles new business creation with a long-term perspective. In the Energy and Medical/Healthcare markets, Murata continues to address the challenge in the communication market.
3. Murata acquires and strengthens core competencies that enable sustainable growth.

Harmony among people, organization and society

“Murata earns the trust of society and is able to respond to changing business opportunities by improving its systems and organization by adapting as our employees grow and as our business grows.”

Basic policy

1. Murata places great emphasis on Employee Satisfaction, a key ingredient to support our growth and strengthen the organization.
2. Murata develops its organizational culture and business processes to engendering off “trust and respect.”
3. Murata complies with all applicable regulations and laws.

Establishment of advanced supply system & exponential productivity enhancement

“While satisfying each customer’s QCDs (quality, cost, delivery, and safety), Murata achieves dramatic improvements in capital and labor productivity and a stable supply system that responds to demand fluctuation.”

Basic policy

1. Murata enhances direct/indirect labor efficiency, utilizing all appropriate methods, including AI and RPA.
2. Murata learns best practices from internal organizations and other companies, and expands on them.
3. Murata prepares systems for development and production ahead of demand fluctuations.
4. Murata flexibly responds to demand fluctuation by accelerating in a timely manner the flow of information and goods throughout the supply chain and organizations and sites.
5. Autonomous overseas factories collaborate, and we strengthen all Murata monozukuri (manufacturing) capabilities.
Murata’s key issues originating from social issues

Our slogan, “Innovator in Electronics,” has been advocated as a common identity to be shared among all employees. Not only does this slogan indicate our mission for Murata to become a leading innovator in the electronics industry, it also advocates that excellent innovators take the initiative in working toward a better environment and society and think seriously about how to make things better rather than doing things just because they are obliged to do so by laws and regulations. Murata values this spirit and has always taken it seriously. To take our efforts one step further, we newly established the Sustainability Promotion Department in April 2020 to promote the awareness resolution of social issues and integration with management.

Key areas Key issues Identified risks and opportunities The fiscal 2019-2021 mid-term target

Environment
- Impact on the business due to an increase in natural disasters associated with climate change
- Improvement of global energy efficiency and promotion of the use of renewable energy

Use of Sustainable Resources
- Impact on business operations due to the reduction in available water and mineral resources
- Expansion of circular economy, including regulations on waste plastics
- Growing momentum for sustainable procurement

Pollution Prevention and Chemical Substance Management
- Possibility of leakage and spillage of hazardous chemical substances and contamination of products with hazardous chemical substances
- To apply green procurement based on the Murata Standards to the raw materials, parts and products delivered to Murata.
- To manage environmentally hazardous substances contained in Murata products and materials in accordance with the Murata Standards.
- To reflect internal and external requirements (legal requirements, supplier requirements, and Murata Standard) in product specifications regarding chemical substances contained in products
- To grasp social trends and revisions to laws and regulations, and take actions in advance
- To establish a global management system for volatile organic compounds (VOCs) and hazardous substances

Solving Societal Problems through Business

Key areas Key issues Identified risks and opportunities The fiscal 2019-2021 mid-term target

Business
- Highly efficient components contributing to a stronger response to climate change
- Lightweight miniature components promoting sustainable use of resources
- To take actions in advance to address climate change
- To develop business opportunities based on social issues
- To quantify the non-financial value of light, compact and high efficient products.

Murata’s key issues originating from social issues and the mid-term target

We defined the focus to on issues of materiality and divided them into two categories, namely, resolution of social issues through business (opportunities) and initiatives for social issues in business processes (risks), and we established 11 items of materiality (key issues) in July 2019.

The process of identifying key issues

- Step 1 Drafted an extended list of about 100 social issues based on the United Nations Sustainable Development Goals (SDGs), global risks, and issues faced by Murata
- Step 2 Scored these issues in accordance with their importance for Murata’s business and their importance for stakeholders in terms of both risks and opportunities after excluding issues that lack clear affinity to relevant business
- Step 3 Held discussions among executives including representative directors and persons concerned and determined 11 key issues at the Board of Directors’ meeting

Work on societal issues in our business processes

- Safe and Worry-free Working Environment and Health Management
- The possibility of occurrence of industrial accidents resulting from a rapid increase in the number of employees due to business growth
- To reduce the annual work-related accident rate to 1,000 people to 1.6 or less [Promotion of Health Management]
- To establish a health and productivity management promotion system.
- To reduce risks in the health care field in business operations
- To implement health and productivity management initiatives for individual employees

- Social
- Respect for Human Rights and Diversity
- Increased human rights risks due to an increase in the number of global workers and the expansion of areas where the business is conducted
- To firmly establish “Management System on Human Rights and Labor” and effectively implement Plan-Do-Check-Act (PDCA) cycles, in order to make improvements
- To expand and enhance education to improve sensitivity of employees towards human rights, labor, and harassment
- To promote diversity and inclusion.
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- To increase the number of women in management roles, and to implement initiatives to increase the number of women in management roles.
- To provide opportunities for people with disabilities to work while feeling rewarded and develop in a system which they can be employed continuously

- Respect for the Environment
- Increased global resistance for the prevention of climate change and the protection of natural resources
- To achieve a situation where the PDCA cycles for risk management at the global level is functioning effectively, and the concept of risk management has become a part of our daily operations.
- To establish a situation where the PDCA cycles for risk management at the global level is functioning effectively, and the concept of risk management has become a part of our daily operations.
- To promote the development of a Business Continuity Plan (BCP) that responds to possible risks, to prevent risks that could disrupt the Company’s business continuity, and to mitigate losses in the event that these risks materialize.

- Data Security
- Increasing global resistance for the prevention of cyber-attacks.
- To achieve a situation where the PDCA cycles for risk management at the global level is functioning effectively, and the concept of risk management has become a part of our daily operations.
- To deploy PDCA cycles for general compliance activities including monitoring and education of control processes at all businesses, in order to globally implement the “Basic Policy for Prevention of Cyber-Attacks and Bribery”

- Governance
- Appropriate Business Transactions
- Occurrence of major disasters
- To ensure that the concept of Data Security has become a part of our daily operations.
- To realize our founder’s philosophy of “Wishing the presence of Murata to be pride and a source of joy in local communities” on a global level with the aim of achieving “harmony among people, organization and society.”
- To deploy PDCA cycles for general compliance activities including monitoring and education of control processes at all businesses, in order to globally implement the “Basic Policy for Prevention of Cyber-Attacks and Bribery”

Solving Societal Problems through Business

- Highly efficient components contributing to a stronger response to climate change
- Lightweight miniature components promoting sustainable use of resources
- To quantify the non-financial value of light, compact and high efficient products.
- To realize the value of the business from a non-financial perspective.
- To develop a commercialization process from a non-financial perspective.
- To explore business opportunities based on social issues.

Contributing to society through technological development and product supply

- Based on materiality (key issues), Murata has been working on addressing social issues in its business processes and has materialized to resolve social issues through the business operations. One of our efforts has been to supply products to a wide range of markets while pursuing miniaturization and convenience. Especially in the automotive business area, the importance of which has been increasing in various markets such as 5G and Society 5.0, we have been supplying large quantities of ultra-compact, energy-saving electronic components and high efficiency RF modules continuously. In particular, the changes in the volumetric capacitance (µF/mm³) of MLCCs (multilayer ceramic capacitors) is one of the results of our efforts to meet the needs of society through the development of technologies to manufacture lightweight, compact products and to contribute to the enhancement of the convergence of people’s lives and sustainable use of resources through our customers’ products. We will make constant progress in technology and continue to further contribute to society.
Chip multilayer ceramic capacitors for consumer

The chip multilayer ceramic capacitor (MLCC) is an electronic component with external electrodes electrically and mechanically bonded to a substrate, attached to repeatedly stacked internal electrodes and ceramic dielectrics such as titanium oxide and barium titanate. It is a highly reliable nonpolar capacitor with high withstanding voltage and insulation resistance, superior frequency and heat-resisting characteristics, and long service life.

MLCCs are employed in mobile equipment and home appliances as well as IT devices and network infrastructure equipment; they 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. In particular, 600 to 3,000 MLCCs are used in one high-end smart phone. Even low-end or midrange models use 300 to 600 MLCCs per unit.

Regarding MLCCs for consumer devices, to meet market demands particularly for those smaller in size, various products have been developed and have become highly competitive capacitors. Recently, the main product size has shifted from 1005M (1.0×0.5 mm) to 0603M (0.6×0.3 mm) and for wearable devices and small modules, consideration for smaller components and high-density mounting, Murata will continue to improve its ceramic material pulverization and multilayer technology and propose new product design and easier-to-use solutions.

Chip multilayer ceramic capacitor for automotive

For MLCCs used in automotive applications, stricter regulations have been set than those of consumer product MLCCs in the areas of product material selection, design standards, product performance, and process management to achieve higher reliability and longer product life, even though materials and processes are generally the same as those in consumer MLCCs.

MLCCs have been increasingly adopted for safety applications such as airbags and antilock braking systems. Also in addition to hybrid and electric vehicles. Moreover, components employed by many customers are becoming smaller and the main size is shifting to 1005M (1.0×0.5 mm) from 1608M (1.6×0.8 mm). Also, these satisfy requirements of temperature cycling tests and high-temperature and high-humidity load tests at 150°C. A step up from the previous guarantee of 125°C. Furthermore, more products meet requirements specific to in-vehicle applications regarding static electricity and surge tests (ISO7637-2). Recently, products that can be used in higher temperature environments are in demand.

To respond to tough market demands as stated above, Murata has developed more reliable materials, ensured product design margins, and established strict inspection standards for the production process to realize highly reliable products suited to use environments. In 2017, Murata succeeded in commercialization of lead-type resin-coated MLCCs resistant to 200°C, and customers are considering adoption. Furthermore, various types of MLCCs according to the use environments have been commercialized, such as water-repellent products and MLCCs with metal terminals jointed. Also in automotive MLCCs, Murata will continue to create new value for society by developing ceramic materials and improving process and inspection technologies toward creating smaller, more highly reliable, and higher-performance components.

Moreover, there is a strong desire in the in-vehicle system market for the stable supply of Murata’s highly reliable components, and to respond to such expectations as the market leader, we are making a maximum equipment investment at domestic and overseas plants. Murata will continue to deliver products with safety and security by identifying customers’ product and supply needs as a continuously trusted company.

Since the risk of COVID-19 infections has emerged, Murata has worked to implement infection prevention measures for employees as the top priority. Although there were confirmed cases of COVID-19 at a number of our sites, causing concern for many people including local residents, we prioritized safety of employees and suspended operation for a few days, thoroughly sanitizing the facilities and implementing infection prevention measures.

Because our main plants are located in Japan, China, the Philippines and Singapore, infection risks differ from country to country and the governments of these countries have different policies against infection, we have adopted a policy to allow the management of each local operation to make judgments and take measures they believe are optimum in accordance with changing situations. We have also worked to maintain favorable relations with the local community by donating face masks and hazmat suits via local governments.

Chip multilayer ceramic capacitors for consumer

And production remain in the slump, affected by the spread of COVID-19. Accordingly, we expect net sales to remain at these levels for a short term. Still, there has been an increase in demand for MLCCs in some markets in the first half of fiscal 2020, against the backdrop of demand related to people working remotely or staying at home. Murata, which operates in diverse markets and has business with a broad range of customers, has been working to support supply to customers and public safety to maximum utilization by adjusting product and customer mixes.

In the meantime, over the medium-term, we are expecting to see new demand for applications in communications infrastructure along with the spread of 5G, in addition to increased demand for compact large-capacity products for use in communications devices and highly reliable products for use in automobiles. We are allocating management resources to products that address such demand and developing new products, while also implementing initiatives to enhance productivity by promoting the use of smart factories. In addition, we will enhance our range of capacitors to address the diverse needs of our customers, add non-MLCCs such as film capacitors, silicon capacitors to our portfolio, and offer new solutions with high reliability suitable for usage environments in the automotive and healthcare/medical markets.
SAW filters

Operating results
Net sales dropped year on year as sales of SAW filters for smart phones fell due to falling prices.

Business Opportunities
- Increased demand and higher performance due to the introduction of 5G-compatible smart phones
- Electrification of automobiles and electrification through ADAS and automated driving

SAW filters are an essential component for eliminating communications noise to provide a smooth experience for enjoying online content on a smart phone, and are actively working inside various communication terminals including smart phones.

Murata has led the industry for a long time by making use of the R&D structures that can create unique technologies, and distribution channels seamlessly supporting the entire world. At present, Murata holds the largest production capacity in the industry, and has secured a global share of 50% of the SAW filter market for communications applications. SG services with transmission speed more than 100 times faster than current 4G technologies are expected to be commercialized in earnest in 2020, raising expectations for the birth and expansion of new applications and communications devices. Increasingly smaller and higher-frequency SAW filters with superior composite performance will be a requirement. In response to these market needs, Murata will accelerate efforts to create compact products with superior features by utilizing proprietary I.H.P. technologies, TC-SAW technologies, while working to strengthen alliances in new technologies.

