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SANKEN ELECTRIC CO., LTD.

The background of the entire page is a high-resolution photograph of the Earth as seen from space. The curve of the planet is visible, showing a mix of blue oceans, white clouds, and brownish-green landmasses. The lighting is soft, suggesting a sunrise or sunset over the horizon.

# SANKEN REPORT 2019



# Sanken Electric Products Have the Power to Solve Social Issues

## Philosophy

### Corporate Philosophy

Our mission is to provide optimal solutions in our core semiconductor businesses for power electronics and peripheral fields, thereby contributing to the advancement of industries, economies, and cultures all over the world.

We will strive constantly to innovate our technological strengths and creative power as we pursue reliable quality. Moreover, we will share our customers' values as we develop our business globally, leveraging our proprietary technologies.

We will respect each of our employees and treat all of them fairly. Our employees will strive to grow as trustworthy individuals and as businesspeople.

We will carry out our duties with a highly ethical perspective as businesspeople who value technology and creativity. We will treat our customers and suppliers with fairness and integrity.

We will strive to maximize our corporate value for the sake of our shareholders, while fulfilling our social responsibilities and striving for harmony with the environment.

# Power Electronics for Your Innovat!on

### Slogan Meaning

Our slogan, "Power Electronics for Your Innovat!on," expresses the essence of our expectations for the medium-term management plan, as we start Medium-Term Management Plan 2018. The slogan embodies Sanken Electric's aspiration as a company to contribute through power electronics to the innovations of its customers, its individual employees, and society.

## Profile

In 1937, the Toho Industrial Research Laboratory was established by Yasuzaemon Matsunaga, then president of the former Toho Electric Power Co., Ltd., as a 50th anniversary project of the company intended to conduct industrial development that is realistically useful to society. Tetsuji Kotani, who was chief of the semiconductor laboratory of the Toho Industrial Research Laboratory, took over the engineers and facilities of the laboratory when it was dissolved at the end of World War II, and established Toho Sanken Electric Co., Ltd. in 1946. Later, in 1962, the company adopted its current name, Sanken Electric Co., Ltd.

The Company established a dedicated semiconductor factory based on results of work on copper oxide and selenium rectifiers that had been ongoing since the research laboratory days. In 1958, we succeeded in creating a prototype for an innovative heat-dissipating silicon diode, and subsequently a silicon power transistor. Thereafter, we grew in step with the electronics industry, establishing a strong position as a power electronics manufacturer. We have kept pace with the changes in the times and provided high-quality solutions in the power supply and peripheral business fields to meet the diverse demands of society and our customers. We will continue as we have done in the past to provide original, cutting-edge products and striving to be a leading innovator in the field of power electronics.

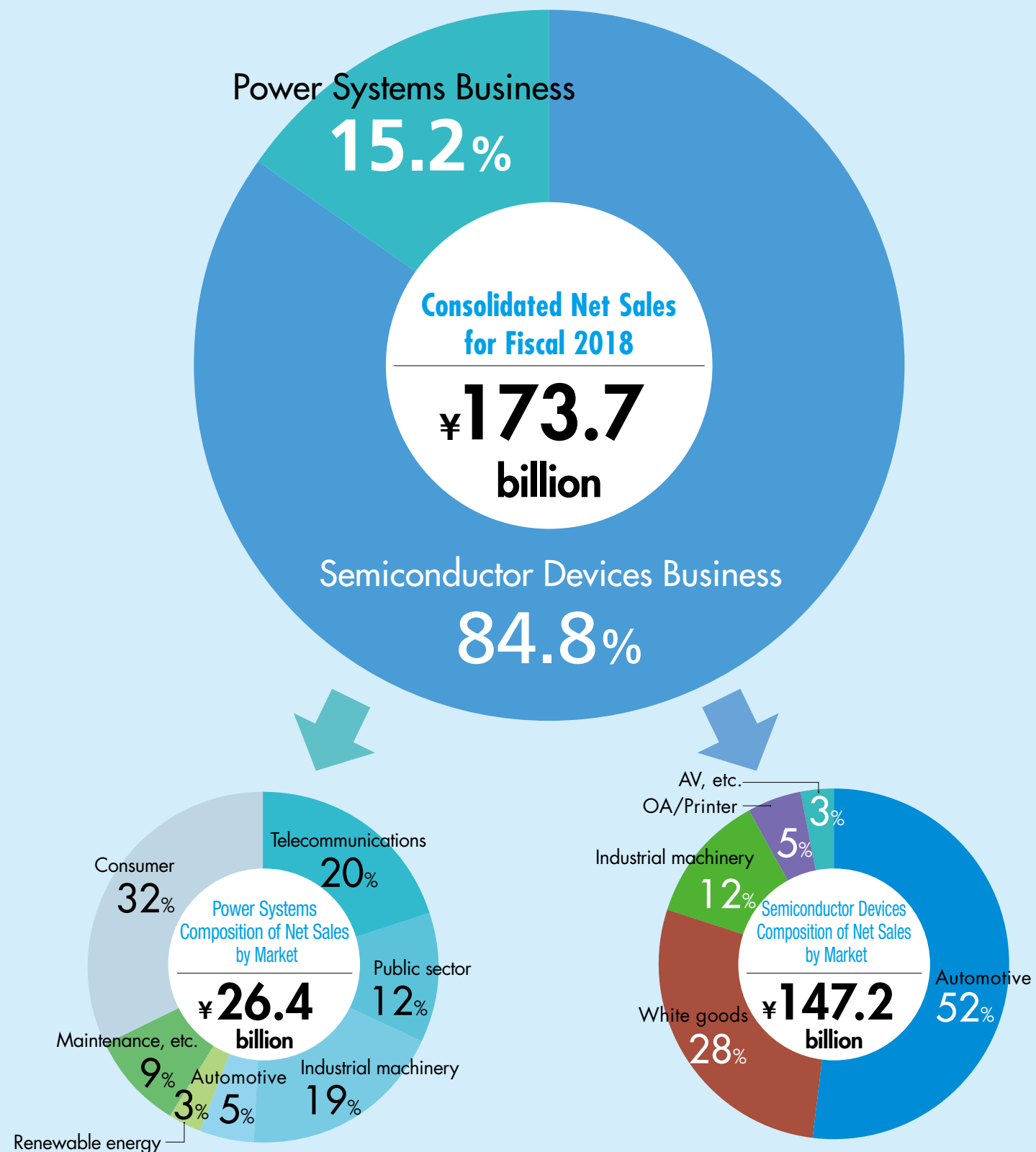
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## Business Summary — Net Sales by Segment

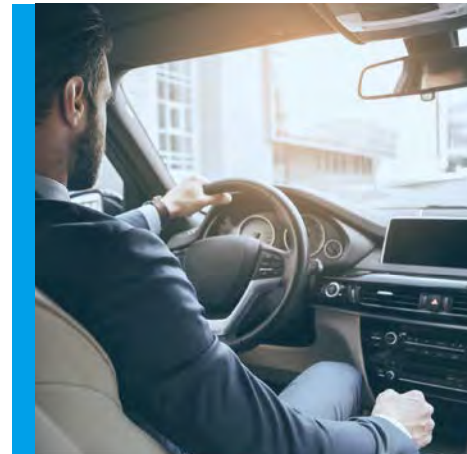
Striving for innovations in our technological strengths and creative power in our core business of semiconductors while promoting global business development



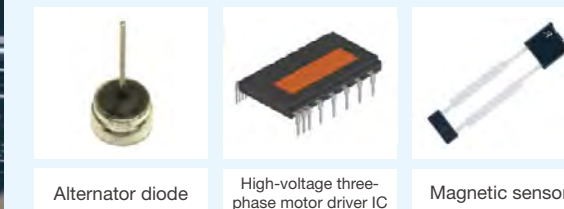
## Main Product Groups

# Sanken Electric's Core Products

### Automotive Products

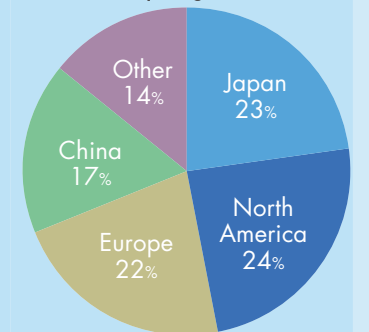


Automotive components are rapidly progressing with electrification in pursuit of comfort, safety, and driving performance. In the past few years we have been steadily adding products for hybrid vehicles and electric vehicles to our existing products, such as alternator diodes and regulator ICs, which have proven to be strong performers. We also have a leading position in the global market for magnetic sensors for automobiles.

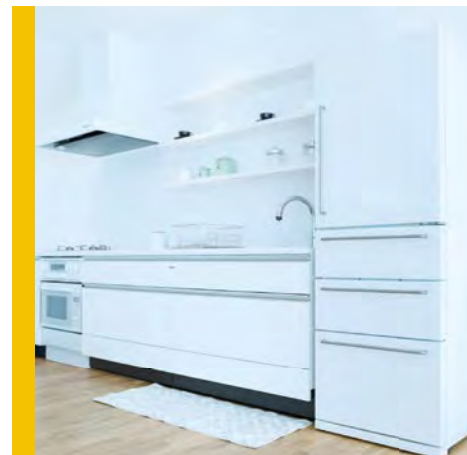


### Net Sales by Region and Market

#### Net Sales of Magnetic Sensors by Region



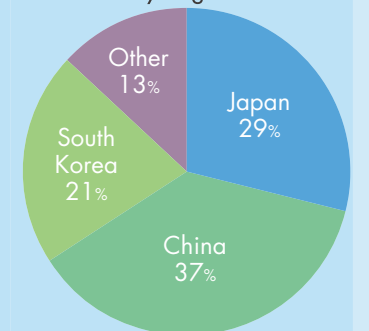
### Products for White Goods



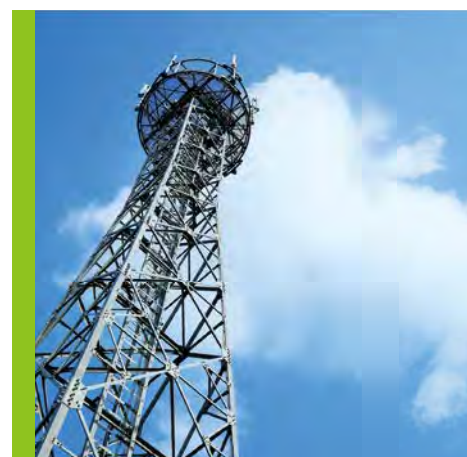
As countries around the world respond to background environmental issues by tightening CO<sub>2</sub> regulations and electricity supply restrictions, the move to adopt energy-saving inverters for electrical appliances such as air conditioners, washing machines, and refrigerators is accelerating. Sanken Electric ICs known as motor driver intelligent power modules (IPMs) are used in inverter white goods, helping to reduce household power consumption from electrical appliances around the world.



#### Net Sales of White Good IPMs by Region



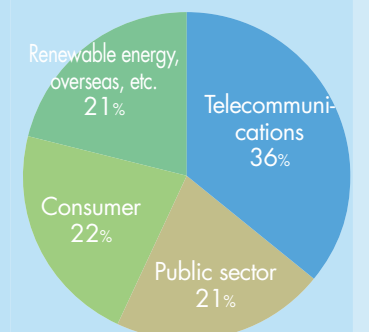
### Products for Infrastructure



Our uninterruptible power supplies (UPSs) are used in public infrastructure markets such as IT equipment and production line machinery. Furthermore, the demand for outdoor power supply equipment, such as for surveillance cameras, and backup for telecom equipment is increasing, and we have a product lineup that has exceptional waterproof and dustproof performance. We also provide power supply equipment for mobile phone base stations, and we are bolstering development of products for the 5G market.



#### Net Sales by Infrastructure Market





## Target Areas

Under Medium-Term Management Plan 2018, the Company has identified the following target areas as growth fields, and is focusing on them.