Murata aims to contribute to the development of society and industry by working in new technologies. Murata’s monozukuri (manufacturing) capabilities are highly regarded due to their unparalleled characteristics, which are compact and have a high Q (quality factor) value, and adopted in many high-frequency circuits. As for SG communications, the market is expected to expand for RF indicators through their use not only in conventional smartphones but also in new applications such as IoT, and it is considered that the quantity of RF indicators used will increase. Meanwhile, the market for RF indicators is also expanding in the automotive field due to the shift toward electrification such as the introduction of electric vehicles and ADAS and the addition of advanced communication functions of automobiles such as telematics and V2X. As for RF indicators, which are characterized by compactness and high performance, Murata is expanding its lineup of highly reliable designs for automotive applications. With the demand for indicators significantly increasing, we will strive to grasp the market trends and promote the expansion of our production capacity in order to provide a stable supply to meet the demand of our customers.

Inductor (coil)

Business Opportunities
- Stable supply to meet increasing demand due to the introduction of 5G
- Increased demand and higher performance due to the introduction of 5G-compatible smart phones
- Electrification of automobiles and electrification through ADAS and automated driving

A chip inductor is one of the passive components that make up an electronic circuit, along with a capacitor and a resistor. Major products include power inductors used for the power supply circuit and RF indicators used for the high-frequency circuit.

Power indicators are largely related to power conversion efficiency, which is an important performance characteristic of dc-dc converters, and the required performance differs depending on the property of the relevant converter to be used. In addition to traditional processes such as ferrite windings and ferrite multilayer, Murata has added the Metal Alloy process owned by Saitama Murata Manufacturing Co., Ltd. (formerly TOKO, INC.), which became our wholly owned subsidiary in 2016, to its product lineup to achieve further miniaturization and increased performance as well as well-balanced performance at high currents, which is a characteristic of metal alloy technology, and stable performance during operation. By taking advantage of such higher performance of power indicators and Murata’s monozukuri (manufacturing) capabilities as our strength, we are growing our business areas while expanding our sales channels not only into the communications market but also into the in-vehicle system market.

RF indicators are expected to be used as an inductor for high-frequency circuits for 5G communications. The product series that uses the film manufacturing method, which is Murata’s unique process, has been highly regarded due to their unparalleled characteristics, which are compact and have a high Q (quality factor) value, and adopted in many high-frequency circuits. As for SG communications, the market is expected to expand for RF indicators through their use not only in conventional smartphones but also in new applications such as IoT, and it is considered that the quantity of RF indicators used will increase. Meanwhile, the market for RF indicators is also expanding in the automotive field due to the shift toward electrification such as the introduction of electric vehicles and ADAS and the addition of advanced communication functions of automobiles such as telematics and V2X. As for RF indicators, which are characterized by compactness and high performance, Murata is expanding its lineup of highly reliable designs for automotive applications. With the demand for indicators significantly increasing, we will strive to grasp the market trends and promote the expansion of our production capacity in order to provide a stable supply to meet the demand of our customers.

Lithium-ion batteries

Business Opportunities
- Trends toward cordless power tools and gardening tools, and shift from gasoline engines to batteries and motors
- Small batteries for automotive, medical and wearable applications
- Utilization of natural energy, in-house consumption of electricity, and backup power supplies such as data centers

Murata’s lithium-ion batteries are classified into three types: laminated, cylindrical, and coin type batteries. Laminated type batteries are employed in mobile equipment including smartphones, tablets, wearables, and gaming devices; sizes can be freely changed owing to the laminate film exterior material. Murata’s gel electrolytes have safety characteristics because they are leakage-free and do not easily swell compared to liquid electrolytes used by other companies. On the other hand, cylindrical type batteries have advantages particularly in high output applications and are used for a wide range of purposes such as gardening tools, power tools, electric bicycles, and cleaners. Moreover, the use of coin type batteries for wristwatch and automotive applications and in fields such as the medical field is increasing due to their compactness and high reliability. The fiercely competitive environment is expected to continue in the lithium-ion battery market but Murata will address market and customers’ needs by supplying Murata’s products that combine safety and high output. In addition, by integrating storage battery modules equipped with cylindrical cells with power converter technology, etc. to provide an energy management system centered on the housing and industrial markets, we will promote utilization of natural energy.

In the future, we are planning mass production of fully solid-state batteries, which are expected to act as next-generation batteries. We shall develop our business primarily around applications in areas such as wireless earphones and wearables, by applying the manufacturing technologies that we developed for multilayer ceramic capacitors.

In the lithium-ion battery market, the demand is expected to grow continuously. We will provide batteries that can satisfy our customers and society by leveraging the competitive advantages of our batteries, such as high safety and high input/output characteristics.
Every year under the keyword CASE (Connected Autonomous Shared & Services Electric), SG services launched this year. SG includes communications using millimeter wave bands, namely 28GHz and 39GHz, and Murata can offer high-property communication modules that use proprietary multilayer resin substrates to keep transmission loss low. Discussions regarding Beyond SG (6G) standards have already started and we can expect that a world in which everything can be connected through higher-speed communications will be further expanding.

With the rapid progress of the IoT society where all types of objects around us are connected to the Internet, new wireless communication standards such as WFRP 11ax, Cellular LPWA (Low Power Wide Area) and UWBP (Ultra Wide Band) are also expected to spread. In the automotive market, the installation of wireless communication functions and the evolution of communication functions are advancing concurrently. The growth of smart phones, which has been significantly rapid so far, is expected to slow down in the future, at the same time, competition among competitors is intensifying. Under such circumstances, Murata’s connectivity modules continue to provide value in response to various changes, such as SG and new communication standards, by taking advantage of our strengths including proprietary multilayer resin substrates technology, and design technologies to realize compactness, higher performance, high-reliability, and software technologies to enhance connectivity, we will build a partnership that makes us the customers’ number one choice by promptly supplying products that comply with all wireless communication standards.

We will contribute to realizing customers’ issues, through the combination of high-performance materials and Murata’s unique ideas, developed based on our multilayer technology.
Message from the Chairman of the Board

To be a company trusted and supported by all stakeholders

Chairman of the Board

Tsuneo Murata

This past June at the General Meeting of Shareholders and the Board of Directors, the appointment of a new president was approved. Hereafter, the new President Norio Nakajima will lead the company’s management, while I will provide supervision and advice in the capacity of Chairman of the Board.

In order to fulfill our social responsibility, which has been increasingly called for in recent times, strengthening of our governance will become more important. We will also need to build a governance structure that can adapt to a changing business environment surrounding the company. In our endeavor to achieve these objectives, I believe my responsibility is to be involved in the management from a broad perspective while focusing on my role as Chairman, fulfill my obligation to monitor and supervise execution and, in particular, lead the operation of the company in the right direction from the governance viewpoint.

Murata Manufacturing Co., Ltd. shifted its governance structure to The Company with an Audit and Supervisory Committee in 2016, delegated authorities for executing individual duties to lower ranks, and introduced changes to allow the Board of Directors to focus more on discussions and monitoring of the company’s management policies and business strategies.

While doing so, we have endeavored to reinforce measures to introduce and ensure an independent viewpoint and improve transparency of management.

We started to appoint outside executives relatively early, in 1971, and have heeded their opinions and advice, believing in the importance of incorporating the viewpoint of people outside the company. In 2016, when we shifted to the Audit and Supervisory Committee structure, Outside Directors came to represent more than one-third of the Board. We have attached importance to how to have effective discussions, not just numbers. As Chairman of the Board, I make a point of creating an atmosphere in which everyone, both internal and outside directors alike, can express views freely in the Board meetings, and actually feel that discussions are conducted and opinions are exchanged in an open, free and constructive manner. The outside directors have always offered us valuable opinions and specific advice from a medium- to long-term perspective and sometimes given us critical opinions. We have been able to reflect their views in the execution of our management policies and business strategies. From the viewpoint of diversification, we have appointed individuals with diverse backgrounds or expertise as Outside Director, which has made it possible for us to discuss management policies and business strategies from wide-ranging perspectives.

Going forward, I hope to provide solid support to President Nakajima in his pursuit of the two themes of creating a self-governing, decentralized organizational structure and improving management transparency, by enhancing the monitoring function on management policies and business strategies and working to improve the effectiveness of the Board of Directors, while trying to bring out and adopt input from Outside Directors who have diverse backgrounds and expertise.

I believe governance is one of the most important management challenges for us to be able to continue developing and growing in a sound manner, while putting the Murata Philosophy into action. We will continue to work to achieve sustainable growth of the company and improve its corporate value by reinforcing governance while squarely facing and addressing challenges, in order to remain to be a company trusted and supported by all stakeholders.

Our basic views on corporate governance and history of initiatives for reinforcement

Murata considers corporate governance to be one of the highest priorities in management, and we work constantly to establish and operate optimal management systems that will realize sound corporate growth and development while taking into consideration every stakeholder.

In addition to appointing outside executives, we have been 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.

Changes in the number of the Members of the Board of Directors

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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 it allows 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 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.

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. The Group has also established common rules and procedures on decision making which are applicable across the Murata Group members, including domestic and overseas subsidiaries. Business operation of subsidiaries is discussed based on these rules and procedures, and information on business operation of the Murata Group is shared. Matters that satisfy specified criteria are submitted to the Management Executive Committee or the Board of Directors for deliberation and discussion.

Divisions that supervise the various business functions (general administration, personnel, accounting, etc.) of the 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 the Murata Group are conducted appropriately and efficiently, adhering to laws and regulations and the internal regulations, etc. of the company.
Analysis and evaluation of effectiveness of the Board of Directors

The company endeavors to improve the effectiveness of Directors by conducting an analysis and evaluation of the effectiveness of the Board of Directors as a whole once a year and discloses the analysis and evaluation results.

Analysis and evaluation process

A questionnaire for all Members of the Board of Directors and interviews with Outside Directors were conducted. The analysis and evaluation were conducted through multiple discussions in the Board of Directors, making reference to the results of the questionnaire interviews.

Through conducting the questionnaire and interviews, various confirmations were carried out regarding the composition of the Board of Directors, agenda items submitted to meetings, status of deliberation, personal participation of the Director, and other matters related to the operation of the Board of Directors. Implementation, tallying, analysis, etc. of the questionnaire was carried out by a third party.

Results of analysis/evaluation; future issues

Based on the questionnaire results and the analysis and report on the content of interviews, we have determined the company’s Board of Directors is functioning effectively in light of its roles and responsibilities. In particular, we judged that an atmosphere that enables free expression of opinion is being cultivated and broadened and constructive discussions and exchanges of opinion are taking place.

On the other hand, we recognized that we need to step up efforts to address the following aspects:

Ensuring thorough monitoring of the execution of duties related to management policies and business strategy
Enhancing discussions on risk management related to business operation
Enhancing discussions on Environmental, Social and Governance (ESG) initiatives and actions for SDGs
Enhancing supervision on internal control systems at overseas Group companies

Based on these evaluation results and issues to be discussed, the Company will continue working to further improve the effectiveness of the Board of Directors.

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 alignment of business execution, execution of supervision of execution of duties of Members of the Board of Directors) as candidates for Members of the Board of Directors. In recruiting the candidates, we take into account the balance and diversity in the expertise, experience, and capabilities of the Board of Directors as a whole.

Additionally, 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 Murata Manufacturing Co., Ltd.

In particular, 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 in 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

The Nomination Advisory Committee deliberates on criteria for the nomination 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 President, and reports its findings to 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.

Remuneration for Member of the Board of Directors

Policies regarding remuneration

With respect to remuneration for Member 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, and to be 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.

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 with the aim of making them further share 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 and to Member of the Board of Directors who are Audit and Supervisory Committee Members is monthly remuneration only.

Inside Directors (excluding Audit and Supervisory Committee Members) Short-term incentive Medium-term to long-term incentive

<table>
<thead>
<tr>
<th>Position</th>
<th>Monthly remuneration</th>
<th>Bonus</th>
<th>Share-based remuneration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member of the Board of Directors who are Outside Directors</td>
<td>1,000,000 yen</td>
<td>500,000 yen</td>
<td>1,500,000 yen</td>
</tr>
</tbody>
</table>

(Notes) 1. The above numbers include one Member of the Board of Directors (who is not an Audit and Supervisory Committee Member) who retired during the fiscal year ended March 31, 2020.

2. Out of the total shown above, total compensation, etc., provided to six Outside Directors, is 425 million yen.
As many companies around the world are suffering significant falls in earnings amid the spread of COVID-19 infections, Murata, a global electronics component company, has been showing an early recovery from a slowdown by taking advantage of its products that have a broad range of uses and a thorough customer-centric approach. The company is expected to grow further, driven by its aggressive portfolio management and corporate culture centered on the Murata Philosophy. The company sees the need to create new products in the next-generation automotive field, not just in the existing component business, and has set the goals of expanding business by going beyond the boundaries of electronic components and developing specialized human resources in that field. For this, I will offer advice using the knowledge based on my experience and supervise the direction of execution of duties and speed of execution as Outside Director.

I have been given opportunities to express my frank opinions in discussions of topics including corporate governance and development of corporate managers. Murata has aggressively developed and polished its own unique products and technologies in the business field. I believe it has the same passion in addressing its governance. Frank and open discussion at Board meetings is a traditional characteristic of Murata. Over the two years since my appointment as Member of the Board of Directors in 2018, I have witnessed the company’s sincere attitude in working to make its governance even sounder. I believe that the fact that the process of presidential succession, which is the essence of maintaining sound governance, was carried out reliably and securely and corporate management was handed over to new President Nakajima this year embodies how the Company’s governance should look like. A challenge ahead is to nurture new President Nakajima this year embodies how the Company's succession, which is the essence of maintaining sound governance, was carried out reliably and securely and corporate management was handed over to new President Nakajima this year embodies how the Company’s governance should look like. A challenge ahead is to nurture new President Nakajima this year embodies how the Company’s governance should look like.

Complex international relations and global environmental problems in need of urgent measures, coupled with COVID-19, have made it difficult for businesses to navigate their course. Murata has always continued to demonstrate its organizational capabilities and ability to coordinate efforts, while contributing to cultural development through its value creation driven by unique and innovation-led development, global network capabilities, development and provision of unique products, and efforts to conserve energy. While continuing to improve such capabilities, I believe, Murata can become a true global leader by stepping up efforts on its aggressive ESG activities and a sustainable value creation cycle in harmony with all stakeholders. The key to making it happen is to further strengthen the core competencies and governance it has developed since its foundation, develop new products and technologies, develop global human resources with diversity, and improve quality of proactive information disclosure. I will provide my supervision from an unbiased, objective standpoint to ensure that such measures can be designed and executed in a sound, transparent and swift manner.

We are facing increasing uncertainties amid the spread of COVID-19 and rapid advancement in digitalization and changing mindset of people, as well as a series of natural disasters and heightened geopolitical risks. There is a possibility that the so-called once-in-a-century major industrial revolution may accelerate at a pace that goes beyond our prediction. I witnessed the evolution of an international economic order and a substantial shift in industry while working as a government administrative official mainly at the Ministry of Economy, Trade and Industry. From a broad perspective, I would like to raise various issues Murata should address in order for it to be able to continuously increase its corporate value amid a time of major shift. As an Outside Director and Audit and Supervisory Committee Member, I will contribute to Murata’s further growth by listening to the voice of employees at work sites as much as possible to deepen my understanding of the company’s real situations and putting my past experience and knowledge gained in public administration to good use.

A shift from “low” carbon to “post” carbon society has been accelerating, and a paradigm shift in civilization, which is sometimes called the end of the fossil civilization, is taking place. Now that we are entering an era where our past experience and existing knowledge may not necessarily work, an important theme of the Board of Directors is the discussion of what we should change and what we shouldn’t. To further leverage its strengths and minimize its weaknesses, Murata needs to appropriately address complex risks, including ESG risks, which present both opportunities and threats. Such measures can be designed and executed in a sound, transparent and swift manner.

*DX: digital transformation, or use of digital technologies to improve people’s lives
Understanding risks

The responsible department for each risk identifies and evaluates risks that Murata currently faces or may face in the near future and formulates treatment measures twice a year. The Risk Management Committee deliberates those contents, and, if necessary, instructs additional measures. Each risk is classified in accordance with its frequency and impact so that management understands more important and urgent risks to take appropriate risk treatment measures.

Risks associated with business, etc.

Factors that may potentially have significant influence on investor decisions (as of June 26, 2020, the date of submission of the Annual Securities Report) include the following:

1. Risks of fluctuation in demand for our products
2. Risks of product price competition
3. Risks related to stable procurement
4. Risks of reliance on certain suppliers or products
5. Risks associated with development of new technologies or products
6. Risks associated with business expansion in overseas markets
7. Risks related to M&A, business tie-ups or strategic investments
8. Customer credit risk
9. Foreign exchange risk
10. Risks related to funding
11. Risks related to public regulations and compliance
12. Risks related to quality issues
13. Risks regarding environmental regulations
14. Risks due to climate change
15. Risks related to Data Security
16. Risks related to intellectual property
17. Risks related to taxes
18. Risks related to hiring or retaining personnel
19. Risks of suspension of business activities due to natural disasters, infections, etc.

Our initiatives

- **Data Security**
  For Murata to continue to grow, we believe it is essential to protect information that is a company asset, which includes technological expertise and other confidential corporate information.

- **Business Continuity Plan (BCP)**
  Major natural disasters give rise to the risk of halting the company's operation for a long period. In order to fulfill its responsibility to stably provide products to customers, Murata has measures in place to ensure damage is minimized and its business remains in operation by designing a Business Continuity Plan (BCP), ensuring earthquake resistance and safety of buildings and production facilities, maintaining backups for communication and information systems, and maintaining extra inventory to prevent supply disruption.

In the procurement of materials, we operate databases on source locations of materials so that our procurement activity will not be disrupted when risks materialize from natural disasters and we are working to develop ways to quickly implement responses by designing initial response frameworks based on risk scenarios and work-flows. For important materials, we have implemented measures such as maintaining levels of inventory that takes into account expected lengths of time required for recovery in the event of materialization of risks, in addition to diversifying suppliers and confirming the status of BCP measures taken by suppliers, to ensure stable procurement.

In addition, we are working to confirm that planned initial responses are effective, continuously enhance them, improve crisis-response capability and grasp what needs to be improved in our BCP by carrying out counter-disaster and business continuity drills on a regular basis.

- **Initiatives to combat COVID-19**
  Amid the global spread of COVID-19, Murata has set the top priorities of ensuring that employees and suppliers stay safe and healthy and local communities feel secure, and maintaining an uninterrupted supply of Murata products globally, which we believe is our responsibility as a company in global supply chains. At Murata, the Crisis Response Team set up at headquarters has decided and carried out various measures to prevent infection, control spread of infection and ensure business continuity. Specifically, we have introduced measures to prevent employees from being infected, including introduction of telecommuting and staggered working hours, restrictions on business trips, keeping logs of employee movement in company properties, partitions set up in canteens and workplaces, and requesting employees to use self-restraint in their private behavior, and designed BCPs to be prepared for potential infection of employees. We thus have worked to minimize potential impacts on employee health and our business activities from COVID-19 (please see p.56).
Management strategies

Compliance

Corporate Ethics Policy and Code of Conduct

Murata Manufacturing Co., Ltd. established the Corporate Ethics Policy and Code of Conduct in July 2002 and has since revised it from the CSR perspective. Murata has made it clear that it will not deviate from its intention to work as one in doing what is needed to be done for stakeholders and society.

This revised edition of the Corporate Ethics Policy and Code of Conduct has been distributed to Murata Manufacturing Co., Ltd. and its affiliates in Japan. We have also created English and Chinese versions, which were distributed to all our locations outside of Japan in September 2007, adjusted to take into account laws and regulations and social systems of their respective locations, and which have been distributed to all our employees.

Construction of a global compliance system

In May 2014, Murata Manufacturing Co., Ltd. established the “Basic Policy for Prevention of Cartels and Bribery.” Although cartels and bribery are also prohibited in the "Corporate Ethics Policy and Code of Conduct," as a company that develops its business globally, we again disseminated Murata’s basic stance on cartels and bribery throughout the Group.

In addition, we have established internal procedures for applying for permission to entertain people outside the company or offer gifts to such people as a way of maintaining the “Corporate Ethics Policy and Code of Conduct.” By applying for permission to entertain people outside the company or offer gifts to such people, we can ensure that such contacts are handled in a manner that aligns with our intent.

Compliance Promotion

Murata Manufacturing Co., Ltd. has established a Compliance Promotion Committee, a subordinate body of the CSR Management Committee chaired by the President. We are deliberating on, and making decisions regarding, the basic stance on revisions to the Corporate Ethics Policy and Code of Conduct and for the draft and implementation of public activities. The decisions made by the Committee are deployed to the entire Group through compliance promotion meetings. In addition, each department assigns a Compliance Promotion Leader for the role of ensuring employee awareness for the Corporate Ethics Policy and Code of Conduct. These leaders communicate knowledge learned in an e-learning deployment through compliance-promotion meetings, etc. at their respective locations. In April 2008, the President sent a message to employees to raise their awareness about the importance of compliance for Murata’s sustainable growth.

Whistle-blowing system and consultation hotlines

Murata has established an internal hotline to take whistle-blowing reports and consultations if an act within Murata that violates or could violate the Corporate Ethics Policy and Code of Conduct is discovered. In addition, we have established an environment that makes whistle-blowing easier by also setting up an outside hotline to take these kinds of whistle-blowing reports and consultations for the prevention, early detection, and prompt handling of compliance violations.

Taking whistle-blowing reports and Consultations: Checking, Investigating, and Responding

When a whistle-blowing report or consultation about compliance is received by the internal or outside hotline, the Compliance Promotion Committee, the Chairperson of the Committee, and the Secretariat of the Committee lead the process of coordinating with relevant departments as necessary, they check and investigate as far as possible all the facts and the relevant laws and regulations. On that basis, the existence or nonexistence of a compliance violation is recognized and response measures such as recommendations for correction are taken as necessary.

In this process, care is taken to ensure that the privacy of the whistle-blower is protected and the whistle-blower does not suffer unreasonable disadvantages as a result of making the report. When reports are received under a real name, feedback on the progress and results of checking and investigating are given appropriately.

Resource strategies

Message from the Director of Corporate Technology & Business Development Unit

We are actively working to strengthen the foundation for research and development, aiming to ensure sustainable growth over the next 10 to 20 years.

Aiming to expand the range of new technologies further to ensure the “seeds-first” principle is delivered

In recent years, it is increasingly said that the outlook for the electronics market is uncertain. Last year, the U.S.-China trade friction had a significant impact, and this year, the spread of COVID-19 has thrown the market into confusion. For example, although major trends, such as introduction of 5G (fifth-generation mobile communication system) and electrification and automation of vehicles, have emerged, it is still not necessarily clear when demand stimulated by such trends may increase in earnest.

Looking back, we remember the times when miniaturization was the keyword in the electronics component industry. Everyone was pursuing it and knew what had to be done. Currently, by contrast, we are facing the requirement to enhance and diversify technology.

At the same time, there is the issue of the emergence of destructive technologies amid advances in technological innovation. Today’s market has an aspect where no one knows who may initiate what and when against the background of technological innovation. This has become a risk when thinking about business.

What does Murata do in the face of such a situation? The company has a framework in place that allows it to respond precisely without floundering to whatever may happen, as it has an ample range of new technologies supported by its solid foundation of research and development.

We are confident that no one else in the world can beat us on this point. It is my conviction that we can win this battle because Murata’s mainstay product, ceramic materials, cannot be replicated by competitors.

At Murata, efforts to bring about innovation did not start just today or yesterday. As Akira Murata, our founder, once said, “good electronic equipment starts with good electronic components and good electronic components starts with good materials.” Materials technology has been, and will be, what Murata must attach the greatest importance to.

In recent years, our focus is particularly on building up a cluster of new materials. In the past, Murata’s strength was mainly in the area of ceramics. But we have commercialized a group of products that use materials other than ceramics, including SAW filters and MetroCirc™, using an “effusion” approach in which a technological field is expanded gradually.

Furthermore, with a view to the future, there is a materials cluster for which we are working on research and development in a clear departure from ceramics. This includes glass-based materials, metal magnetic powder, and high-performance resin materials.
Resource strategies | Technologies

These are areas we are working on, aiming to make them blossom in 10 years. We have already identified promising materials, and have focused efforts on developing basic technologies, aiming to construct an integrated production system encompassing source materials to products, just as we have done.

We are promoting Murata-style open innovation, carrying out technology scouting. In addition to the pursuit of departure from the “Murata of ceramics,” another new policy in research and development is a shift away from the focus on in-house technology, which brought success to Murata in the past. Needless to say, it remains important for each department to develop core technology secretly, but we have entered an age in which it is essential to take advantage of external resources in the aspect of innovation. For this, Murata has stepped up efforts on open innovation to Murata.

Our new business creation department is focused on developing human resources that can identify innovative technologies outside the company. We are scouting across the globe for innovative technologies that make us say, “This is it!” through these members.

In recent years, Murata has organized technology proposition meeting in regions where rivals have yet to set up operations, including Eastern Europe, as part of efforts to scout for prominent local talent. In the Middle Eastern country of Israel, we had a similar initiative earlier, built relationships of trust, and are beginning to see results in that region.