## To Our Stakeholders

### Anticipating the Changing Era and Moving Forward with Building the Future of the Sanken Group

We at Sanken Electric are working toward innovation in technology and creativity for our core business of semiconductors. Along with promoting business globally through use of our own technology, we are pushing forward with securing a firm management base to increase corporate value to the utmost extent by consistently addressing the demands of society and environmental harmony as a company should. We are currently in the midst of significant changes in the environment that surrounds our business. Awareness and regulations for the natural environment are gaining momentum in newly emerging countries achieving a high growth rate, along with the acceleration of changes due to developments in electric automobile and autonomous driving technologies and the rise of new technologies such as AI, IoT, and 5G. Society's demands for this era are also increasing, such as addressing the SDGs as the targets for sustainable growth in society, responding to diversity in the workplace, and shifting to more effective working styles. With this as a backdrop, we have positioned automotive, white goods, industrial machinery, telecommunications, and renewable energy as five strategic markets in Medium-Term Management Plan 2018, as these markets are expected to expand and could lead society to a new future with the eventual arrival of technological singularity.

In order to survive in an era undergoing remarkable change and address the needs of society, we are gradually increasing our emphasis on ESG management that unifies business activities with CSR activities. In anticipation of this era, we are striving to realize a high-profit company that experiences growth in its own technology and the performance of its employees and organizations within a decade.

I want Sanken Electric to become a company that is recognized by stakeholders for its value in contributing to the further development of industry, the economy, and culture, along with respecting each and every employee in a way that they can experience their growth firsthand.

Therefore, I would like to welcome you all to read this report to gain a deeper understanding of our company's management.



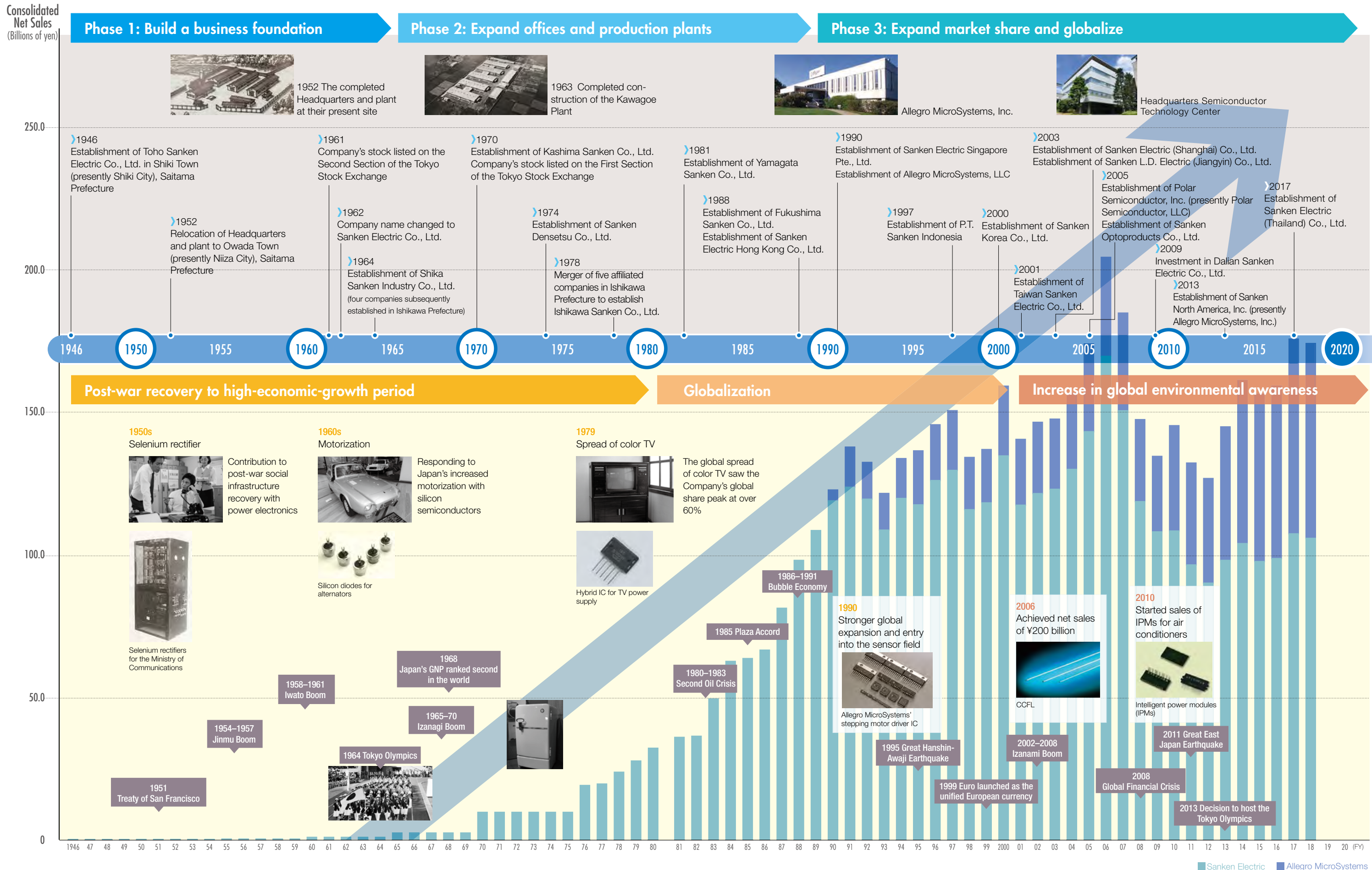
**Takashi Wada**

Representative Director, President



# History of Value Creation

Since its establishment in 1946, the Company has been constantly involved in research and development, meeting the needs of the times and striving to solve global social issues.





Power-saving results  
**4 billion kWh**  
 (Company's own estimate)

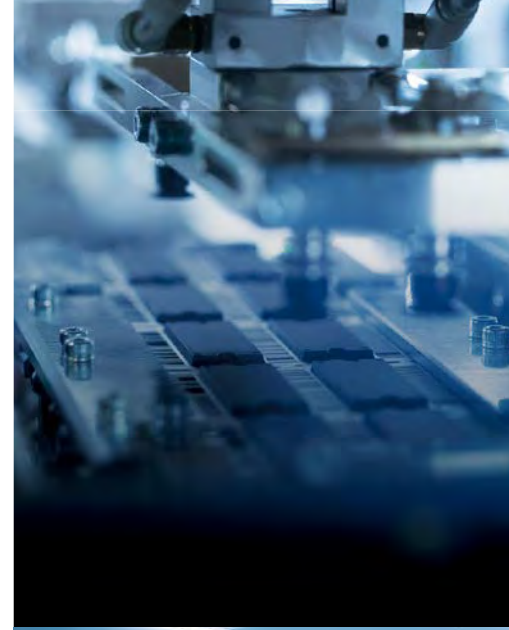
# Product *Innovation*



**Realizing energy conservation on a global scale**

In power semiconductors, Sanken Electric has been developing various products from highly reliable analog power devices to highly-efficient control devices. In recent years, high-voltage motor driver products have seen a drastic expansion in sales volume. Amidst this background, there have been calls for a shift to energy-conserving white goods, such as air conditioners, washing machines, and refrigerators, stemming from environmental awareness on a global scale.

China, for instance, has the strictest environmental regulations in the world. The country is promoting structural reforms that shift from its existing trajectory of high economic growth to an economic society with sustainable growth. The move to inverters for motor control plays a significant role in energy conservation technology used for white goods. As such, inverter motors require control by way of power semiconductors, and our intelligent power modules (IPMs) are often used for these systems. Furthermore, room air conditioners consume the highest amount of electricity among household appliances. Results show that air conditioners with inverters have saved around 30% more energy compared to non-inverter machines. Compared to 100% adoption of inverter air conditioners in the Japanese market, China and other Asian countries have not reached even half of that amount. In China in



particular, there have been movements under the guidance of the government to strengthen environmental regulations toward a goal of 100% adoption of inverter air conditioners within the next few years.

Sanken Electric converted the increased number of inverter air conditioners in the market using the net increase in sales for IPM products in fiscal 2018 and the estimated calculation of the impact on energy conservation for those air conditioners came out to be approximately 4 billion kWh, which is comparable to the annual power generation of a standard medium-sized thermal

power plant. Our IPMs played a part in the results for this immense energy conservation. The result of 4 billion kWh is nearly equivalent to 26 years of total annual electricity usage for Sanken Group companies inside Japan.

Presently, reducing CO<sub>2</sub> emissions has become a global issue that needs to be solved. We have been supporting this movement through innovations in semiconductor technology and manufacturing with consistent quality that has been cultivated in the production of automotive devices for more than half a century. These products have contributed to the

innovations of our customers and society. Thus, demand for our electrical products has been increasing more and more.

- Review of Operations/  
Semiconductor Devices Business .....P22-23
- Global Production Footprint .....P26-27



# Innovation with People

Number of employees  
at overseas bases

64%

(Consolidated basis)

## People—Our Wellspring of Value Creation —Allegro MicroSystems—

(From right)  
**Chairman of the Board of Directors**  
 Allegro MicroSystems, Inc. Yoshihiro Suzuki  
**President and CEO**  
 Allegro MicroSystems, Inc. Ravi Vig  
**Senior Vice President and CFO**  
 Allegro MicroSystems, Inc. Paul Walsh

future of Allegro MicroSystems. We reassessed the product portfolio, switched to a business unit system for the organizational structure, delegated authority and clarified responsibilities while giving out praise and criticism. Furthermore, all aspects of company management were molded after US business practices, instead of superficially imposing Japanese business practices as a halfway measure on Allegro MicroSystems, a US firm. We also concentrated investment on the development of unique products, a strength of Allegro MicroSystems. During the management reforms, we made the logical decision to lay off a large number of employees and shut down the oldest of two plants in the US. This restructuring was executed as a result of diligent discussions between management at Allegro MicroSystems and Sanken Electric based on their mutual relationship of trust. Once the company began to change for the better, people who were initially skeptical became more deeply involved and committed to the actions being taken, transforming the organization into one that

Allegro MicroSystems, Inc. which currently generates around 40% of net sales, has been driving growth for Sanken Electric. Allegro MicroSystems has enhanced its presence on the world stage amid growing demand for magnetic sensors as needs expand for better safety features in automobiles, in addition to the advent of electric vehicles and autonomous driving. Allegro MicroSystems would not be successful today without its history of diligent management reforms that spanned more than 10 years.

Allegro MicroSystems joined the Sanken Group via M&A in 1990. Keen to establish a foothold overseas, Sanken Electric anticipated synergies with Allegro MicroSystems' advanced technological capabilities soon after the

M&A deal was completed. Contrary to these expectations, however, the first 10 years were an unending story about deterioration in business quality. Sanken Electric dispatched four experts in different fields (technology, production, accounting and marketing) from its headquarters in Japan to spend a year there, gaining insight into actual conditions at Allegro MicroSystems and accelerating management reforms. The four experts came to the overall conclusion that Allegro MicroSystems is a group of wonderful people who have the aspiration to work together for a brighter future. The experts also stated that Allegro MicroSystems could return to profitability in short order by returning to the basics of management and

focusing relentlessly on improving the quality of profits, and adding value to products by advancing the development of proprietary and unique technologies. Sanken Electric decided to keep its investment in Allegro MicroSystems and commence earnest management reforms following a heartfelt discussion with local management. During these reforms, a new president was appointed from among candidates at Allegro MicroSystems who agreed with Sanken Electric's vision for the company and who had a strong sense of urgency.

The first order of business was to formulate a strategic corporate vision (SCV) based on exhaustive discussions with local management about the

takes on challenges on its own instead of passively waiting for instructions. Following a Western logical process, this transformation based on relationships of trust between people has laid the cornerstone for growth at the company with a sense of achievement and satisfaction for everyone involved.

Allegro MicroSystems' world presence in magnetic sensors is a case study for successful cross-border M&A, thanks to the human resource management abilities of Sanken Electric, through the building of relationships based on trust between people and communications sensitive to cultural differences.

Global Promotion and Training of Engineers ..... P28-29



# Social Innovation

## Contributions to Local Communities

### —Illuminating the Shiroyone Senmaida Rice Terraces in Wajima—

Contribution to local communities  
**¥3.1 billion**  
economic effect  
(Wajima City Hall estimate)



Naomi Furudo, Wajima City Hall

The Pet Botaru® system installs a solar panel, rechargeable battery and LED into a plastic PET bottle (hence the product name). It is a simple illumination device that generates and stores electricity from solar energy during the day, then automatically turns on the LED when it grows dark. Since the system uses solar energy to generate electricity, rather than fossil fuel, it has earned a tremendous reputation for being environmentally considerate and economical.

Wajima City, Ishikawa Prefecture, is home to “Shiroyone Senmaida,” the name for the numerous sloping rice terraces that overlook the Sea of Japan. The site is so beautiful that it has been designated as one of the famous scenic areas of Japan. The Shiroyone Senmaida terraces of Wajima City cover four hectares, approximately the same area as Koshien Stadium in Kobe. However, in 2007, an earthquake measuring 6.9 on the Japan Meteorological Agency Seismic Intensity Scale struck the Noto Peninsula. Damage to Ishikawa Prefecture was focused in Wajima City, with one fatality, 356 people injured, 684 houses destroyed, and a severe blow to the city’s tourism industry.

In November 2011, an event called “Illuminating the Area around the

Shiroyone Senmaida Rice Terraces in Wajima” was started, in which the LED Pet Botaru® products were used to light up the Shiroyone Senmaida rice terraces. Compared to previous events that used candles, the event lasted around two months longer (currently held for a six-month period from October to March). The Shiroyone Senmaida illumination was held for the ninth time in 2019, and the number of LED Pet Botaru® lights has been increased to 25,000. It has become a source of winter tourism for the Noto area.

According to Ms. Furudo of the Wajima City Hall Industry Division Tourism Department, “Wajima has many tourism spots such as the Shiroyone Senmaida rice terraces, but visitors who stay overnight only

account for around 15% of the total. We have a long-standing challenge to convert day trip tourism to staying tourism. Now that we have overcome the crisis of the Noto Peninsular earthquake and started conducting the wintertime evening illumination event around the rice terraces, we are seeing growth in tourists staying in Wajima in the winter. This is truly an example of a crisis changing into an opportunity.” Sanken has provided its technology in cooperation with Wajima City Hall to help bring back tourists after the Noto earthquake as a CSR activity that is contributing to the local community.

The LED Pet Botaru® product started with a single color, increasing to two

colors in 2013. In 2017, we introduced the Cricket Pet Botaru®, which produces a sound like the singing of a cricket, and in 2018 we created a new model to evoke the four seasons of the Shiroyone Senmaida rice terraces by changing between four colors every 15 minutes, from cherry blossom pink, to rice seedling and tree green, to rice ear gold, and then Sea of Japan wave blue.

CSR Activities with Pet Botaru®.....P30-31

Social Contribution Activities .....P40-41



## Interview with the President

# Exploring Sanken Electric's Fundamental Role in Society

Strong customer relationships developed through robust and reliable products, backed by a track record of more than half a century in power electronics

### How would you describe the essence of Sanken Electric as a company?

In the broad and expansive field of electricity and electronics, I'd describe Sanken Electric as a company whose core business lies in power electronics. Electricity and electronics can be dangerous depending on how they are handled. Even so, they are absolutely essential for people to lead modern lifestyles, and power electronics support the technological foundation for these lifestyles. Sanken Electric is a "global, niche player" in this field, as we have carved out highly niche markets worldwide. In terms of the essence of our business, I'd describe Sanken Electric as a strong behind-the-scenes player. Sanken Electric's fundamental role in society is to conduct businesses that are absolutely vital to society.

### Sanken Electric's specialty is in power semiconductors. What are these devices?

In essence, a power semiconductor is a key power management device that is essential to energy conservation and eco-friendly vehicles. These devices are supporting society's transformation at a fundamental level. While power semiconductors generate a large share of our sales, we look at our business as a power electronics business with power semiconductors at the core. Our mainstay products cover a broad range of areas. We supply power semiconductors as devices to perform vital functions in a variety of equipment, where they are largely hidden from the sight of consumers. Our mainstay products also extend to other fields, such as power supplies for mobile communication base stations needed to ensure that smartphones work properly, large power supplies that serve as backup power sources for lighting in expressway tunnels, and power supply systems to ensure that runway lights provide steady illumination at airports. For this reason, I'd like to add that our businesses encompass not only semiconductors, but also power solutions in peripheral fields.



**Takashi Wada**

Representative Director, President



## Aspirations behind the Medium-Term Management Plan 2018 Slogan: “Power Electronics for Your Innovat!on”

“Sanken Electric seeks to be an enterprise that contributes to society through power electronics—driving innovation for customers, employees and society as a whole.”



### Regarding Medium-Term Management Plan 2018, what is your assessment of the plan's first year?

In fiscal 2017, we had performed largely in line with our plans until around the autumn. As we entered 2019, we started to see a considerable slowdown primarily in automobiles, due to the impact of US-China trade tensions. Regrettably, we finished the first year of this medium-term management plan slightly below our forecasts. In the current fiscal year, the prevailing view was that we would return to a recovery track before summer. However, as time passed, the outlook became more and more uncertain. Generally speaking, when inventory adjustments begin in various stages of the supply chain, these adjustments tend to last for a long period of time in the automotive industry. In the second year of the medium-term management plan, we need to start delivering solid results. However, we expect to steer through some challenging conditions as the business environment comes under intense pressure due to shifts in the global economy. This year will certainly put us to the test. Our success will hinge on how effectively we are able to compensate for the downturn in products for automobiles and industrial machinery with business that is largely immune to the impact of trade issues, such as products for white goods in China.

### In Medium-Term Management Plan 2018, Sanken Electric sets forth three types of innovation and explains how they are related to one another. What are your aspirations behind this idea?

Our customers are seeking to create products that satisfy the needs of society. To do so, some of our customers want to make products that can do more things and perform better. Others want to make products at a lower cost. Clearly, our customers have many different needs. In order to address these needs, we will harness power electronics to propose higher-performing, more energy-efficient products. By making effective use of our proposals and capabilities, our customers may be able to create even better products than they had expected. We believe that these activities will lead to what we call “innovation for customers.”

Today, Sanken Electric has two main applications for its products: automobiles and white goods. With automobiles, safety is an important feature. To establish safety as a core capability, customers pay close attention to the concept of redundancy. Redundancy means that if one system malfunctions, another system will take over and continue to operate. For example, redundancy will prevent an automobile from becoming uncontrollable in the event of a fault in the systems that control critical driving features such as braking and steering. Simply making these systems redundant would cause the cost and size of the systems to double. This approach would not help to solve the problem. In our power electronics business, we work to solve these problems by offering proposals for configuring smaller systems at a lower cost, despite facing technical hurdles along the way. Moreover, Advanced Driver Assistance Systems (ADAS) will start to be used more widely from now on. ADAS will aid drivers by employing various sensing capabilities based on cameras and radar to monitor the environment outside vehicles. We will make semiconductors that operate effectively based on information obtained from vehicle sensors. By fulfilling this role, we will enable customers to achieve what they have sought to accomplish and support them in this way. In white goods, Sanken Electric has a large market share in products for air conditioners. We also supply products for use in refrigerators and washing machines. In this field, we will raise energy efficiency reliably, and we will make a solid contribution to energy conservation as a result. In Japan, all air conditioners already use inverters, but in the rest of the world inverters are used in less than half of all air conditioners. To raise the adoption rate for inverters in air conditioners, we will propose Sanken Electric's intelligent power module (IPM), which will boost the energy efficiency of air conditioners produced by our customers. We believe that proposing this product will contribute to innovation for customers.

Some aspects of what we call “innovation for employees” will lead to innovation for customers. Innovation for employees will also foster a social awareness among employees as they realize

that their work has a positive impact on customers. This will transform the fundamental thinking of every employee and will raise motivation further. Employees will be inspired to learn more, thereby transforming their level of knowledge and awareness. Doing so will lead to innovation for employees.

Looking at “innovation for society,” what follows will summarize what I have already discussed so far. Innovation for society means shaping an even better society by solving social issues through the use of the power electronics products that we make, as we strive to give back to our communities.

Society has been showing a lot of interest in 5G lately. However, we must keep in mind that “5G” refers to a mobile communications protocol. Having a full lineup of telecommunications devices is not enough to realize 5G communications. You can turn on a smartphone if it has a battery, but you cannot use it for even the most basic things like e-mails or voice calls unless there is a cellular base station nearby to facilitate communication between your device and the network. Unless electricity is supplied to those cellular base stations, communication is not possible. We will contribute to society by developing reliable mobile communications infrastructure, including the power supply infrastructure, which serves as the foundation for building the cellular base station network. This infrastructure will transform the daily lives of people and lead to innovation. These are the areas where we are conducting business. One example of our efforts to develop businesses where we build this sort of infrastructure is our activities in Indonesia. Indonesia has many islands that do not have a supply of electricity from the power grid. These locations are known as off-grid areas. In these areas, we aim to supply products that combine our power electronics technology, solar power generation technology, and energy storage system technology for storing electricity. We believe that these products will help us to contribute to society and foster innovation. Moreover, employees who seek to participate in these projects at the national government level must obtain insights and knowledge from many different perspectives with the cooperation of local universities. I firmly believe that these activities have also fostered innovation for each and every employee.

### Sanken Electric has grown worldwide in the automotive industry and has delivered substantial growth in products for white goods, primarily in the Asian region. It is truly living up to your aspirations to solve social issues globally through power electronics, as expressed in your corporate slogan. How do you feel about these achievements?

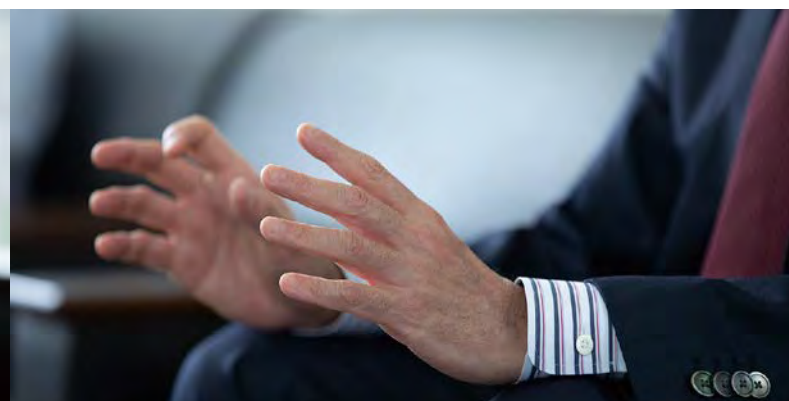
Automobiles and white goods account for a large share of our sales. Under Medium-Term Management Plan 2018, we have positioned five strategic markets, including industrial machinery, consumer electronics and renewable energy, as our growth fields. Industrial machinery includes the telecommunications field discussed earlier, as well as products for robots and data centers. The Sanken brand was originally associated with our strengths in automotive semiconductors. Allegro MicroSystems, Inc., our US subsidiary, also has a high share of automotive products. We already have a track record of more than 50 years in the field of automotive semiconductors, and as more and more electronics are built into automobiles, our approaches have also begun to shift to different areas than before. Previously, our mainstay products were semiconductors for internal combustion engine systems. We are currently working on development projects such as semiconductors for safety systems, as well as semiconductors that cater to eco-friendly vehicles and autonomous driving. In fact, more than half of our development projects have shifted to new fields. We currently develop automotive semiconductors with a lead time of around five years. Internal combustion engine vehicles are now expected to start to peak around 2025. Therefore, we have been steadily shifting development resources to safety, environment and electrification projects in anticipation of the future. The source of power for automobiles will shift from internal



combustion engines to electric motors, and although the technology for autonomous driving is evolving, various computer-based controls will still require electricity. The number of vehicles will not necessarily increase sharply. However, as more and more electronics are built into automobiles, the number of semiconductors installed in each vehicle will increase. That being said, we will have a greater part to play in the automotive industry. Looking beyond the current era, we will explore how automobiles will evolve together with our customers and offer proposals on what we can do. Similarly, we will also increase the environmental friendliness and energy efficiency of white goods. The most effective way to improve efficiency through semiconductors is to focus on the drive components of large-capacity motors, such as compressors and fans. We believe that the best practice will be to improve the efficiency of those components. Sanken's engineers take great pride in their work because they know that they are responsible for components that lie at the heart of products—components that control the rotation speed of motors by controlling the supply of electricity based on detailed calculations made by microprocessors.