In such endeavors, we attach importance to accumulating elemental technologies and establishing production processes, including development of equipment, rather than relying entirely on external technologies. By doing so, we aim to build competitive advantages that cannot be replicated by our competitors in the age of open innovation. We believe this will help Murata greatly extend its comprehensive abilities, which encompass processes from creating products from elemental technologies to installing them in the customer’s circuits.

Aiming to create “solution business” through collaboration with external entities

One of the major challenges over a medium to long term in research and development is to build a “solution business,” or a business model in the service field. We aim to provide solutions that address issues faced by society, using the seeds that we have developed through research and development of hardware, such as components and modules, as the foundation and combining software and communication networks with them. This is a way to create businesses for achieving the next generation of growth only Murata, which achieved remarkable success in electronic components, can realize.

It has been five years since we launched this initiative, which has given birth to a series of innovative technologies. One such technology is PIECLEX, a platinum-deposited fiber we developed jointly with Teijin Frontier Co., Ltd. It is the world’s first fabric with antimicrobial performance through the power of electricity. Using piezoelectric technology, a Murata specialty, the product realizes antimicrobial and deodorizing performance by converting expansion and contraction of fibers caused by bodily motions into electricity.

Murata’s goal goes beyond just creating PIECLEX. We envision a technology in which a sheet is formed using the fibers and used as a wearable device worn on the body, so that very weak signals produced by muscles can be collected and analyzed, using sensor technology, another of Murata’s specialties. The data can be used in the healthcare field, for example, for preventing locomotive syndrome. We have already launched a joint project with a Japanese local government that is expected to contribute to promoting the health of the elderly and, ultimately, reducing medical costs.

In India, we have launched a project in which we utilize a sensor that can visualize oil creations to improve the farming environment. In the future, we plan to take advantage of Murata’s unique sensing and wireless technologies to help solve issues faced by society, including those targeted by the United Nations SDGs, through joint research projects with research entities around the world.

In terms of sensing technology, we have begun testing an “emotion and stress analysis” service for manufacturing workplaces, using our wearable device to collect biological information, in a joint project with an overseas startup and other partners. Through this technology, we hope to contribute to improving employee health in the workplace.

In addition, we have developed a technology to detect the influenza virus at an earlier stage by using a field-effect transistor (FET) biosensor that uses graphene, a new carbon material in a joint industry-academia team including university researchers.

Thus, research and development efforts to create a solution business are under way at Murata at a rapid pace. The business is aimed at offering solutions for issues to be faced by a future society. Through this, our objective is to construct a business model as a service. We aim to build a pillar for a new business, aiming to support the company’s sustainable growth, taking advantage of the solid business foundation we have established through the development of components and module technologies.

Going forward, Murata aims to create new markets and innovations by developing technologies and products that anticipate the future, in order to shape the future of electronics. For that, I would like to ask our stakeholders for continued support.

In order for Murata to continue to create new value, we need our technologies to evolve constantly. Murata, which has an integrated production structure encompassing modules to products, has developed unique technologies into platforms so that technologies forming the base can be independently researched, developed, accumulated and applied in product development.

Platform technologies and core technologies

Murata has five platform technology domains, and each platform technology is comprised of several core technologies. Each core technology has been refined over a long period within Murata, and has become a source to differentiate us from competitors and create innovations.

Platforms

<table>
<thead>
<tr>
<th>Materials design</th>
<th>Materials processing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials technology</strong></td>
<td>Materials is the technology to simulate and model material composition, crystal structures, and electrical properties, as well as to disperse and combine these materials while controlling ceramic particle sizes and crystal structures.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analytical technology</th>
<th>Material characterization</th>
<th>Failure analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analytical technology</strong></td>
<td>Analytical technology includes the technology to physically and electronically evaluate material compositions through non-destructive analysis, heat analysis, organic and inorganic analysis, and surface analysis, and technology to identify the cause of failures that occurred in materials and products through the aforementioned analytical methods.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Product design technology</th>
<th>Device design</th>
<th>Embedded</th>
<th>High-reliability design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product design technology</strong></td>
<td>Product design technology includes, mainly, the technology to design RF components and modules, to achieve high-performance small devices using hardware, etc., to achieve high reliability under harsh environmental conditions, and simulation to analyze electromagnetic fields, heat, and stress.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Front-end process technology</th>
<th>Learning &amp; teaching</th>
<th>Printing</th>
<th>Growing</th>
<th>Hands &amp; full fabrication</th>
<th>Surface finishing</th>
<th>Precision mechanical processing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Front-end process technology</strong></td>
<td>Front-end process technology includes, mainly, the technology to laminate ceramic sheets, technology to thinly and accurately form internal electrodes and wirings on ceramic sheets, and technology to form thin films on a submicron level using lithography and etching.</td>
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<table>
<thead>
<tr>
<th>Back-end process technology</th>
<th>Material characterization</th>
<th>Measurement</th>
<th>Automation</th>
<th>Industrial engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Back-end process technology</strong></td>
<td>Back-end process technology mainly includes the technology to achieve miniaturization and high reliability of devices through high heat resistance, connections, and copper wiring, and technology to design equipment that transports extremely small products in different shapes at high speed and with low damage.</td>
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Close Up!

Awarded the Prime Minister’s Prize in the 49th Japan Industrial Technology Awards:

High-density, compact, oxide full solid-state battery with the industry’s highest level of capacity (secondary battery)

Murata has developed a solid-state battery with industry’s highest level* of energy capacity by integrating a process technology used in Murata’s main products, such as multilayer ceramic capacitors and multilayered substrates, with materials technology amassed through the development of cutting-edge electronic components. The battery employs an oxide ceramic electrolyte instead of the electrolytic solution utilized in conventional batteries, making it noncombustible and strongly heat-resistant. The invention won the Prime Minister’s Prize, the highest award, in the 49th Japan Industrial Technology Awards in recognition of innovation and creativity.

The product, which packs high energy density in a compact size and achieves high performance in harsh environmental conditions, is expected to contribute to reducing sizes and improving reliability of wearable devices, which has been difficult to achieve. As the battery excels in safety and durability performance compared to conventional lithium-ion batteries, it is expected to find uses in hearable devices, including wireless earphones, which require high safety standards and are used over a long period, and address widespread needs in the expanding IoT society, helping to create an improving society.

*As of August 2020, according to our own research
Respect for Human Rights and Diversity

We aim to provide a foundation on which diverse employees work autonomously and work in teams, including with people from business partners, so that Murata’s collective strength can be demonstrated.

Revision to Human Rights and Labor Policies

In 2012, we established the Human Rights and Labor Policies,* which complements the CSR Charter established in fiscal 2009. In January 2019, we made substantial revisions to it.

As a result of its business expansion, Murata’s influence on society has increased and expectations of society for Murata have also increased. In light of this situation, after discussing how Murata’s rapid business expansion has influenced people, organizations in local communities and once again analyzing what is expected of Murata, we have revised the policies to align them with declarations by the United Nations, the International Labor Organization, Responsible Business Alliance, etc.

We substantially revised the policies to once again clarify our policy of respecting, protecting, and not violating the basic human rights of each employee and reflect the human rights awareness imbued in the Murata Philosophy and the company’s history. Using these Human Rights and Labor Policies, we aim to ask not just Murata employees to establish a system for education on harassment. We had previously conducting a lecture-style training program, but now include all employees as trainees via e-learning. The e-learning program was introduced in fiscal 2019 and has reached approximately an 80% participation rate. In fiscal 2020, we are expanding the program to include group company employees, aiming to increase the percentage to at least 90%.

We will also promote efforts on LGBT issues and implement online seminars, etc.

Promotion of women’s advancement

As part of efforts to promote respect for diversity, we are also focusing on promoting women’s advancement. Especially in Japan, ensuring of equal opportunities for women is a major issue, and we are working to provide opportunities for growth suited to each individual’s endowments in an equitable manner as part of efforts to promote diversity and inclusion.

We have set a female ratio target for recruiting new graduates for career-track positions, and are conducting a variety of recruitment activities specifically targeting female recruits, such as conducting “Seminars for Rikkeo” (Rikkeo is a woman who majors in science).

Furthermore, we have introduced various systems that are more favorable to employees than required by law, including surplus childbirth childcare leave and temporary school closure leave. We will continue to work to help each employee achieve a good balance between work and family and create value in a condition sound in both mind and body.

Efforts on human rights

We have established a management manual for the Human Rights and Labor Policies, which clearly stipulates specific processes, systems and authorities for respecting and protecting the basic human rights of every individual working for Murata, as well as goal setting and educational systems.

In conjunction with the revision of the Human Rights and Labor Policies, we reformed our system for education on harassment. We had previously conducting a lecture-style training program, but now include all employees as trainees via e-learning. The e-learning program was introduced in fiscal 2019 and has reached approximately an 80% participation rate. In fiscal 2020, we are expanding the program to include group company employees, aiming to increase the percentage to at least 90%.

We will also promote efforts on LGBT issues and implement online seminars, etc.

Creating an environment in which employees can work comfortably

COVID-19 has dramatically altered the environment surrounding health and safety. At Murata, we see it as a great opportunity to take various efforts further.

Measures for COVID-19

Murata has set up a Crisis Management Team headed by the President and established policies to address COVID-19 that call for prioritizing the safety of employees. We are thinking about business continuity, prioritizing measures to ensure employee mental health, not just physical measures to protect them against infection, but also taking measures against the disease on the assumption this situation will remain for an extended period. Based on these objectives, our various functions have coordinated to implement infection prevention measures aimed at ensuring employee health and safety and maintaining business operation. At a manufacturing location in China, which was our first facility to be addressed, we quickly introduced measures including taking employees’ temperatures, urging them to sanitize hands, sanitizing workplaces, and creating infection prevention manuals. These measures served as guides for other operational locations. In Europe and the United States, we introduced telecommuting and sent messages at regular intervals to employees to help mitigate the feeling of isolation. In the Philippines, we ran educational sessions for employees, in addition to taking physical infection prevention measures.

In Japan, we changed office layouts to support avoidance of the three Cs: closed spaces, crowded places, and close contact settings; encouraged telecommuting; introduced a QR code registration system at employee canteens to keep track of their movements; required employees with signs of health issues to keep away from workplaces (with paid and granted special paid leave for employees during closure of their children’s schools), among other measures. At the same time, we set up a hotline for maintaining the mental and physical health of employees, and handed out a collection of ideas for maintaining health while working from home and a booklet offering specific advice on communication and labor management, etc., under emergencies to individuals in managerial positions. Healthcare specialists at operational locations have provided individualized support to employees who had health issues or signs that their conditions may turn serious. The top management also sent messages to employees to express appreciation and thanks for their efforts and urge them to be careful about health.

After the state of emergency declaration was lifted, we regarded the present time as a period of “life with corona,” in which we seek to achieve a balance between ensuring the safety of employees and reducing their stress, and have sent messages on how workplaces should be operated based on medical knowledge.

Safety and health

In fiscal 2020, we launched a fresh effort on safety and health under the concept of “Safety depends on health” by integrating the safety and health function and the health-promotion function into the same entity. One of the issues that has become apparent during the period of “life with corona” is the need to regard employees’ homes as a workplace and work environment as a result of an increase in the number of employees working from home and the prolongation of this situation.

To ensure the safety of remotely working employees, we have created and distributed a self-assessment tool on the work environment and employee health conditions. We linked it with the human resources function. When an employee works remotely, the person is required to confirm safety and health after conducting an assessment based on this tool.

The number of industrial accidents resulting in worker absence was 24 in 2017, decreasing to 10 in 2018 and 12 in 2019 and is remaining stable at that level. The analysis of the industrial accidents that occurred in 2019 found that more than 70% of all cases lacked preliminary risk identification in the risk assessment process. Furthermore, more than 70% of the causes of all accidents were due to unsafe behavior. In response to these results, we set the goal of improving safety and health management and building a culture of safety and launched new initiatives under this goal. Specifically, these initiatives were aimed at improving risk management by reviewing the existing risk assessment process, developing a safety management method that uses a health and productivity management approach, external standards, and IoT systems. We will also work to build a culture of safety by improving safety and health education among personnel in charge of safety and health in the next generation.

We thus aim to develop a work environment with a sense of duty and priority and to enhance safety and health literacy among employees through a two-track approach comprising the obligation of the entire management team to ensure safety of employees and the obligation of employees to maintain their own health by implementing measures from a variety of angles.

*Human Rights and Labor Policies

Human resources
Resource strategies | Human resources

Health and productivity management

In order to sincerely engage in nurturing employees’ health, we established the Murata Health Management Plan in fiscal 2019 as a medium-term policy. We have decided to revise this plan in view of consolidation of health insurance cooperatives and enhancement to databases, as well as a significant change in employees’ awareness of health and safety due to COVID-19. We will work to improve it into a plan that better reflects the current situation by resetting issues under the concept of “down-to-earth health and productivity management.”