Although further refinement is needed, our engineers have made the following estimate regarding the environmental benefit of our products. In the air conditioner market, air conditioners with inverter technology have been gaining ground. Our engineers looked at how the installation of Sanken Electric products in inverter air conditioners and the shipment of these air conditioners would contribute to energy conservation, based on the increase in sales volume of Sanken Electric's products in the past year. They estimated the contribution to energy conservation as an improvement in monetary terms. They found that the energy savings were equivalent to the amount of electricity generated by one medium-sized thermal power plant. Thermal power plants are known to be a major cause of air pollution through CO<sub>2</sub> emissions. If we can reduce the need for one thermal power plant, we can have a considerable beneficial impact on the environment. Visitors to Japan from Asian countries often note that Japan has clean air. We carefully consider how we can solve fundamental social issues by taking full advantage of our technologies. We believe that it is necessary to incorporate this perspective into our activities from the development stage. We further believe that it is important to highlight how our products have helped to solve social issues. This knowledge will motivate employees to tackle the next challenge. If this leads to more innovation, I believe that it will let us recognize our fundamental role in society and how we have created value for society. Therein lies a variety of business opportunities. Also, we intend to implement our business plans in the course of generating the solid profits needed to establish viable businesses.





**Sanken Electric looks at the environment as a business opportunity of sorts. For Sanken Electric, it seems that the environment is inseparable from the SDGs.**

Until now, we did not deliberately pursue the environment as a business opportunity. Certainly, we focused on conducting manufacturing at the highest level, over and above global standards. That was what was expected in automotive supply chains, which have very strict quality assurance systems. I don't want Sanken Electric to get bogged down in trying to figure out how to deal with external standards such as the SDGs. I would like us to incorporate these new global standards skillfully based on what we have achieved to date. I hope this will be an opportunity for Sanken Electric to further enhance and clarify its approach to sustainability. This can also be an effective message to employees.

One example is Sanken Electric's digital power supply ICs, which are used in power supply circuit boards for OLED TVs. By incorporating a variety of external functions into the traditional power supply configuration, we have decreased the number of components and reduced the size of the power supply circuit board by 30%. The customer benefits from a slimmer design and cost reductions. From the perspective of resources, our efforts can be said to lead to the conservation of resources and the reduction of waste materials. Earlier, I compared our energy savings to the output of a thermal power plant. In this way, we need to look at Sanken Electric's development activities and products from new perspectives such as how our products can reduce electricity use. This will give us more ways of looking at things within the Company, thereby generating a wider range of new ideas.

Also, we use a lot of electricity and water in the semiconductor manufacturing process, so we are taking steps to reduce electricity and water usage in our plants. The absolute amount of electricity and water consumption increases in proportion to sales. However, the usage rates for electricity and water relative to sales have been reduced. Together with these environmental measures at Sanken Electric, I believe we need to be aware of our impact throughout the value chain. That is, the use of our products by customers will expand the circle of environmental benefits outward, thereby generating an even greater environmental benefit for society as a whole.

**It must be very difficult to develop products in practice. Could you please share your perspectives on work style reform? What are your thoughts on transforming development efficiency and productivity?**

In order to achieve our targets for Medium-Term Management Plan 2018, we have set KPIs for each business unit. In our development units, KPIs have been set as the sales mix of new

products and the number of new products developed. It will be important to raise efficiency in a limited period of time, so management must create the right environment for employees. Under the Sanken Power Electronics Platform (SPP), we have adopted a policy of no backtracking in development and we are conducting development activities based on a common platform that encourages advancing multiple projects in parallel. With this approach, several business units, such as purchasing, engineering and manufacturing, seek to solve problems at the initial product concept stage when considering the selection of materials, as well as equipment and facilities and manufacturing methods. We must provide the physical space and IT infrastructure needed to implement this approach. The key to success will be how effectively employees are able to harness these resources.

In order to establish this new development environment effectively, the Production Development Center is currently being built on the premises of Sanken Headquarters. At this center, we will enhance our pilot line, along with providing an environment to experiment with manufacturing techniques, amass new manufacturing expertise through prototypes, and pursue other activities. I also believe that engineers will create even better products when they have the opportunity to interact with people who have many different thoughts and ideas and they are exposed to many different influences.

**Sanken Electric has set up design centers overseas and has recruited engineers globally. What has led up to this?**

Let's take a look at a specific region as an example. There are limits on how many semiconductor engineers we can recruit on the east coast in the US. These limits mean that we have no choice but to expand our horizons outside the country.

This initiative began at Allegro MicroSystems in the US. In a multinational society, some engineers wish to return to their home countries. In response, we considered the needs of our engineers, particularly the talented engineers returning to their home countries, and decided to launch design centers in those home countries.

How we manage overseas bases will vary from region to region, among other factors. Take our development center in Taiwan. First, we chose a local leader. We then requested the leader to recruit local engineers. Because the SPP is a development concept, we will be instilling this concept globally. I believe that the idea of stopping the backtracking of development, which has been an issue so far, has actually been embraced positively overseas. We explain this idea to engineers at the initial stage and strive to gain their understanding and acceptance.

Looking ahead, we will enter an era when human resources will be sought from around the world for the foreseeable future. We encourage our employees to study English as a global

common language, and we also offer a one-year overseas training program. Many of the engineers at Sanken Electric's various overseas development centers, which were launched in the previous year, formerly worked at European and US firms. Therefore, engineers seem to be holding frequent and in-depth discussions on development work practices that had been taken for granted within Sanken Electric up to now.

**I believe that one of the strengths of Sanken Electric's business portfolio is that its main applications are automobiles and white goods. Conversely, what kinds of risk are associated with these applications?**

In the white goods market, the downturn in the Chinese economy is a direct risk in itself. While we don't think environmental regulations will be eased, we could see some delays in regulatory progress due to the impact of economic conditions.

In the automotive field, the impact of US-China trade friction can be considered to be a risk. However, I believe the greatest risk is a decrease in global automobile sales volume. It is generally believed that autonomous driving and car sharing will reduce the total number of automobiles. That said, the number of semiconductors used in automobiles is expected to increase as more and more electronics are built into automobiles. Therefore, I'm not overly concerned about this risk at present.

**What do you think are Sanken Electric's new business fields in light of your road map and medium-term management plan?**

I believe there are markets we can enter in the overlapping areas between the Semiconductor Devices and Power Systems Businesses, which are areas where we can capture technical synergies. One notable example is the 5G market that I discussed earlier in this interview. As we move into the 5G society, ultra-small base stations should be needed in new spectrum bands such as the 28 GHz band. Because these radio waves can travel for only several hundred meters, antennas will be installed in traffic lights, utility poles, buildings, and other urban infrastructure. Sanken Electric would like to offer new proposals by combining large power supplies for cellular base stations in the Power Systems Business and modular technologies in the Semiconductor Devices Business, as well as adding capabilities such as wireless power supply. There are also possibilities in the motor control of robots. The control of motors employs the same technology as the drive technology for air conditioners. However, the motor control of robots requires even more power. Therefore, we will need technologies that fuse power systems and semiconductor device technologies. We would like to create a core business in these areas and use it as a stepping stone to the next generation of innovation.

**In closing, could you please discuss your initiatives to address corporate governance and CSR activities? Could you also comment on the potential for expanding these initiatives from a sustainability perspective?**

On the governance front, as part of efforts to streamline management and improve transparency, we will make the composition of the Board of Directors more diverse. We invited the following individuals to serve as external directors: Mr. Richard R. Lury, a US lawyer; Mr. Noriharu Fujita, a certified public accountant; and Ms. Emiko Higashi, who is well versed in international business. The Nomination Committee and the Compensation Committee were set up in the fiscal year ended March 31, 2019. These committees have begun their activities in earnest. They will conduct management of the election/dismissal and assessment of directors, as well as performance-linked compensation and other matters.

In terms of our activities to contribute to regional communities, we hold environmental and craft-making workshops for elementary and junior high school students in various regions. We strive to foster environmental awareness among future generations and revitalize communities. These activities feature solar panel-equipped LED lamps called Pet Botaru®, which make use of products developed by Sanken Electric.

In our business environment, we see strong prospects for growth. What remains is to ensure that we can rise above the competition in this environment. Bearing in mind the competition with other companies, we will create a positive cycle where we develop a solid road map based on an accurate reading of the future, enhance technologies and manufacturing capabilities to generate added value, and use the profit we generate in the process to pave the way for the next phase of technological development. We believe that the ideal path for the Company to follow in the future is to remain firmly aware of our responsibility to contribute to society in addition to generating profits.

At the Sanken Group, we aim to contribute positively to the development of industry, economy, and culture in various regions around the world through our business activities. With this overarching goal in mind, we will incorporate the principles of the SDGs into our business activities. In the process, we will consider which SDGs to approach in our business activities and strive to remain aware of them at all times.

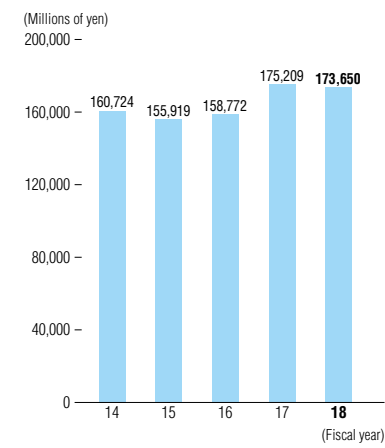
We would like our shareholders and all other stakeholders to hold positive expectations for the development of the Sanken Group in the future. We ask for your continued support as we endeavor to reach our goals.



# Financial Highlights

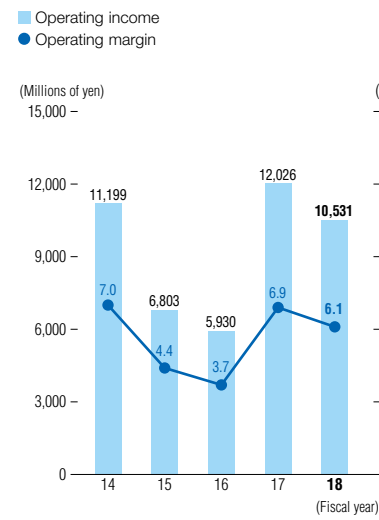
## Net Sales

**173,650** (¥ million)



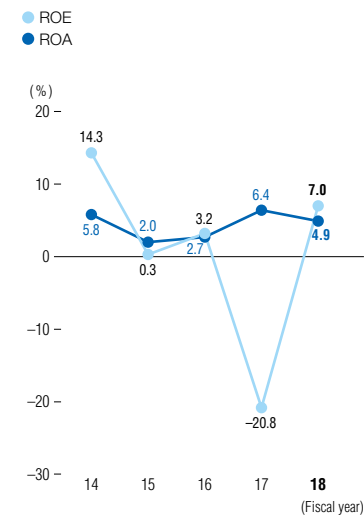
## Operating Income/Operating Margin

Operating Income **10,531** (¥ million)  
Operating Margin **6.1** (%)



## ROE/ROA

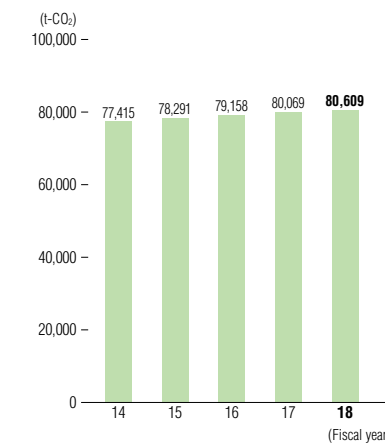
ROE **7.0** (%)  
ROA **4.9** (%)



# Non-Financial Highlights

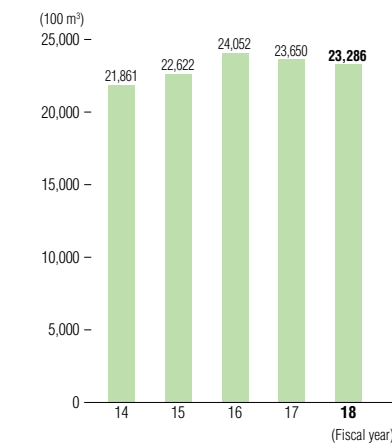
## CO<sub>2</sub> Emissions (Total for Domestic Manufacturing Sites)

**80,609** (t-CO<sub>2</sub>)



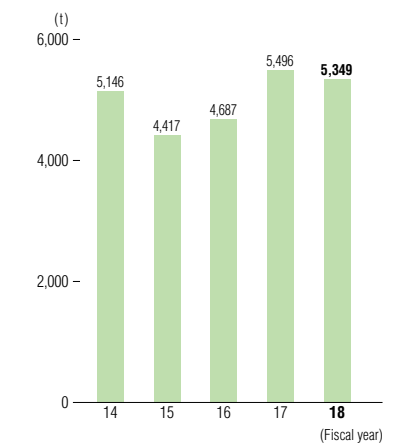
## Water Usage (Total for Domestic Manufacturing Sites)

**2,328,615** (m<sup>3</sup>)



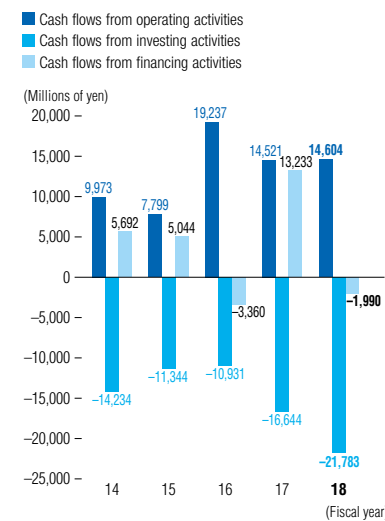
## Waste Emissions (Total for Domestic Manufacturing Sites)

**5,349** (t)



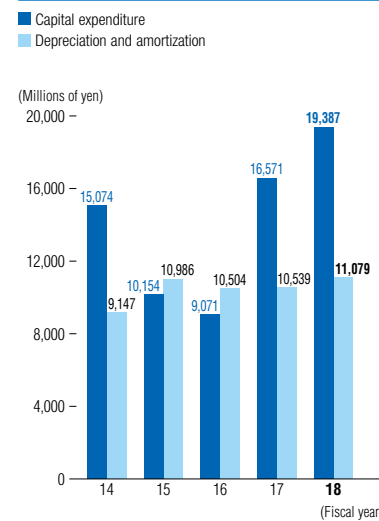
## Cash Flows

Cash Flows from Operating Activities **14,604** (¥ million)  
Cash Flows from Investing Activities **-21,783** (¥ million)  
Cash Flows from Financing Activities **-1,990** (¥ million)



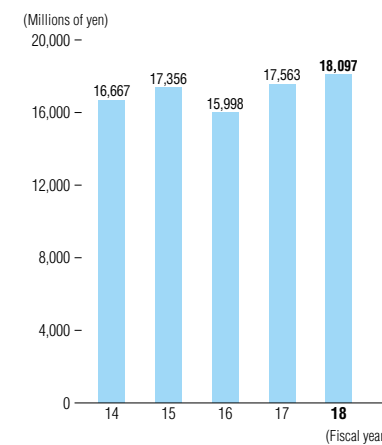
## Capital Expenditure / Depreciation and Amortization

Capital Expenditure **19,387** (¥ million)  
Depreciation and Amortization **11,079** (¥ million)



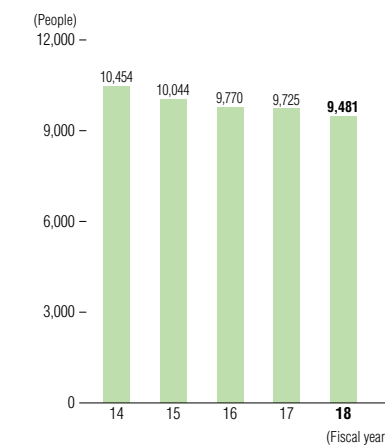
## R&D Expenses

**18,097** (¥ million)



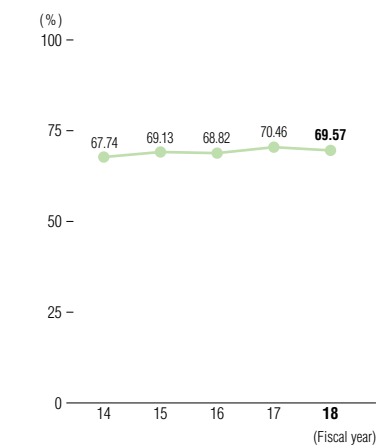
## Number of Employees (Consolidated)

**9,481** (people)



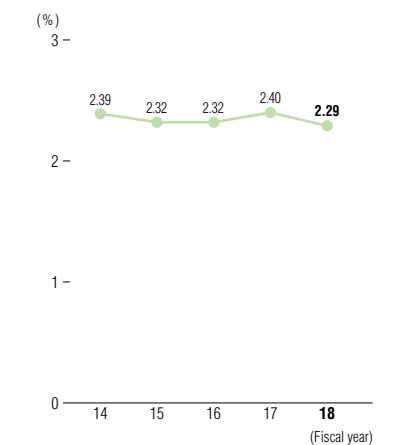
## Rate of Paid Annual Leave Usage (Sanken Electric (Non-Consolidated))

**69.57** (%)



## Employment Rate of People with Disabilities (Sanken Electric (Non-Consolidated))

**2.29** (%)





## Review of Operations Semiconductor Devices Business

We will promote the development of proprietary technologies and provide products that meet customer needs.



**Masao Hoshino**  
Director and Executive Vice President  
General Manager of Device Business  
Corporate Headquarters

The Semiconductor Devices Business is the core business of the Sanken Group, with main products ranging from ICs and transistors to diodes, LEDs, and Hall-effect sensors. Most of our semiconductor device products belong to the field of power electronics and are used as key components in all kinds of fields, including automobiles, home appliances, industrial machinery, audio visual (AV) and office automation (OA) equipment, telecommunications equipment and LED lighting. Sanken Electric and its subsidiary, Allegro MicroSystems, LLC, strive to promote development of proprietary technologies, and to provide products that meet customer needs.

### Fiscal 2018 Results

**Net Sales** ¥147.2 billion **Operating Income** ¥13.0 billion

Sales in the Semiconductor Devices Business for fiscal 2018 (the year ended March 31, 2019) increased 2.3% over the previous fiscal year to ¥147,211 million.

In sales by market, in the mainstay automotive market, sales of products decreased by 0.8% from the previous fiscal year to ¥76,442 million. This mainly reflected flagging sales in the second half of the fiscal year due to the impact of an economic slowdown in China, although these products sold briskly through the first half of the fiscal year.

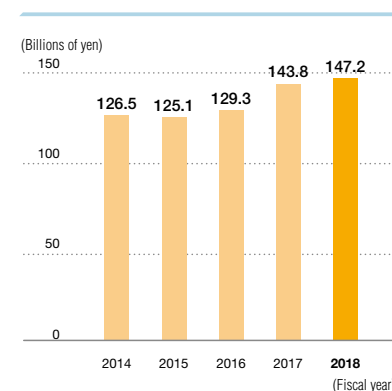
On the other hand, in the white goods market, which includes air conditioners, washing machines and refrigerators, sales expanded steadily, increasing by 13.6% from the previous fiscal year to ¥40,808 million. This mainly reflected continued brisk sales resulting from an acceleration in the adoption of inverters offering superior energy-saving

performance in China and other parts of Asia, despite negative impacts such as slowing growth of the Chinese economy overall and production adjustments for the overall air conditioner market, including non-inverter models.

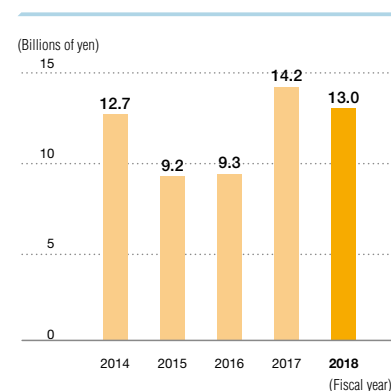
In the industrial equipment and consumer markets, sales declined by 3.0% from the previous fiscal year to ¥29,961 million, mainly reflecting lackluster sales of OA equipment such as printers and multifunction printers.

In terms of profits, operating income decreased 8.5% from the previous fiscal year to ¥13,025 million. This mainly reflected a decrease in capacity utilization associated with a drop in demand from the second half of the fiscal year, along with rising purchase prices of wafers, and increases in fixed costs such as personnel expenses associated with the establishment of new development bases.

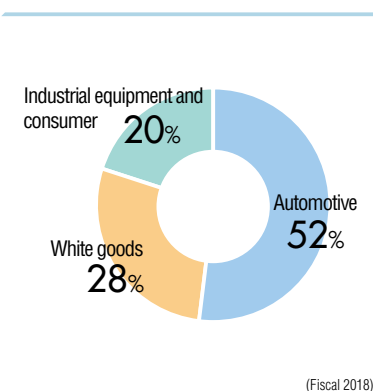
#### > Net Sales



#### > Operating Income



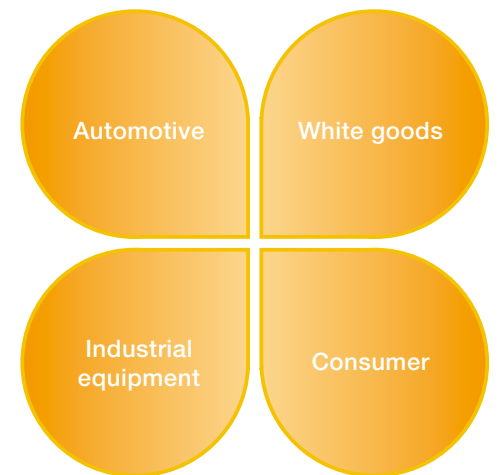
#### > Net Sales by Market



## Toward Medium- to Long-Term Growth

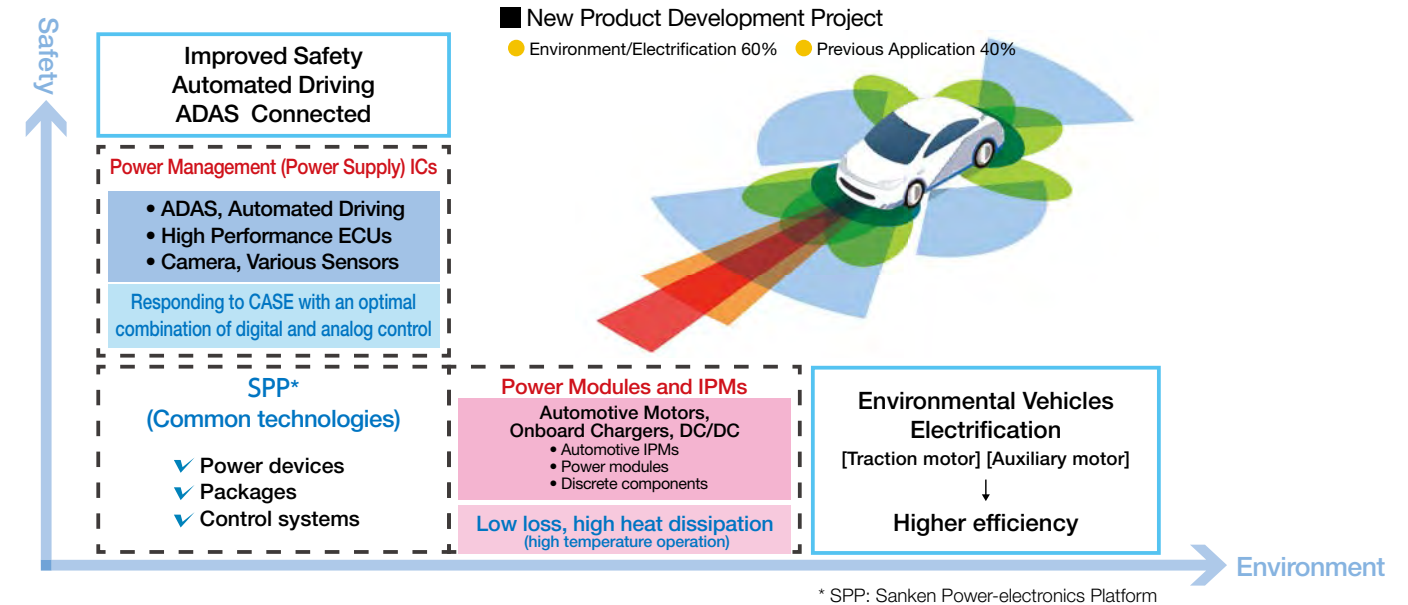
As the Company's core business, the mission of the Semiconductor Devices Business, and its greatest challenge, is to overcome the surrounding economic changes and intensifying market competition, and quickly develop and launch proprietary, differentiated products that are not affected by these changes. To achieve this, we will carefully synchronize our activities with development reforms and strengthen our manufacturing capabilities as a basis for making a significant contribution to improve profitability with highly competitive products, including further cost reductions through productivity increases and swapping out unprofitable products. In terms of profits, whereas we have been supported by high-earning products, such as products for conventional internal combustion engine automobiles and Allegro MicroSystems sensors, we have also experienced a major impact from a decrease in sales due to recent worldwide market trends. As a result, we now need to rapidly develop second and third stable earnings pillars. In addition to the analog semiconductor technology that we have been maturing, we will combine newly developed digital control technology to drive low-loss, high-heat-dissipating, high-performance devices and modules and expand our sales for environmental automobiles requiring higher efficiency and white goods which are rapidly adopting inverters, as well as industrial equipment incorporating more IoT capabilities, such as robots.