Developing human resources globally

Murata has the basic human resources development policy, “Increase individuals’ power to grow, supervisors’ and workplaces’ power to nurture, and the company’s power to make individuals grow.” We carry out initiatives to create a culture where individuals can grow and stimulate each other to grow in accordance with this policy.

Rotation of human resources on a global level

Murata has increased hiring of workers at many locations in preparation for future business expansion in global markets. We have aggressively sought to hire such human resources and in fiscal 2007, launched a rotation system that aims to promote hiring of individuals to positions suited to their skills on the global level. The system enables personnel to learn current Murata location to work at another Murata facility in another country. We rotated a total of 876 individuals by the end of fiscal 2019.

For example, a total of 110 individuals from our Thai production subsidiary (Murata Electronics (Thailand), Ltd.) took the opportunity to work in one of our Japan locations by the end of fiscal 2019, since the introduction of the rotation system. After returning to Thailand, many of the participants in the program play active roles by taking advantage of (1) experience and skills learned systematically in Japan, (2) ways of working and thinking in accordance with the Murata Philosophy, and (3) not only the Japanese language but communication networks established with business divisions and plants in Japan. There are also individuals who were assigned to positions that had traditionally been held by expats from Japan, gained experience in Japan, and, after returning home, assumed important positions as candidates to succeed expats from Japan.

This system has not only helped motivate and train employees but also contributed to laying the groundwork for tomorrow's Murata. The system has contributed to the foundation on which Murata’s operations across the globe can work together to address management challenges.

For example, in “enhancing stress management,” one of the plan’s themes, we aim to revise the content from the viewpoint of how we may go about coping with the significant, unprecedented stress caused by COVID-19 and which group may be affected particularly significantly. Specifically, we introduced an online self-care training program for new employees at operational locations with a high percentage of staff working from home. The program provides an opportunity to learn techniques to cope with stressors, ways to take advantage of consultation, and methods of self-care through group work.

Improvement facilitators playing active roles globally

The improvement facilitator is an internal qualification that recognizes employees who acquire skills required by individuals working in manufacturing workplaces through lectures and in practice and engage in activities to implement improvements. There are about 1,200 improvement facilitators. There are many improvement facilitators in our operations outside of Japan, including local hires and support personnel dispatched from HQ locations.

In addition to on-the-job training held at each operational location, the Takaoka Training Center opened at Toyama Murata Manufacturing Co., Ltd. is equipped with an environment for training programs that combine lectures and hands-on content to support training. Murata employees around the world are participating in training programs and engaging in practices, aiming to become improvement facilitators.

Before improvement facilitators were widely used, specialists were utilized from headquarters to assist improvement activities, but now we are working to establish improvement activities in which things decided by individuals are carried out by them under the philosophy that “people on the ground know affairs on the ground best.”

In addition, improvement facilitators have become indispensable for start-up of mass production, transfer of production operations, introduction of smart factories, in addition to improvement activities at many of our manufacturing facilities.

On such occasions, improvement facilitators play the role of communicating what underlies Murata’s monozukuri (manufacturing) that is not apparent in manuals. Improvement in work processes cannot be done by an improvement facilitator working alone. The key is how to put experience and knowledge to effective use and get individuals around him involved. They nurture Murata’s manufacturing by voluntarily thinking and working with individuals around them and sharing the joy of working together.

Culture of leveraging diverse individual strengths and collaboratively working together

Murata regards diversity and inclusion as accepting and leveraging not only visible diversity such as gender, age and race, but also qualities and strengths such as thoughts, knowledge, experiences, and viewpoints. We are implementing initiatives to develop a culture focused on mutual trust and cooperation.

Promoting philosophy education backed by history

We opened the Murata Innovation Museum a training facility for employees, inside the Nagaoka Division in 2019.

Here, visitors can learn about the background to the Murata Philosophy and passion behind it, the path Murata has followed while treasuring it, and Murata’s global expansions. With this facility, we aim to share our management philosophy and help shape and guide the next generation of our workforce by getting to know Murata’s history of challenges and looking toward the future.

Future expectations for Murata Innovation Museum

We plan to use the museum as a place to promote dissemination of the philosophy to a broader audience by incorporating it into job grade-specific training programs, conducting follow-ups for new hires, conducting training for employees in each region, etc.

Future of business seen through the Murata Philosophy

Murata Innovation Museum has a key role in efforts to promote the dissemination of the Murata Philosophy through operations. We have set up a training room adjacent to the museum to hold workshops using what was learned. For example, there is a business division that, in working out medium-term policies, allows staff members to think about future business after learning anew about the Murata Philosophy and the history of Murata. There are individuals with diverse background in the company, including mid-career hires, employees hired through M&A, and assignees from overseas operations. As a result, we have experienced increasing challenges in sharing the passion behind the policy as we have failed to clearly articulate the characteristics unique to Murata, the passion toward the Murata Philosophy that Murata has treasured and shared among employees which perhaps has been taken for granted.

We learn the Murata Philosophy, which underlies Murata’s DNA and the company’s footsteps that it walked with the philosophy and think about what should be changed and what should be inherited.

First step in disseminating philosophy

Last year, we held study meetings of mainly individuals in charge of education and those who are putting, or plan to put, effort into disseminating the philosophy in each department, with an initial purpose of increasing instructors. We expect these individuals will lead efforts to plan and carry out philosophy and history education programs at their respective workplaces. To enable people who cannot directly visit the museum to feel its atmosphere, we have made it possible to view parts of the museum’s materials by opening a virtual reality (VR) museum.

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In recent years, companies have been asked to contribute to the world’s efforts in transitioning into a circular use of resources and a decarbonized society in order to address serious environmental issues in different parts of the world. In particular, with climate change, companies are facing not only closer scrutiny but also stronger demand for information disclosure.

It has become a major issue for companies to disclose how they grasp and manage risks and opportunities posed by climate change. Murata has set reinforcing responses to climate change and sustainable use of resources as priority issues for the Company to manage and is continuously working towards being able to respond accurately to society’s wide-ranging requirements.

**TCFD measures**

Murata endorsed recommendations by the TCFD*1, established by the FSB*2. We will analyze risks and opportunities brought on by climate change and work to disclose information related to governance and strategies in accordance with the TCFD recommendations.

The followings outlined Murata’s efforts in the four thematic areas specified in the TCFD recommendations, namely, governance, strategy, risk management, and metrics and targets.

**Goverance**

Murata has set up a Climate Change Committee, which meets at least once every six months, to bolster measures for managing risks brought on by climate change across the entire Group. The Climate Change Committee reports to the CSR Management Committee, which is chaired by the President and in turn reports to the Board of Directors. A Vice President in charge and a Director serve as chairperson and vice chairperson, respectively, of the Climate Change Committee, which comprises representatives from related divisions, including production plants, business divisions, and development divisions.

The Climate Change Committee oversees Murata’s greenhouse gas (“GHG”)*3 emissions and develops systems, including relaxation criteria for capital expenditure on energy conservation, to ensure energy conservation measures are taken throughout the company and to promote the introduction of renewable energy. The Climate Change Committee plans to step up efforts in reducing the environmental impact of Murata’s products, particularly in the design phase of production processes.

In 2019, Murata launched an Initiative Promotion Subcommittee, under the Climate Change Committee, comprising managers of relevant divisions, with an aim to reinforce responses to climate change and better serve societal needs.

**Strategy**

We expect demand for Murata’s products to continue growing as more products are computerized; communications equipment acquires more sophisticated functionality and higher speed, and vehicles acquire self-driving functions and are electrified. At the same time, the world faces grave challenges, such as climate change, depletion of resources and increasing income gaps, as highlighted in the international framework of the United Nations’ Sustainable Development Goals (SDGs). Murata has identified these issues as material to our business and as a starting point for us to contribute to resolving these societal issues through our business activities.

**Metrics and targets**

At Murata, we estimate the amount of GHG emissions in accordance with the Greenhouse Gas Protocol, a globally used greenhouse gas calculation standards. We obtain certification on our data from an independent verification body to ensure their reliability.

Our total GHG emissions (Scope 1-2) was 1.47 million t-CO2, down about 0.16 million t-CO2 year on year, in fiscal 2019.

In February 2020, Murata committed to setting emissions reduction targets in accordance with the latest standard by the SBT Initiative*4. Going forward, we aim to look into other climate scenarios and assess potential impact on our business and assets under these scenarios.

**Risk management**

Murata recognizes the importance of managing risks associated with climate change. We believe this requires working out appropriate strategies to identify latent risk factors in a timely manner and enhance the resilience of our businesses to these risks that may materialize. When evaluating Murata’s exposure to climate risks, we will:

- Classify risks into physical and transition types
- Consider time horizon in the short-, medium- and long-term
- Keep watch on regulatory changes in countries and regions where we have operations

In assessing potential impact of risks, we take into consideration both the possibility of being affected and potential degree of impact. The Climate Change Committee reports outcomes of the assessment to the CSR Management Committee and works with other committees, including the Board of Directors and the Risk Management Committee, as necessary.

Currently, we collect information on social developments that may lead to risks, such as moves to tighten regulations, at regular intervals through industry groups. Going forward, we plan to launch a program for exchanging views with stakeholders, to strengthen Murata’s climate change strategies and information disclosure. We believe this new program will help us improve effective assessment of climate change-related risks and the planning of strategies against them.

Our GHG emissions had steadily increased in recent years as we increased production output to keep pace with business expansion as well as M&A’s and new business activities, but we were able to reverse the upward trend in fiscal 2019 through efforts such as energy conservation activities and introduction of renewable energy throughout the year. Through their activities, the Climate Change Committee, we aim to achieve our reduction target of keeping emissions to 1.40 million t-CO2 in 2021.

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*1: Greenhouse gas: gases that cause the greenhouse effect.
*2: Task Force on Climate-related Financial Disclosures
*3: Greenhouse gas: gases that cause the greenhouse effect.
*4: Science Based Targets (SBT) initiative: a joint international initiative by CDP, a globally used greenhouse gas calculation standards. We obtain certification on our data from an independent verification body to ensure their reliability.

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**TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES**

[Diagram of TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES]

[1]: Financial Stability Board
[2]: Task Force on Climate-related Financial Disclosures
[3]: Carbon pricing system: a measure to attribute prices to CO2 emissions and promote reduction in CO2 emissions by the business.
[4]: Representative Concentration Pathways (RCP) 2.6: a scenario developed under the goal of limiting the future rise of atmospheric temperature below 2°C by 2100.
[5]: Science Based Targets (SBT) initiative: a joint international initiative by CDP, a globally used greenhouse gas calculation standards. We obtain certification on our data from an independent verification body to ensure their reliability.

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**Table**

<table>
<thead>
<tr>
<th>Period</th>
<th>GHG emissions (Scope 1-2) [t-CO2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2019</td>
<td>1,406</td>
</tr>
<tr>
<td>FY2020</td>
<td>1,320</td>
</tr>
<tr>
<td>FY2021</td>
<td>1,194</td>
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</tbody>
</table>

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**Notes**

*1: Scope 1: direct emissions of greenhouse gases from owned or managed by a business operator
*2: Scope 2: indirect emissions of greenhouse gases associated with use of electricity, steam or heat
Responses to climate change

Progress of Responses to climate change

Murata has identified the strengthening of climate change measures as material to how we operate our business and as a starting point for us to contribute to this important issue to the wider society. The measures we have taken include introducing unique criteria to assessing capital expenditure regarding energy conservation and actively making energy-conserving capital investment. Our efforts were well-received by external stakeholders, including our rating of the CDP climate change survey, the acquisition of an independent certification on our GHG emissions and active information disclosure. However, our GHG emissions rose sharply in recent years as we increased our production output to keep pace with business expansion. In order to reverse the upward trend and further reduce GHG emissions, we are discussing how to set GHG emissions reduction targets in accordance with the standards of the SBT initiative and adhere to the TCFD recommendations in disclosure of related information. These efforts are led by the Climate Change Committee, which will continue to augment our efforts on further reduction of GHG emissions.

We have also started efforts to optimize energy use in production by developing a new energy management system that combines proprietary sensing and IoT technologies, in addition to existing energy conservation efforts centered on capital expenditures.

In addition, we have joined the Japan Climate Leaders’ Partnership (JCLP), a Japanese group actively committed to the issue of climate change, to leverage exterbak expertise to accelerate our activities and to consider the possibility of launching a business that can contribute to global efforts to combat climate change in collaboration with other participating companies.

Murata believes that managing GHG emissions using the right data and disclosing highly reliable data is the first step towards tackling climate change. We obtained Independent certification on our GHG emissions every year and certification on the amount of our renewable energy-derived power as Murata is actively introducing solar power. To ensure that we achieve the target of keeping emissions every year and certification on the amount of our renewable energy-derived power as Murata is actively introducing solar power.