### Strategic Markets in the Semiconductor Devices Business

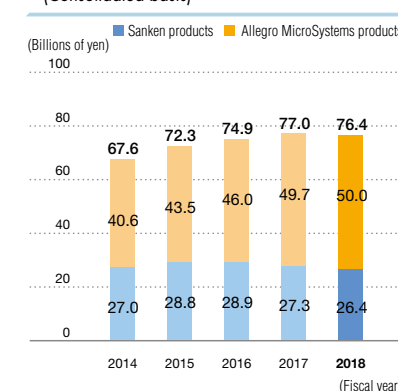


### Automotive Market

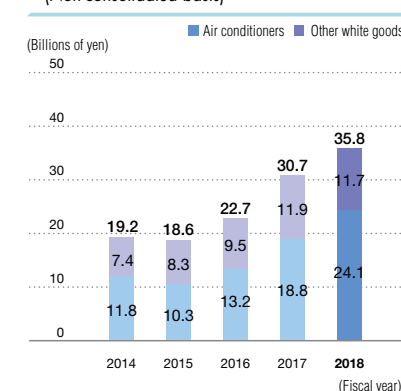
#### ■ CASE—Development for Safety and Environment



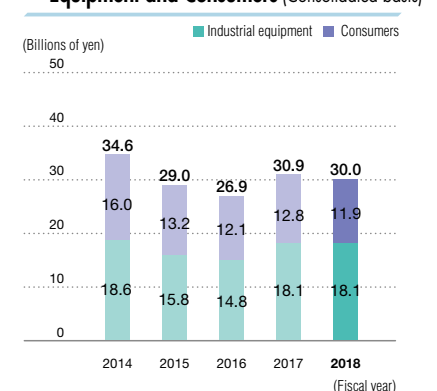
#### > Sales of Semiconductors for Automobiles (Consolidated basis)



#### > Sales of Semiconductors for White Goods (Non-consolidated basis)



#### > Sales of Semiconductors for Industrial Equipment and Consumers (Consolidated basis)





## Review of Operations Power Systems Business



With further expansion in our business scope and the fusion with devices, we are achieving results in our growth strategies at an early date.



**Shigeru Ito**

Director and Senior Corporate Officer  
General Manager of Power System  
Headquarters

The Power Systems Business is divided into “infrastructure,” which focuses on large power supply equipment, and “units,” which is mainly small- and medium-sized power source equipment and modules. Infrastructure products mainly comprise DC power supplies, high-intensity aircraft warning lights, uninterruptible power supplies, and general-purpose inverters for motor control. These products have earned customer trust and a reputation for excellence in socially critical facilities where even momentary power interruptions cannot be allowed, for example, in telecommunications systems such as mobile phone base stations, dams, power transmission substations, airport facilities, highway facilities, and tunnels. In the units business, we are focusing on modularization, including power supplies for telecommunications, industrial equipment and servers, as well as the automotive printed circuit board business, and driving sales expansion in our main markets.

### Fiscal 2018 Results

**Net Sales** ¥ **26.4** billion      **Operating Income** ¥ **0.55** billion

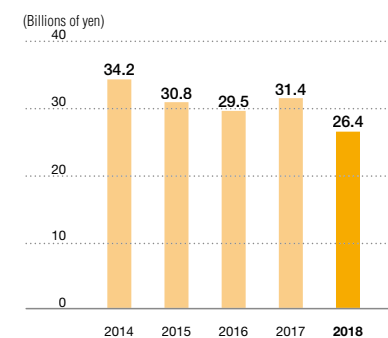
In fiscal 2018 (the fiscal year ended March 31, 2019), net sales in the Power Systems Business were ¥26,438 million, a decrease of 15.7% compared to the previous fiscal year.

In infrastructure, net sales were ¥14,746 million, a decrease of 6.4% year on year. This decline was due to factors such as postponed launches of power supply system components for domestic capital goods exports manufacturers, and sluggish sales in power supply equipment such as equipment for portable base stations, taken into account with the impact of reduced investment in plants and equipment in line with the slowdown of China’s economy.

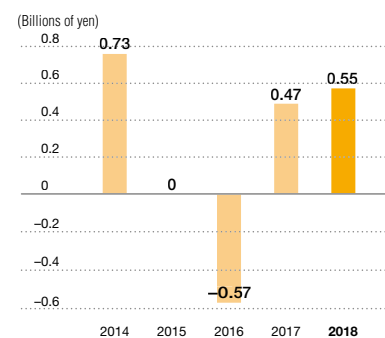
In units, net sales were ¥11,692 million, a significant decrease of 25.1% year on year. Although we focused efforts on expanding sales for the strategic markets of automotive, industrial machinery, and telecommunications, this decline was due to moving forward with structural reforms revolving around a withdrawal of products for the AV/OA market, which is experiencing a deterioration of profitability.

In terms of profits, consolidated operating income for the Power Systems Business was ¥549 million, an increase of 15.8% year on year as product composition changed for the better with structural reforms.

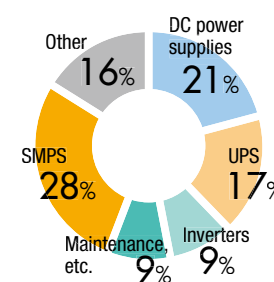
### > Net Sales (Fiscal year)



### > Operating Income (Fiscal year)



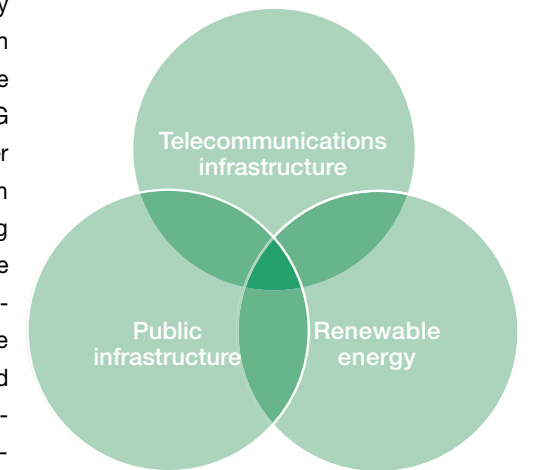
### > Sales Composition by Product (Fiscal 2018)



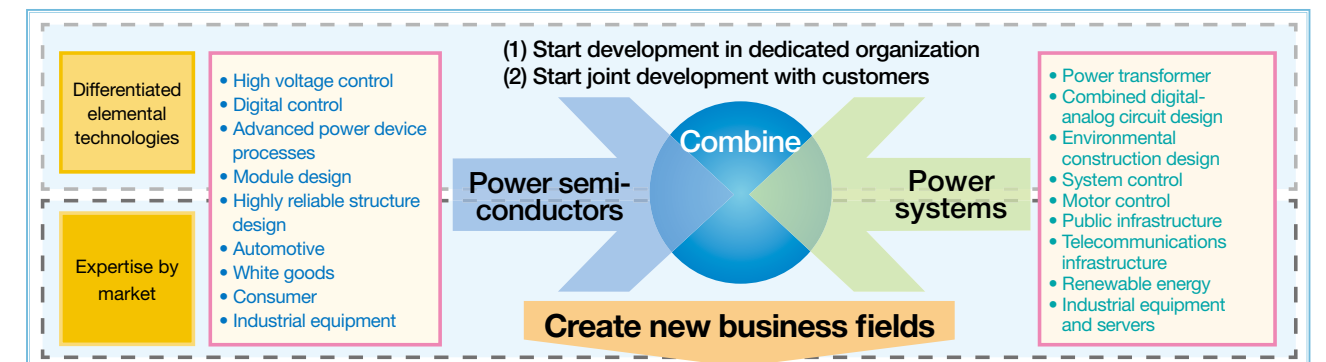
## Toward Medium- to Long-Term Growth

The challenge for the Power Systems Business is to secure enough sales to survive as a business and to create a cost structure that can compete successfully in the market. Fortunately, we have a stable base of orders underpinned by public infrastructure upgrades in Japan, such as mobile phone base station renewal demand under the government-led plan for building national resilience and the shift to the 5G communication standard. In particular, the spread of 5G is expected to see an increase in installations of small base stations to cover areas between buildings that have poor reception in areas of high population density. Ultra-compact power supply systems will be needed for mounting antennas on public structures such as signal equipment and power pylons. We have elemental technologies that can be differentiated for power semiconductors such as high-voltage technologies, and advanced process and module design technologies for digital control and power devices. We have started development that combines these into power systems such as voltage transformers, mixed digital-analog circuits, and environmentally considerate structural design. By creating products in various new fields, such as 5G and IoT, we will identify nascent growth markets and strive to increase profitability.

### Strategy Markets in the Power Systems Business

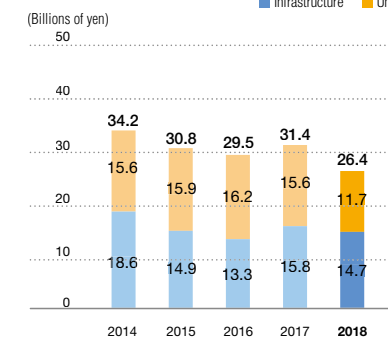


## Combination of Power Systems and Devices

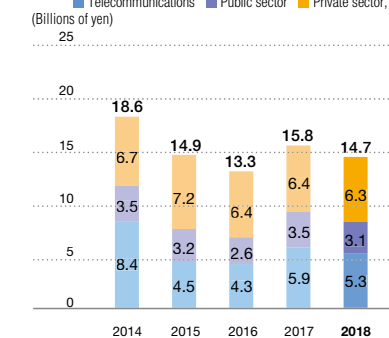


[Combination area]	Target effect	Short-term target	Medium-term target
Ultra-compact base station power supply for 5G	Miniaturization and weight reduction (Equipment→board→module)	Respond to local 5G	Respond to shared network use
Wireless charging system mainly for automobiles	More compact, higher efficiency, higher performance	Small volume rapid charging	Medium volume rapid charging
Integrated power supply for IoT	Integrated management of multichannel, distributed power supply	Environmental power supply	Power supply compatible with the power grid
Robot servo motor power supply system	Compact, reduced weight, integrated mechanical-electrical	Driver modularization	Intelligent systems

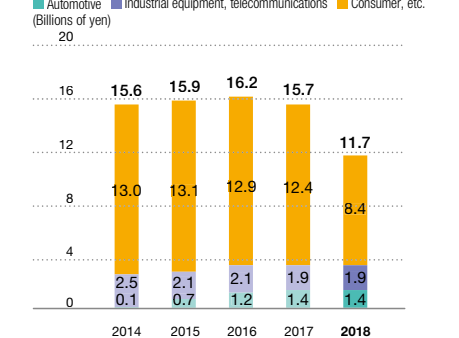
### > Composition of Sales (Fiscal year)



### > Net Sales by Infrastructure Market (Fiscal year)



### > Net Sales by Units Market (Fiscal year)





## Special Feature 1: Global Production Footprint

Sanken Electric is keen to develop, produce and improve the quality of environmentally friendly products with the aim of conserving energy on a global scale.