Introduction of renewable energy

At Murata, we are working to expand the use of renewable energy for power consumed in our business operations as part of our efforts to reinforce climate change measures. As a global company, we have actively introduced solar power in Japan, China and other locations.

In fiscal 2019, consumption of power derived from renewable energy, including electricity from solar power equipment, totaled about 35 million kWh, contributing to the avoidance of about 20,000 t-CO2. We will continue to evaluate the feasibility of introducing renewable energy at both Japan and other countries operations, to help reduce environmental load.

As an example of our efforts to introduce renewable energy in fiscal 2019, we built one of Japan’s largest parking lot-style mega solar systems on a company parking lot with a capacity for 1,200 vehicles owned by Okayama Murata Manufacturing Co., Ltd. (located in Setouchi City, Okayama Prefecture), we started generating power in March 2020. This system increases energy generation efficiency per unit of installed area of solar panels by using double-sided generation panels instead of the more common single-sided panels, enabling light to be absorbed on the back surface in addition to direct sunlight hitting the front. It, therefore, can generate power from light reflected from parked cars and the ground surface as well. We estimate that energy generated by this system is equivalent to average annual power consumption of 600 households, reducing 1,698 tons of CO2 emissions in a year.

In 2021, we plan to add double-sided solar panels to a parking lot area for 500-car parking lot.

<table>
<thead>
<tr>
<th>Scope</th>
<th>Type of greenhouse gas</th>
<th>Emissions (ton-CO2) (Fiscal 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>CO2</td>
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<td>Scope 1</td>
<td>CH4</td>
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<td>N2O</td>
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<td>PFCs</td>
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<td>Scope 1</td>
<td>SF6</td>
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<tr>
<td>Scope 1</td>
<td>Other</td>
<td>0</td>
</tr>
<tr>
<td>Scope 2</td>
<td>CO2 (Plant-power)</td>
<td>1,165,203</td>
</tr>
</tbody>
</table>

Independent certification of climate change measures*

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*1: Carbon Disclosure Project. An international nongovernmental organization (NGO) that surveys and evaluates the environmental initiatives of entities such as companies and cities and publishes the results.

*2: For further information on Independent certification, visit https://corporate.murata.com/en-global/csr/environment_ murata/climate_change

Trend of total GHG emissions

Our GHG emissions had steadily increased in recent years as we increased production output to keep pace with business expansion and due to M&As and new business activities, but we were able to reverse the upward trend in fiscal 2019 through efforts such as energy-conservation activities and introduction of renewable energy throughout the year. Murata’s total GHG emissions was 1.47 million t-CO2 in fiscal 2019, down about 0.16 million t-CO2 year on year.

We will consider a variety of measures to help ensure that we achieve the target of keeping emissions to 1.4 million t-CO2 in 2021. These measures include not just energy conservation but also the use of energy conservation and carbon pricing systems for the entire company, including new plants acquired through M&A.

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Use of Sustainable Resources

Resource recycling initiatives

In recent years, there has been a call for efforts on Use of Sustainable Resources regarding plastics in response to tightening control on import of waste in China and other Asian countries and environmental issues, such as marine contamination. In Japan, especially, the amount of waste that is buried in the ground, instead of being recycled, has increased sharply due to China’s tighter control on import of waste. Under such circumstances, Murata is studying ways to recycle waste materials at a higher quality than typical levels by regularly exchanging information with materials makers in order to maintain “zero emissions.”

Waste management

Murata’s waste management processes are based on “compliance,” “control of the production of waste,” and “zero emissions” as fundamental principles. To help achieve the medium-term target for fiscal 2019 to 2021, we worked in fiscal 2019 toward a single-year target of keeping the amount of waste no larger than the basic unit value in the previous fiscal year. The amount of waste increased in fiscal 2016 to fiscal 2018 due mainly to increased production output, but we were able to significantly achieve the single-year target of keeping the amount no larger than the basic unit value in the previous fiscal year, as a result of reduction measures taken in fiscal 2019, including the introduction of an in-house waste liquid processing facility and concentrating of plating waste liquid.

We are also working to put resources to effective use by, for example, reusing or recycling some packaging materials. We expect to be able to achieve the medium-term goal for fiscal 2019 to fiscal 2021, driven by the introduction of another in-house waste liquid processing facility and reduction in defect rates.

Water resource management

Murata is promoting effective use of water resources used in business activity. We take measures for water risk that can affect our corporate activity. To help achieve the medium-term target for fiscal 2019 to fiscal 2021 of improving the amount of water per production output by 7% from the fiscal 2016-2018 average, we worked in fiscal 2019 toward a single-year target of keeping the amount of water used in business activity. We take measures for water used in business activity. We take measures for water risk that can affect our corporate activity.

Efforts to prevent pollution

In fiscal 2019, we set “Pollution Prevention” as a key issue (materiality) in relation to issues facing society.

In its pursuit of sustainable society, Murata strives to provide products that have low impacts on the global environment.

In addition to efforts to comply with laws and regulations such as the RoHS Directive and the REACH regulations, we have established voluntary standards that take account of global trends. Accordingly, Murata places top priority on the safety of society, local communities and customers regarding equipment related to storage or intra-plant processes. For example, to prevent accidents and pollution (equipment-related) violations of environmental laws and regulations in fiscal 2019.

Chemical Substance Management

Murata recognizes contamination by chemical substances at Murata and customer requests, and actively works to comply with reduction requirements and bans on such substances in our products under the management structure as illustrated in the right figure. Furthermore, Murata has been taking proactive actions to address any revisions in laws related to environmentally hazardous substances.

The current RoHS restricts use of ten types of chemical substances in electronic or electric equipment sold in European Union countries. Of these, restrictions on the use of four specified types of phthalic esters were added in the July 22, 2019 amendment. In July 2017, Murata banned the use of these phthalic esters in new products to be developed, in advance of the enforcement of the amended RoHS Directive. To prevent contamination through contact, we also included packing materials and tools that come into contact with products in production or logistics processes in the scope of the control.

Accordingly, Murata places top priority on the safety of society, local communities and customers in reducing environmentally hazardous substances.

Control of emissions of air polluting substances

We take voluntary measures to control discharge of volatile organic compounds (VOCs), a major air pollutant. Worksites that handle large amounts of VOCs have regenerative thermal oxidizers (RTOs) installed to treat exhaust gas. Usage of RTOs has increased as our production output grew, but the voluntary measure has eliminated 95% of our usage.

Pollution Prevention and Chemical Substance Management

Environmental trends in VOC use and rate of discharge into the atmosphere (Japan)

Soil and groundwater contamination surveys and decontamination

We investigate contamination of soil and groundwater found to have been caused by our past business activity as early as possible. We use the latest purification technology and take active measures, aiming to complete purification processes as early as possible.
Promoting CSR approach to procurement with a focus on partnership with suppliers

With honesty, fairness, and transparency as the guiding principles of its procurement activities, Murata has always sought to build partnerships with its suppliers, working to realize mutually satisfying and prosperous relationships based on the Procurement Policy. Going forward, we will seek to further enhance this principle in order to realize prosperity with all of our stakeholders, without changing these ideas. We will actively work to reduce supply chain CSR risks in relation to procurement, such as prohibition of child labor, forced labor, and gender or religious discrimination, and responsible procurement of minerals.

Murata is currently focusing efforts on the following three areas in its CSR procurement:

(i) We have formulated a Murata CSR Charter, which rests on the foundation of the Murata Philosophy, and, based on this, a statement of “Our Expectations of Suppliers,” and we request that our suppliers comply with both.

(ii) When we establish an account with a supplier, we conclude a CSR Agreement, and we request the supplier to agree to pursue their business activities in conformity with the Code of Conduct of the Responsible Business Alliance (RBA).

(iii) Since 2017, we have been employing a “CSR Compliance Check List.” In addition to enabling our suppliers to self-assess their level of compliance with our CSR requirements, these checklists also make issues visible. By sharing the results of CSR compliance checks with Murata, our suppliers are able to engage in two-way consultations regarding issues and corrective measures, enabling them to realize more efficient and fundamental solutions to any issues that have been discovered.

We periodically conduct assessments based on these checklists each year. In the last fiscal year, compliance checks were carried out on about 110 key suppliers, with 100% of them submitting their self-assessment results and no critical risk identified at the time of the survey.

We believe that in order to effectively put these initiatives into practice, it is important for us to work together with our suppliers based on the partnerships that we have built up with them rather than simply making unilateral demands on our suppliers.

In recent years, we have been required to expand the scope of these CSR activities from companies with which we are directly involved to our entire supply chain. Based firmly on the spirit of the Murata Philosophy, we will continue with our efforts to realize mutually satisfying and prosperous relationships with our suppliers, working to build long-lasting trust and solid partnerships, expanding the scope and increasing the sophistication of our CSR procurement as we strive to realize a supply chain that all of our stakeholders can have confidence in.

In addition, Murata has been working on a company-wide project based on materiality (key issues) originating from social issues on the belief that we should incorporate non-financial issues as represented by CSR and ESG into management strategies. From the procurement viewpoint, we are pursuing this project with an aim to expand the applicable scope of key issues to the entire supply chain. Furthermore, we have adopted the slogan of “realizing CSR procurement that takes into account ESG” as a medium-term policy for procurement divisions and will remain committed to carrying out this policy by incorporating issues from not only our viewpoint but also that of stakeholders.

Specifically, we have set out key issues based on survey points of ESG indices and inquiries from shareholders/investors and customers and clarified their positioning by using a matrix created from the two viewpoints of whether internal efforts are carried out and whether information is disclosed to stakeholders. Furthermore, we have carried out promotion plans by classifying ways to work on the issues into three categories of “Start efforts as a new theme,” “Consider and carry out method of information disclosure,” and “Revise as necessary after rechecking currently disclosed information,” based on the matrix. In the current fiscal year, we have positioned creation of a code of conduct for suppliers and execution of CSR audits on suppliers as particular areas of focus and are working on them.

Promoting “Responsible Minerals Procurement”

Serious violations of human rights have become a social problem in mineral procurement, and interests in responsible mineral procurement are rising.

Murata regards the respect of human rights as part of our corporate social responsibility (CSR) efforts and conducts surveys and provides information in compliance with the industry standards based on our responsive policies. Furthermore, as an internal framework, the CSR Management Committee, chaired by the President, shares information with top management on activities, progress, and any issues regarding responsible mineral procurement, and makes any resulting decisions.

Murata has been working to realize sustainable procurement in line with human rights due diligence, aiming to address serious violation of human rights in supply chains, such as forced labor and child labor under harsh working environments. For example, we have revised policies to expand the scope of risk assessment on responsible minerals procurement to include risks covered in OECD Annex II and the regional scope risk assessment to the conflict-affected and high-risk areas (CABRAs), reformed the structure of regular assessment of minerals supply chain risks on suppliers, and opened a consultation desk on potential issues in minerals procurement.

In response to requests from our customers for our supply chain information, we provide information using the Conflict Minerals Reporting Template (CMRT) issued by the Responsible Minerals Initiative (RMI). Last year we started to provide information on cobalt using the Cobalt Reporting Template (CRT). We also regularly conduct surveys on our suppliers to keep the information updated. Through 3TG supply chain surveys, we have confirmed that products including multilayer ceramic capacitors, which are our mainstay, inductors, thermistors and piezoelectric components are conflict free. In terms of lithium ion batteries, which contain large amounts of cobalt, we have been actively committed to efforts to ensure our products are conflict free, which has included acquisition of responses from about 80% of our suppliers and encouraging smelters among them that were yet to take part in the responsible minerals assurance process (RMAP) to undergo audits. In order to ensure the safety of our minerals supply chains into the future, we will continue surveys and promote initiatives that can lead to mitigating human rights and other risks in supply chains on an ongoing basis by assessing reported information under international standards aligned with the OECD Due Diligence Guidance (please see p. 67) and working with suppliers to achieve improvements.

Murata is also a member company of the Responsible Minerals Trade Working Group of the Japan Electronics and Information Technology Industries Association (JEITA), and of the RMI. By joining organizations that take the initiative in the industry, we are proactively working on issues that are difficult to solve as an individual company, such as creating industry-wide frameworks. We also participate in the JEITA-sponsored Responsible Minerals Souring Inquiry Briefings as a lecturer and have engaged in an activity to encourage smelters and refiners that are yet to participate in the RMAP to undergo audits as a member of JEITA’s smelter-supporting team.

Going forward, Murata will continue to actively work to expand the scope of minerals to include mica, lithium, and graphite and address increases in risks. Furthermore, we will work to ensure transparency of supply chains by working closely with customers, suppliers, and other companies in the industry and remain committed to CSR procurement that takes account of human rights and other risks.

By pursuing and realizing these activities, we will work to ensure safety and peace of mind for our stakeholders.
Efforts in accordance with five steps of OECD Due Diligence Guidance

Murata is working on the initiatives outlined below in accordance with the OECD Due Diligence Guidance, in order to mitigate Annex II risks, such as human rights violations in CAHRAs, in relation to 3TG, cobalt, etc. contained in our products.

Five steps of the OECD Due Diligence Guidance

1. Step 1: Establish strong management systems
   - Murata has established “Responsible mineral procurement policy” and developed a framework to manage Annex II risks in CAHRAs in relation to specified minerals included in our products.
   - We make decisions regarding details and issues in responsible minerals procurement by regularly sharing information with the top management through the CSR Management Committee.

2. Step 2: Identify and assess risks in the supply chain
   - We conduct surveys on smelters and refiners using RMI’s CMRT and CRT at regular intervals.
   - In surveys, we check 3TG and cobalt content and country of origin, and identify smelters or refiners.

3. Step 3: Design and implement a strategy to respond to identified risks
   - We release our policy for this endeavor publicly on our website, etc. and obtain agreement on our efforts based on Murata’s policy from our business partners.

4. Step 4: Carry out independent third-party audits of due diligence practices at smelters/refiners
   - We ask our suppliers to engage in efforts to mitigate human rights and conflict risks in accordance with Murata’s responsive policies for responsible minerals procurement. If a supplier uses high-risk smelters or refiners, we provide information on the risks and discuss with the supplier appropriate measures to improve the situation.

5. Step 5: Report annually on supply chain due diligence
   - We post reports on Murata’s activities publicly for responsible minerals procurement on our website and integrated reports.

Working toward the realization of harmony among people, organization, and society

Murata desires to “be a company whose presence in local communities is a source of pride and joy to those communities.” Making effective use of its resources (employees, expertise, facilities and funds), Murata constantly makes contributions to society and local communities.

Introduction of examples of activities conducted in FY2019

Supporting educational programs through the visiting class to experience programming “Control the Teacher Robot!”

Murata has been holding visiting classes since fiscal 2006, with the aim of having children enjoy and take an interest in engineering, which will help students “acquire a programming mindset ability to think logically,” which is a performance goal set in the government curriculum guidelines for elementary schools. The program was implemented at a total of eight elementary schools in Tokyo, Kyoto, Shiman, and Okayama and attended by a total of 413 students. We will gradually expand our efforts in Japan in coordination with the education sector.

Supporting scientific and technological innovation activities of Chinese university students

We supported the scientific and technological innovation activities conducted by university students that China is contributing to the advancement of science and technology and the solutions to various problems in the humanities and social sciences through the Murata Science Foundation. We supported the scientific and technological innovation activities conducted by university students that China is contributing to the advancement of science and technology and the solutions to various problems in the humanities and social sciences through the Murata Science Foundation.

Supporting the activities of a foundation that provides support to local children in the UK

Employees at the UK Branch of Murata Electronics Europe B.V. helped the refurbishment of a musical academy located in Aldershot (sponsored by the Starburst Foundation), a place where local children with special needs can have a rich experience in dancing, singing, and acting.

Academic support

The Murata Science Foundation was established in 1985 to contribute to the advancement of science and technology through academic promotion. The Foundation provides grants to research activities contributing to the improvement and development of science and technology and the solutions to various problems in the humanities and social sciences. In fiscal 2017, the Foundation began providing grants to overseas universities.

During fiscal 2019, the Foundation provided a total of ¥360 million in grants in Japan, comprising 141 research project grants, 35 study group grants, and 94 cases of dispatch assistance outside of Japan, and provided a total of 10 million yen outside of Japan for 20 research project grants. The cumulative grants since the establishment of the Foundation amount to ¥3.9 billion.

Visit our website to learn more about our other activities. https://corporate.murata.com/en-global/csr/people/suppliers
Analysis of operating results and financial situation

Review of fiscal 2019

In fiscal 2019, the demand for products related to 5G technology (5th Generation Mobile Communication System) has increased; however, the demand for components of wide-ranging uses indicated weakness, due partly to the adjustment of electronic equipment production and electronic component inventory. As for electronic components used for cellular phones, while the number of automobiles sold decreased, the upward trend in the number of components installed per end product continued thanks to improvement in vehicle environmental friendliness and safety. Given such a background, net sales for fiscal 2019 decreased by 2.6% year on year to 1,534 billion yen, as a result of such a background, net sales for fiscal 2019 decreased by 2.6% year on year to 1,534 billion yen, as a result of a decrease in the sales of multilayer resin substrates, lithium ion batteries and multilayer ceramic capacitors for smartphones, despite an increase in the sales of multilayer ceramic capacitors used for cellular phone base stations and car electronics.

Operating income was 253.2 billion yen, down 5.1%, income before income taxes was 254 billion yen, down 5.0%, and net income attributable to shareholders of the company was 183 billion yen, down 11.6% from the previous fiscal year. The decrease in profit was mainly caused by — despite the contribution to income made by cost reduction activities — negative factors including a drop in operating rates, a decrease in product prices, a rise in depreciation and amortization, and stoppages at our overseas production facilities due to the spread of COVID-19. ROIC (Return on Invested Capital) (pre-tax) is established as a priority management index in “Midterm Direction 2021.” ROIC (pre-tax) for fiscal 2019 was 16.3%, down 2.8 percentage points from the previous fiscal year. The decrease in ROIC (pre-tax) was due to a decrease in operating income, in addition to an increase in invested capital, with capital expenditures to expand buildings and equipment, increased cost of funds for capital expenditures to expand buildings and production capacity in anticipation of higher demand for electronic components in the medium- to long-term.

Sales by product

<table>
<thead>
<tr>
<th>Fiscal 2018</th>
<th>FY2018 results</th>
<th>FY2019 results</th>
<th>Increase/decrease</th>
<th>Reasons for increase/decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitors</td>
<td>574.2</td>
<td>559.4</td>
<td>-14.8 (-2.6%)</td>
<td>Sales of multilayer ceramic capacitors increased for use in cellular phone base stations, driven by moves to introduce 5G systems for use in car electronics, but declined year on year overall due to weakness in demand for wide-ranging uses, affected by the adjustment of electronic equipment production and electronic component inventory.</td>
</tr>
<tr>
<td>Piezoelectric components</td>
<td>138.6</td>
<td>129.3</td>
<td>-9.3 (-6.7%)</td>
<td>Net sales dropped year on year as sales of SAW filters for smartphones fell due to falling prices.</td>
</tr>
<tr>
<td>Other components</td>
<td>392.2</td>
<td>363.0</td>
<td>-29.2 (-7.4%)</td>
<td>Although sales of inductors (coil) for smartphones and PCs increased, sales of lithium ion batteries for smartphones and power tools were sluggish, resulting in a year-on-year decline in sales.</td>
</tr>
<tr>
<td>Modules</td>
<td>466.7</td>
<td>478.6</td>
<td>+11.9 (+2.6%)</td>
<td>Sales increased year on year as RF modules for smartphones significantly grew despite a decrease in multilayer resin substrates and connectivity modules for high-end smartphones.</td>
</tr>
</tbody>
</table>

Overview of Financial Conditions

Sales decreased compared to the previous fiscal year due to a decline in sales of connectivity modules and lithium ion batteries for digital cameras.

Sales of multilayer ceramic capacitors for base station increased substantially. In addition, sales increased compared to the previous fiscal year due to an increase in sales of lithium ion batteries for digital cameras.

Sales decreased compared to the previous fiscal year due to a decline in sales of lithium ion batteries and multilayer resin substrates for digital cameras.

Sales decreased compared to the previous fiscal year due to a decline in sales of lithium ion batteries and multilayer resin substrates for digital cameras.

Sales decreased compared to the previous fiscal year due to an increase in sales of multilayer ceramic capacitors for automobiles as the growing trend in the number of components continued, despite a decrease in the number of automobiles sold.

Sales decreased compared to the previous fiscal year due to a decrease in sales of multilayer ceramic capacitors owing to the effects of the inventory adjustments in electronic components, and sluggish sales of lithium ion batteries for power tools.

Overview of Segment Information

Net cash provided by operating activities was 350.3 billion yen. Negative factors — an increase of 141.5 billion yen in non-cash items and an increase in the number of business transactions — were more than offset by net income as a source of cash flow of 228.8 billion yen and depreciation and amortization of 140.7 billion yen.

Net cash used in investing activities was 284.4 billion yen. There were cash outflows due to 2016 billion yen in payment for purchases of property, plant and equipment, mainly for buildings and equipment aimed at boosting production capacity, and 27.7 billion yen for payment for purchases of marketable securities, investments and others.

Net cash provided by financing activities was 17.7 billion yen. Dividend payments of 19.9 billion yen were more than offset by increases in the issuance of corporate bonds to fund capital expenditures and short-term borrowings.

Overview of Cash Flows

Net cash provided by operating activities was 350.3 billion yen. Negative factors — an increase of 141.5 billion yen in non-cash items and an increase in the number of business transactions — were more than offset by net income as a source of cash flow of 228.8 billion yen and depreciation and amortization of 140.7 billion yen.

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Net cash provided by financing activities was 17.7 billion yen. Dividend payments of 19.9 billion yen were more than offset by increases in the issuance of corporate bonds to fund capital expenditures and short-term borrowings.
### Consolidated Balance Sheets

<table>
<thead>
<tr>
<th>Assets</th>
<th>End of FY2018</th>
<th>End of FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>933,941</td>
<td>1,027,227</td>
</tr>
<tr>
<td>Cash</td>
<td>181,956</td>
<td>239,656</td>
</tr>
<tr>
<td>Short-term investments</td>
<td>69,781</td>
<td>106,950</td>
</tr>
<tr>
<td>Marketable securities</td>
<td>27,364</td>
<td>29,554</td>
</tr>
<tr>
<td>Trade notes receivable</td>
<td>4,053</td>
<td>100</td>
</tr>
<tr>
<td>Trade accounts receivable</td>
<td>271,566</td>
<td>281,958</td>
</tr>
<tr>
<td>Allowance for doubtful notes and accounts</td>
<td>(1,510)</td>
<td>(1,026)</td>
</tr>
<tr>
<td>Inventories</td>
<td>349,315</td>
<td>334,408</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>856,453</td>
<td>1,022,210</td>
</tr>
<tr>
<td>Land</td>
<td>68,133</td>
<td>72,707</td>
</tr>
<tr>
<td>Buildings</td>
<td>536,781</td>
<td>633,041</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>1,250,288</td>
<td>1,310,534</td>
</tr>
<tr>
<td>Construction in progress</td>
<td>109,057</td>
<td>133,148</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>(1,107,806)</td>
<td>(1,182,316)</td>
</tr>
<tr>
<td>Investments and other assets</td>
<td>258,499</td>
<td>220,793</td>
</tr>
<tr>
<td>Investments</td>
<td>66,697</td>
<td>49,059</td>
</tr>
<tr>
<td>Intangible assets</td>
<td>47,526</td>
<td>38,576</td>
</tr>
<tr>
<td>Goodwill</td>
<td>78,389</td>
<td>73,032</td>
</tr>
<tr>
<td>Deferred income taxes</td>
<td>42,065</td>
<td>42,220</td>
</tr>
<tr>
<td>Other</td>
<td>23,822</td>
<td>17,906</td>
</tr>
<tr>
<td>Total assets</td>
<td>2,048,893</td>
<td>2,250,230</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>End of FY2018</th>
<th>End of FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current liabilities</td>
<td>259,771</td>
<td>284,300</td>
</tr>
<tr>
<td>Short-term borrowing</td>
<td>23,007</td>
<td>51,000</td>
</tr>
<tr>
<td>Trade accounts payable</td>
<td>75,491</td>
<td>79,330</td>
</tr>
<tr>
<td>Accrued payroll and bonuses</td>
<td>43,485</td>
<td>45,374</td>
</tr>
<tr>
<td>Income taxes payable</td>
<td>38,315</td>
<td>28,294</td>
</tr>
<tr>
<td>Accrued expenses and other</td>
<td>79,473</td>
<td>73,611</td>
</tr>
<tr>
<td>Current operating lease liabilities</td>
<td>23,822</td>
<td>17,906</td>
</tr>
<tr>
<td>Long-term liabilities</td>
<td>184,582</td>
<td>271,223</td>
</tr>
<tr>
<td>Bonds</td>
<td>99,813</td>
<td>149,764</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>394</td>
<td>207</td>
</tr>
<tr>
<td>Termination and retirement benefits</td>
<td>75,789</td>
<td>84,602</td>
</tr>
<tr>
<td>Deferred income taxes</td>
<td>6,673</td>
<td>5,644</td>
</tr>
<tr>
<td>Noncurrent operating lease liabilities</td>
<td>1,713</td>
<td>2,498</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>444,353</td>
<td>555,423</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equity</th>
<th>End of FY2018</th>
<th>End of FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murata Corporation's Shareholders' equity</td>
<td>1,601,976</td>
<td>1,694,104</td>
</tr>
<tr>
<td>Common stock</td>
<td>69,444</td>
<td>69,444</td>
</tr>
<tr>
<td>Capital surplus</td>
<td>120,702</td>
<td>120,775</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>1,493,697</td>
<td>1,616,783</td>
</tr>
<tr>
<td>Accumulated other comprehensive loss</td>
<td>(26,273)</td>
<td>(59,335)</td>
</tr>
<tr>
<td>Unrealized gains on securities</td>
<td>46</td>
<td>(61)</td>
</tr>
<tr>
<td>Pension liability adjustments</td>
<td>(21,574)</td>
<td>(25,999)</td>
</tr>
<tr>
<td>Foreign currency translation adjustments</td>
<td>(4,745)</td>
<td>(3,275)</td>
</tr>
<tr>
<td>Treasury stock, at cost</td>
<td>(53,594)</td>
<td>(53,563)</td>
</tr>
<tr>
<td>Noncontrolling interests</td>
<td>564</td>
<td>703</td>
</tr>
<tr>
<td>Total equity</td>
<td>1,604,540</td>
<td>1,694,807</td>
</tr>
<tr>
<td>Total liabilities and equity</td>
<td>2,048,893</td>
<td>2,250,230</td>
</tr>
</tbody>
</table>