Amid heightened interest in protecting the environment around the world, countries have been moving to tighten regulations on CO<sub>2</sub> emissions. Every day, needs are increasing for better environmental performance, including greater efficiency in internal combustion engines to improve the fuel economy of automobiles, and stronger demand for electric vehicles. Along with the need to create better safety features, such as with ADAS and autonomous driving, car sharing and other changes in the mobility environment have led to major innovations in automobiles and their relationships with people and society. To make this a reality, advances in power electronics will lead to the creation of a wide range of new needs while improving safety, security and comfort for everyone.

In the electrical products we use every day, requirements for energy conservation have been increasing, strengthening demand for inverter-controlled compressors and fan motors in air conditioners and refrigerators.

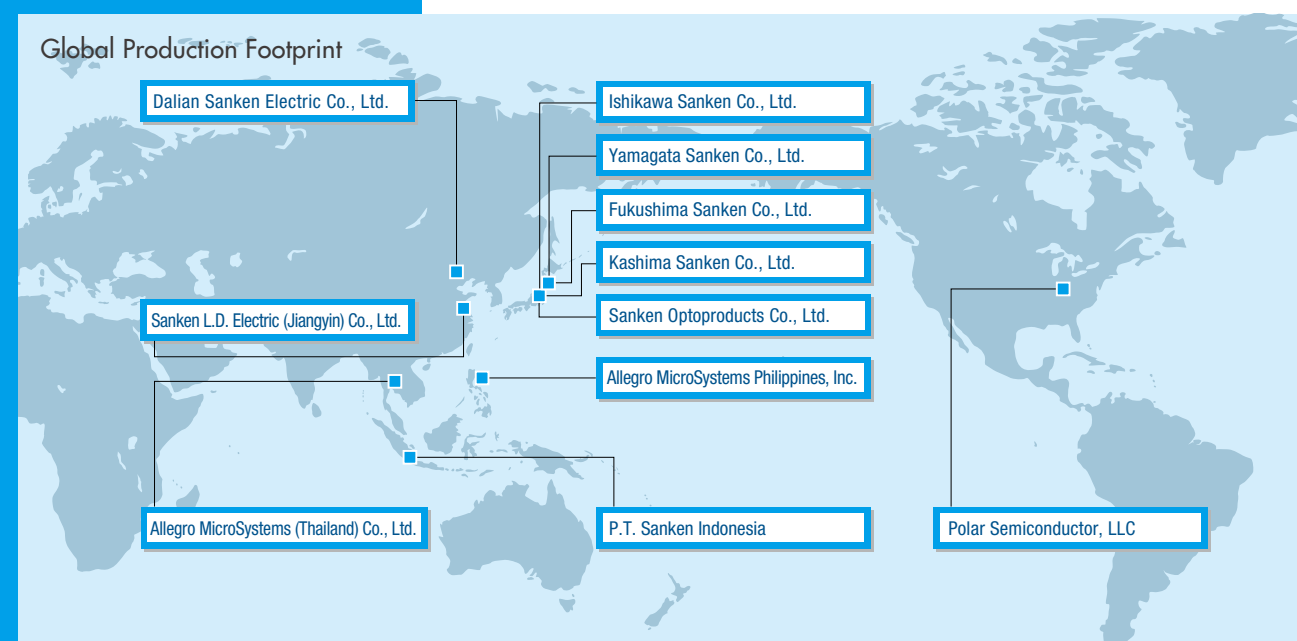
At the Sanken Group, we have earned the trust of our customers by manufacturing high-quality, durable power semiconductors based on reliability assessments, while improving technologies that bring competitive advantages, with a focus on the key phrases “eco-friendly & energy saving” and “clean energy.” This is the reason why we have secured an industry-leading share of the global market in product fields where our reputation shines. We will accelerate the development of new technologies and products with the steadfast intention of contributing to the environment, in a bid to develop new markets and applications while expanding the scope of our operations.

### What Are Power Semiconductors?

Power semiconductors are chips that convert electricity and control motors and lighting. They handle large voltages and currents.

**Power Semiconductors**  
Controls  
and supplies  
electricity

LSIs such as CPUs and memory are widely known types of semiconductors with functions to compute and store data. Power semiconductors, however, control and supply electric power to motors, charge batteries, and run the CPUs and LSIs by performing AC to DC conversions such as suppressing voltage to 5V or 3V.



### Establishment of Semi Devices Reliability Evaluation Center

In April 2019, Sanken Electric finished construction on the Semi Devices Reliability Evaluation Center in Ishikawa Prefecture with the objective of planning the redistribution of resources within the Group and improving the efficiency of reliability assessments. It will consolidate assessment facilities that had been scattered across other bases, streamline operations and improve efficiency, through measures including the establishment of in-house assessment boards and fine-tuning of each step during power semiconductor development.



External view of the Semi Devices Reliability Evaluation Center (Ishikawa)

### Production Development Center Concept

Sanken Electric has broken ground on the construction of the Production Development Center, a laboratory for standardizing production facilities in the SPP and halving the time needed to build out production lines, while also reinforcing its strengths in production technologies and manufacturing capabilities as a measure to reallocate resources within the Headquarters. The center will also have a community area where stakeholders can learn about trends in technology, and the facility layout helps employees understand the R&D and actual implementation of manufacturing capabilities due to the setup of pilot lines. Construction is scheduled to finish by March 2021.



External view of the Production Development Center (Headquarters)

### Accelerating Innovation in Power Electronics

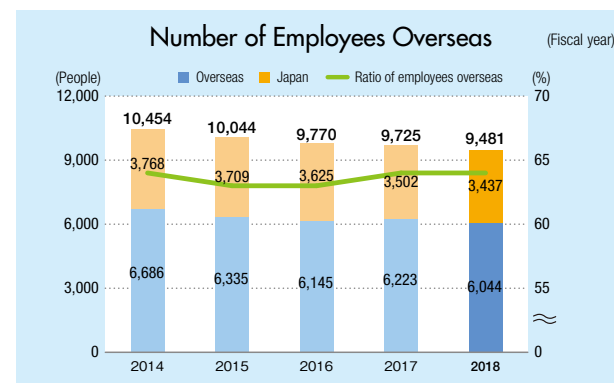
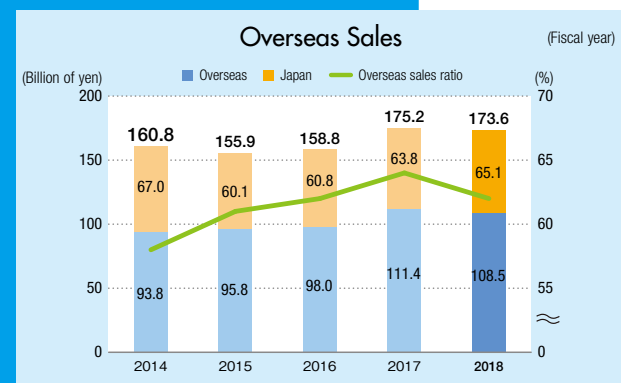
As a promoter of the SPP, my mission is to spread the development concept across the entire organization. I am also in charge of managing the functions of profit centers that carry out development strategy proposals that emphasize technology and marketing and profit-creation proposals with a strict analysis. My job is to efficiently advance the management of entry and exit points for development while collaborating with the sales division. I am ready to help improve profitability by replacing unprofitable products with new products, and by pushing forward plans for high-value-added products. I will take the lead in drawing out a vision for the next decade of strong growth in Sanken Electric's power semiconductors.





## Special Feature 2: Global Promotion and Training of Engineers

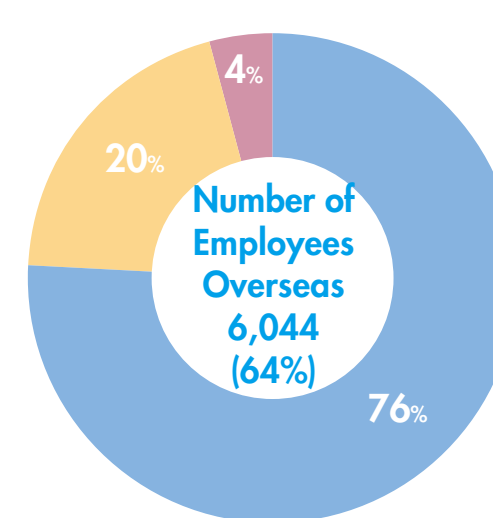
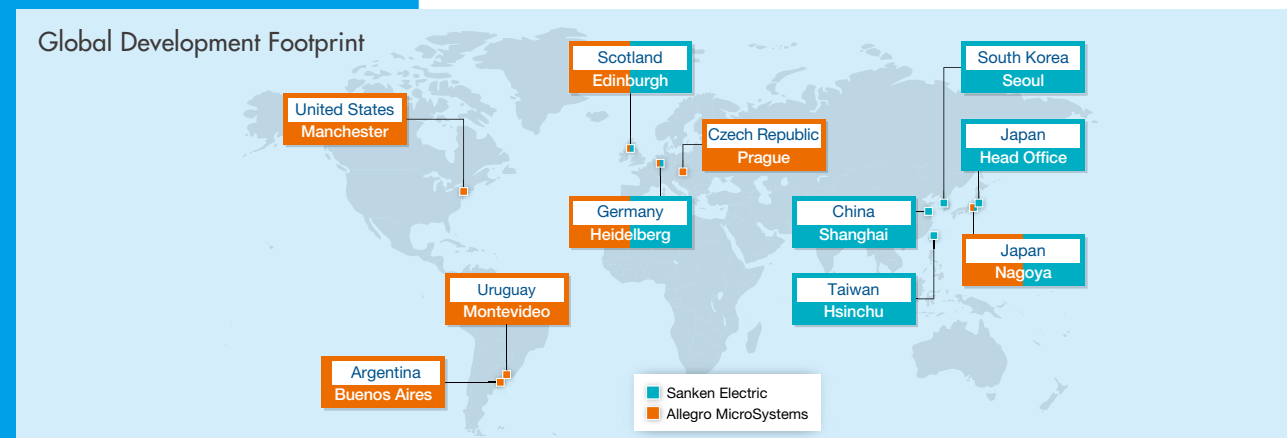
We are aggressively expanding business overseas with the aim of becoming a corporate group with a leading global presence, constantly pursuing growth through innovation.



### Global Strategy to Secure Human Resources

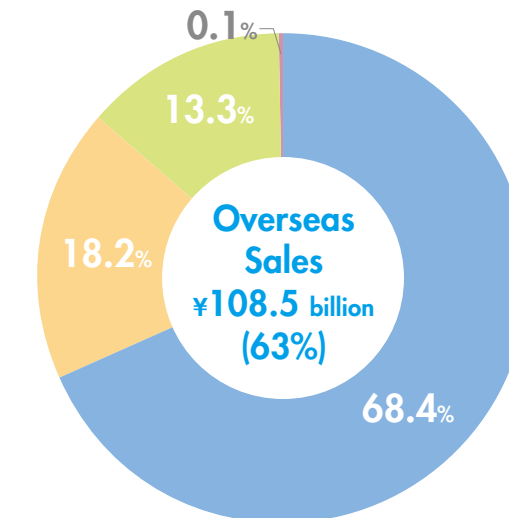
It would not be an exaggeration to say that the mission of a company that drives innovation is to remain unwaveringly focused on attracting talented engineers in order to advance the development of unique and creative technologies. At Sanken Electric in Japan and Allegro MicroSystems in the US, it has become increasingly difficult over the years to hire local engineers amid changes in the social environment. To address this issue, Allegro MicroSystems first created a global development structure in 2000 where engineers from Scotland who wished to return home in Edinburgh were allowed to work from a satellite office as part of an initiative to promote diversity in human resources, including

gender diversity, while discovering and promoting human resources with deep knowledge and insight on a global basis. Thereafter, this initiative was rolled out to Argentina and Uruguay. Last year, a design center with 20 employees was set up in Prague in the Czech Republic. We have also moved to hire more people locally overseas while continuing to hire in Japan, where birthrates are declining and the elderly are increasing in recent years. In South Korea and Taiwan, development centers have been established with a total of 70 employees who are helping to accelerate development.