### Consolidated Statements of Income

<table>
<thead>
<tr>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1, 2018 - March 31, 2019</td>
<td>April 1, 2019 - March 31, 2020</td>
</tr>
</tbody>
</table>

| Net sales | 1,575,026 | 1,343,045 |
| Cost of sales | 974,808 | 952,583 |
| Selling, general and administrative | 231,822 | 229,587 |
| Research and development | 101,589 | 102,486 |
| Impairment losses on goodwill | — | 3,934 |
| Other operating income | — | 7,792 |
| Operating income | 266,807 | 253,247 |
| Interest and dividend income | 3,519 | 4,017 |
| Interest expense | (422) | (512) |
| Foreign currency exchange loss | (2,401) | (3,614) |
| Other - net | (187) | 894 |
| Income before income taxes | 267,316 | 254,032 |
| Income taxes | 60,357 | 71,050 |
| Current income tax | 65,036 | 69,127 |
| Deferred income tax | (4,679) | 1,923 |
| Net income | 206,959 | 182,982 |
| Less: Net income (loss) attributable to noncontrolling interests | 29 | (30) |
| Net income attributable to shareholders of the company | 206,930 | 183,012 |

### Consolidated Statements of Comprehensive Income

<table>
<thead>
<tr>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1, 2018 - March 31, 2019</td>
<td>April 1, 2019 - March 31, 2020</td>
</tr>
</tbody>
</table>

| Net income | 206,959 | 182,982 |
| Unrealized gains on securities | 46 | (61) |
| Pension liability adjustments | (4,745) | (4,425) |
| Foreign currency translation adjustments | 1,874 | (28,588) |
| Other comprehensive income (loss) | (2,385) | (33,120) |
| Comprehensive income | 204,574 | 149,862 |
| Less: Comprehensive income (loss) attributable to noncontrolling interests | 29 | (30) |
| Comprehensive income attributable to Murata Corporation | 204,559 | 149,950 |
Consolidated Statements of Cash Flows

<table>
<thead>
<tr>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1, 2018 - March 31, 2019</td>
<td>April 1, 2019 - March 31, 2020</td>
</tr>
</tbody>
</table>

### Operating activities
- **Net income**: 206,959 182,082
- **Depreciation and amortization**: 124,419 140,267
- **Losses on sales and disposals of property, plant and equipment**: 3,284 2,477
- **Impairment losses on long-lived assets**: 25,511 23,756
- **Impairment losses on goodwill**: 3,934
- **Provision for termination and retirement benefits, less payments**: (504) 2,719
- **Deferred income taxes**: (4,676) 1,923
- **Changes in assets and liabilities**:
  - **(Increase) decrease in trade notes and accounts receivable**: (16,852) (14,481)
  - **(Increase) decrease in inventories**: (59,250) 8,680
  - **(Increase) decrease in prepaid expenses and other**: 10,120 (4,185)
  - **Increase (decrease) in trade notes and accounts payable**: (24,140) 4,492
  - **Increase (decrease) in accrued payroll and bonuses**: 5,474 2,209
  - **Increase (decrease) in income taxes payable**: 13,521 (9,631)
  - **Increase (decrease) in accrued expenses and other**: (4,108) (690)
- **Other - net**: 87 5,882
- **Net cash provided by operating activities**: 279,842 350,334

### Investing activities
- **Capital expenditures**: (291,581) (285,935)
- **Payment for purchases of marketable securities, investments, and other**: (25,792) (27,018)
- **Maturities and sales of marketable securities, investments, and other**: 28,853 30,666
- **(Increase) decrease in long-term deposits and loans**: (1,169) 5,913
- **(Increase) decrease in short-term investments**: (16,417) (10,781)
- **Acquisition of businesses, net of cash acquired**: (563) (479)
- **Other - net**: 2,928 3,203
- **Net cash used in investing activities**: (303,743) (284,431)

### Financing activities
- **Net increase (decrease) in short-term borrowing**: 9,507 27,993
- **Proceeds from long-term debt**: 42 98
- **Repayment of long-term debt**: (259) (711)
- **Proceeds from issuance of bonds**: 99,813 49,889
- **Dividends paid**: (57,579) (59,926)
- **Other - net**: 22 (193)
- **Net cash used in financing activities**: 51,546 17,650
- **Effect of exchange rate changes on cash and cash equivalents**: 2,248 962
- **Net increase (decrease) in cash and cash equivalents**: 29,895 84,515
- **Cash and cash equivalents at beginning of year**: 187,910 217,805
- **Cash and cash equivalents at end of year**: 217,805 302,320

### Additional cash and cash equivalents information
- **Cash**: 181,956 239,656
- **Short-term investments**: 69,781 106,950
  - **Short-term investments with the original maturities over three months**: (33,932) (44,286)
- **Cash and cash equivalents at end of year**: 217,805 302,320

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**Company overview**

- **Trade name**: Murata Manufacturing Co., Ltd.
- **Date of incorporation**: December 23, 1950 (established in October 1944)
- **Common stock**: 69,444 million yen
- **Locations**:
  - **Head Office**: 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555
  - **Branches**: Tokyo Branch, Shibuya-ku, Tokyo
  - **Subsidiaries in Japan**: 28 companies
  - **Subsidiaries outside of Japan**: 62 companies

**Stock information (as of March 31, 2020)**

- **Number of shares outstanding**: 675,814 thousand shares
- **Number of shareholders**: 94,712 persons

**Ownership breakdown**

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Number of shares (unit: one thousand)</th>
<th>Ownership (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities Firms</td>
<td>9,797</td>
<td>1.4%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>270,260</td>
<td>40.0%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>25,619</td>
<td>3.8%</td>
</tr>
<tr>
<td>Japanese Companies</td>
<td>36,017</td>
<td>5.3%</td>
</tr>
<tr>
<td>Own Shares</td>
<td>9,797</td>
<td>1.4%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>66,955</td>
<td>9.9%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>40,526</td>
<td>6.3%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>11,968</td>
<td>1.9%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>15,780</td>
<td>2.5%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>15,722</td>
<td>2.5%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>12,002</td>
<td>1.9%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>10,741</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

**Major shareholders**

- **The Master Trust Bank of Japan, Ltd. (Trust Account)**: 40,526 6.3%
- **Japan Trustee Services Bank, Ltd. (Trust Account)**: 22,083 3.5%
- **SSBTC CLIENT OMNIBUS ACCOUNT**: 16,512 1.6%
- **The Bank of Kyoto, Ltd.**: 15,780 2.5%
- **Meiji Yasuda Life Insurance Company**: 15,722 2.5%
- **JP MORGAN CHASE BANK**: 12,002 1.9%
- **Japan Trustee Services Bank, Ltd. (Trust Account 5)**: 11,968 1.9%
- **Japan Trustee Services Bank, Ltd. (Trust Account 7)**: 11,850 1.9%
- **JP MORGAN CHASE BANK**: 10,741 1.7%

**Stock exchange listing**

- **Japan**: Tokyo Stock Exchange First Section
- **Overseas**: Singapore Exchange

**Locations**

- **Head Office**: 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555
- **Branches**: Tokyo Branch, Shibuya-ku, Tokyo

**Subsidiaries**

- **Subsidiaries outside of Japan**: 62 companies
- **Subsidiaries in Japan**: 28 companies

**Trade data**

- **Common stock**: 69,444 million yen

**Major shareholders**

- **Meiji Yasuda Life Insurance Company**: 15,722 2.5%
- **JP MORGAN CHASE BANK**: 12,002 1.9%

**Other significant matters concerning shares**

- The Company implemented a three-for-one common stock split, effective April 1, 2019, and number of shares outstanding increased to 675,814 thousand shares.

**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.

**Company overview**

- **Trade name**: Murata Manufacturing Co., Ltd.
- **Date of incorporation**: December 23, 1950 (established in October 1944)
- **Common stock**: 69,444 million yen
- **Locations**:
  - **Head Office**: 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555
  - **Branches**: Tokyo Branch, Shibuya-ku, Tokyo
  - **Subsidiaries in Japan**: 28 companies
  - **Subsidiaries outside of Japan**: 62 companies

**Stock information (as of March 31, 2020)**

- **Number of shares outstanding**: 675,814 thousand shares
- **Number of shareholders**: 94,712 persons

**Ownership breakdown**

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Number of shares (unit: one thousand)</th>
<th>Ownership (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities Firms</td>
<td>9,797</td>
<td>1.4%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>270,260</td>
<td>40.0%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>25,619</td>
<td>3.8%</td>
</tr>
<tr>
<td>Japanese Companies</td>
<td>36,017</td>
<td>5.3%</td>
</tr>
<tr>
<td>Own Shares</td>
<td>9,797</td>
<td>1.4%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>66,955</td>
<td>9.9%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>40,526</td>
<td>6.3%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>11,968</td>
<td>1.9%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>15,780</td>
<td>2.5%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>15,722</td>
<td>2.5%</td>
</tr>
<tr>
<td>Foreign Companies</td>
<td>12,002</td>
<td>1.9%</td>
</tr>
<tr>
<td>Individual Investors &amp; Others</td>
<td>10,741</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

**Stock exchange listing**

- **Japan**: Tokyo Stock Exchange First Section
- **Overseas**: Singapore Exchange

**Locations**

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One year at Murata

In fiscal 2019, under our new Mid-term Direction 2021, we positioned the telecommunications and automotive markets as our focus markets and strengthened our efforts to make these markets the pillars of our medium- to long-term earnings. In addition, in order to achieve one of the themes of our Mid-term Direction, “harmony among people, organization and society,” we worked on creating the foundation for sustainable growth through our efforts to reduce water consumption at our plants and the implementation of measures against climate change.

**Product-related news**

Launch of worker safety monitoring systems utilizing sensor technologies and AI
- Contributing to workers’ health management by monitoring biological information and the working environment.
  

Development of solid-state battery with industry's highest energy density (secondary battery)
- Contributing to denser circuit design and enhanced smartphone functionality.


**Corporate news**

Launch of class visitations to provide programming education to foster logical thinking in May 2019
- Education to experience programming and logical thinking in May 2019


Launch of worker safety monitoring systems utilizing sensor technologies and AI
- Contributing to workers’ health management by monitoring biological information and the working environment.


Murata has been selected for inclusion in the FTSE4Good Index Series
- For socially responsible investing (SRI).


The solid-state battery with industry’s highest capacity (secondary battery) received the Prime Minister Prize awarded in 49th Japan Industrial Technology Awards.
- The award has been given in recognition of the creativity and innovation. The facility is a net-zero energy building (Net-ZEB).


Prime Minister Prize awarded in 49th Japan Industrial Technology Awards.
- High-density, compact, oxide solid-state battery with industry’s highest capacity (secondary battery)


Murata and Google team develop the world’s smallest AI module with Coral intelligence
- Commercialization of the world's first common mode choke coil for automotive ethernet that can withstand temperatures up to 150°C.


Announcement of change of President and Representative Director
- The Company announced that Norio Nakajima was appointed as new President and Tsuneo Murata was appointed as Chairman of the Board in order to strengthen management foundations and enhance corporate value under a new management structure.


Installation of one of Japan’s largest parking-lot-based mega solar systems (equivalent to parking lot for 1,200 cars) by Okayama Murata Manufacturing Co., Ltd.
- We have used a company parking lot for 1,200 cars to install one of Japan’s largest parking-lot-based mega solar systems, in order to promote the use of renewable energy through the installation of solar power generation equipment and to promote our efforts to take measures against climate change.

This pamphlet uses Forest Stewardship Council (FSC) certified paper produced from responsibly managed forests. The inks used for printing are environmentally friendly vegetable oil-based.