**Number of Employees (Consolidated)**  
9,481 (FY2018)

Asia North America Other



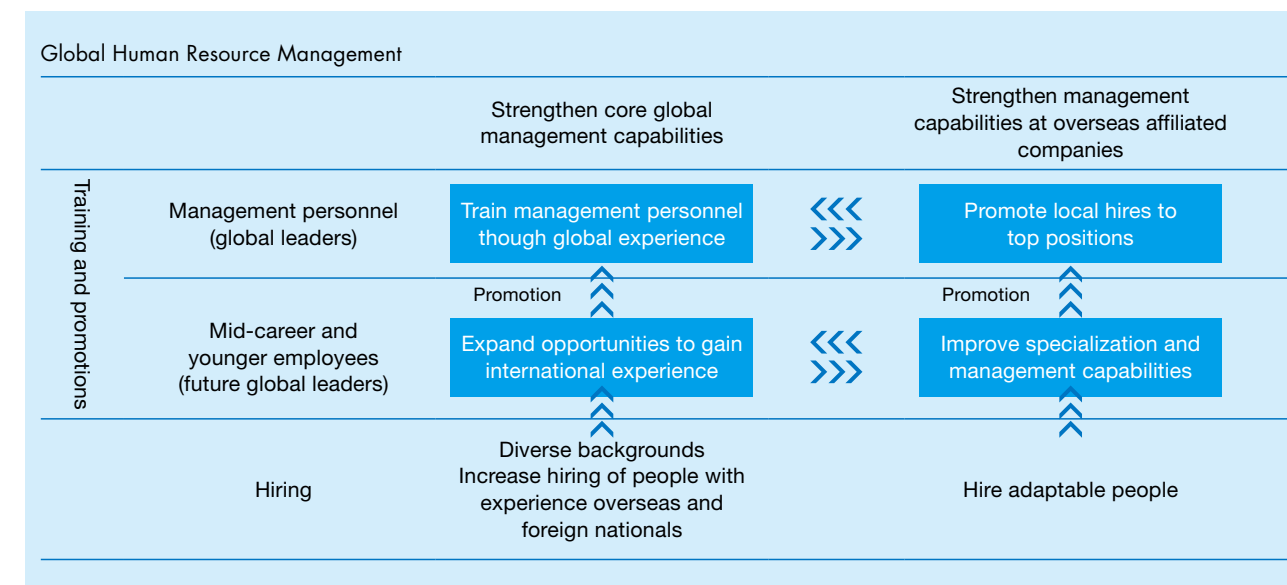
**Consolidated Net Sales**  
¥173.7 billion (FY2018)

Asia North America Europe Other

### Global Human Resource Management Strategy

When it was founded in 1946, Sanken Electric started out with only a few engineers and workers who joined from the Toho Industrial Research Laboratory. Today, we have grown to approximately 9,500 employees on a consolidated basis, including overseas bases. Of this total, 64% of our employees are working at bases overseas. After acquiring Allegro MicroSystems in 1990, we launched many overseas bases to take charge of sales, production and development, and the Group has steadily increased the number of employees globally ever since. In addition, we aim to reinforce our management capabilities with due consideration paid to regional characteristics, as a key aspect of management

and business operations, including at global bases. We are keen to develop globally minded employees who align better with our corporate strategy, instead of focusing their development on specialized business needs as in the past. It is our belief that corporate value will improve as a result of advancing human resource management in line with our global strategy and nurturing people who have global business awareness (intellectual ability), are able to adapt to different cultures and respond flexibly to change (mental agility), can influence stakeholders with differing political or cultural views (social skills), and can communicate their ideas in a widely spoken language (English proficiency).





## Special Feature 3: CSR Activities with Pet Botaru®

### Giving back more to local communities Illuminations with Pet Botaru® lights in local communities

To invigorate local communities, the Sanken Group arranges light displays using the Pet Botaru® LED lights it makes, and showcases these light displays in various regions across Japan, including the Shiroyone Senmaida illumination event held in Wajima City, Ishikawa Prefecture.



Tokimeki Sakuragairo illumination event in Nishinoto Satohama, Ishikawa Prefecture

**Sunao Murai, Department of Commerce and Tourism, Shika Town, Ishikawa Prefecture**

Ishikawa Sanken Co., Ltd.'s headquarters is located in Shika Town, Ishikawa Prefecture, as the first company that was invited to the town as a part of measures to revitalize the Noto region. In addition to being surrounded by nature, the town boasts the Old Fukura Lighthouse, the oldest wooden lighthouse in Japan. In 2016, the town began holding the "Tokimeki Sakuragairo Illumination Event in Nishinoto Satohama" event along the world's longest wooden bench, one of the landmarks in the town, and featured our Pet Botaru® lamps. This year marks the fourth time this event has been held.

The event has become widely known to represent the town, drawing in more than 20,000 visitors between August and November. Economic groups from neighboring regions and local residents coordinate as event volunteers. Employees from Ishikawa Sanken and Sanken Optoproducts also volunteer for the event, helping to foster the local community through active participation in the event.



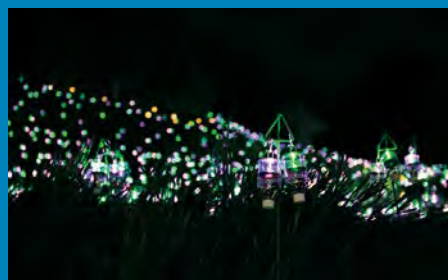
1,300 years of being connected with light in Hakusan City, Ishikawa Prefecture

**Hajime Matsuda, Tourism, Culture and Sports Department, Hakusan City, Ishikawa Prefecture**

**Illumination Brings Hakusan Together**

On July 6, 186 volunteers finished putting together a 20,000-unit illumination display at the Hakusan Ichirino Hot Spring Ski Area. Many visitors attended the opening event on July 13 to enjoy the seven-color mystical illumination while listening to taiko drums and live music.

This year was the third time the Hakusan Ichirino illumination was held, drawing in many locals and tourists from outside the city, and even outside the prefecture. I hope everyone had an enjoyable and memorable time at this night event during the summer in Ichirino.



Suisen Misaki Kagayaki illumination in Echizen Town, Fukui Prefecture

**Yoshikazu Uesaka, Department of Commerce and Tourism, Echizen Town, Fukui Prefecture**

With help from volunteers, we aim to revitalize the region using Pet Botaru® illuminations as one event in the community for people to enjoy during the off season for daffodil flower gardens, while retirees from the area also take advantage of the natural wonders of the Echizen Cape and the draw of the area's daffodil flowers. The community becomes more vibrant with an increased flow of tourists during the off season.

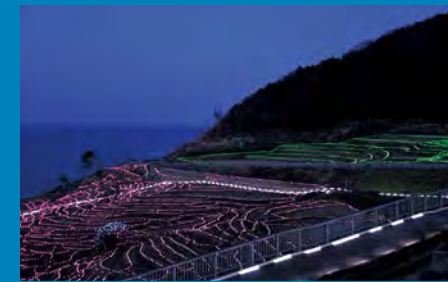


Sennen Kirameki illumination in Bungotakada City, Oita Prefecture

**Shohei Kaguchi, Tashibunsho Sennen Kirameki Action Committee, Bungotakada City, Oita Prefecture**

A virtually unlimited number of fireflies, with some people calling it a firefly galaxy, are in the Tashibuosaki region in Bungotakada City, Oita Prefecture.

A "winter firefly" illumination event is held using our Pet Botaru® lights. I believe the region is being invigorated by this rather popular event.



Illumination event in Wajima City, Ishikawa Prefecture

**Naomi Furudo, Tourism Department, Industry Division, Wajima City, Ishikawa Prefecture**

The "Illuminating the Shiroyone Senmaida Rice Terraces in Wajima" event began in 2011, so it has been held nine times as of this year. It is very hard to run electrical lines in terrace rice paddies, but Ishikawa Sanken's LED Pet Botaru® lights, which were jointly developed with Wajima City, made it possible to create a mystical illumination in such conditions. Before this event started, nobody came to visit Senmaida during the winter, especially in the evening. Nowadays, this event has grown into one that represents Noto during the winter, with many people visiting to see the terraces.

Last fiscal year, we expanded the display area and started using new four-color Pet Botaru® lights. We hope to see an increase in repeat visitors who are drawn to the new attraction, and bring more people to Wajima City.



Rainbow Bridge (Ushidake Hot Springs Ski Area) in Toyama City, Toyama Prefecture

**Chairman Noriaki Yamada, Ushidake Light Up Action Committee in Toyama City, Toyama Prefecture**

Using seven-color LED Pet Botaru® lights, we created a mystical illumination that looks like a rainbow on the ski slopes of the Ushidake Hot Springs Ski Area. This event has become a summer tradition in the area. This year will be the seventh time the event is held, and it has become more popular with more visitors every year.



Tanada Night Festival in Kamogawa City, Chiba Prefecture

**Ryohei Kawana, Department of Commerce and Tourism, Kamogawa City, Chiba Prefecture**

With Oyama Senmaida, which was selected as one of a hundred must-see destinations in Japan, as a stage, the Tanada Night Festival has used Pet Botaru® lights for more than five years.

This popular event, with its mystical display of LED lights and flaming torches, has become a tradition every autumn in Kamogawa, lighting up the nights in rural areas.



Tatara Akari illumination in Okuizumo Town, Shimane Prefecture

**Toshinari Tanabe, Representative Director, Okuizumo Region Revitalization Project**

We hold this event two times a year, once around rice planting time and once after harvesting in the autumn. This event has led to an increase in tourists, and I am thankful for the support we have received from companies outside the prefecture for this initiative, as well as the assistance from government crowdfunding. Going forward, we will light up the area with Pet Botaru® lights with the aim of fostering stronger communities.

- Wajima City estimates the economic impact of Azeno Kirameki events over the past eight years has been ¥3.1 billion
- The event is expanding to 60 locations in Japan, for an estimated total boost of more than ¥4.0 billion



## CTO Message

# Promoting Social Innovation to Drive Technology Development to Create the Future

We are incorporating a new development method, the Sanken Power-electronics Platform (SPP) into our new product development. By establishing a platform for our development method, we can improve the efficiency of design and reduce costs while promoting standardization of parts and the sharing and automation of production lines.

### Priority Activity Policy of Engineering Headquarters in Medium-Term Management Plan 2018

I am in charge of the Engineering Headquarters within the Device Business Corporate Headquarters. This department is responsible for engineering and development of Sanken Electric's semiconductor devices.

The Engineering Headquarters includes business units such as the Marketing Division, IPM Business Unit, Power Devices Business Unit, and Power Supply IC Business Unit, as well as the Process Engineering Division (Wafers) and Assembly Engineering Division (Packages).

The Marketing Division coordinates with the Sales Business Unit to keep ahead of the latest technology trends in order to pick up market needs as quickly as possible, which it relays to each of the business units.

The priority activity policies of the Engineering Headquarters under Medium-Term Management Plan 2018 are as follows:

1. Promote the Sanken Power-electronics Platform (SPP)
2. Strengthen product capabilities and marketing, and reduce costs from the design stage
3. Strengthen global development collaborations

With regard to the first policy, "promote the Sanken Power-electronics Platform (SPP)," we will reform our traditional development methods and find ways to reduce development lead times and costs. In product development conducted by each business unit, we will carry out all operations on a common platform by adopting the concepts of the Device Business Corporate Headquarters and the Power System Headquarters as shared concepts to underpin our development and design activities. Our aim is to create next-generation power semiconductors, and to promote reduced development steps through standardization (operation reform), preselection of materials (purchasing reform), standardization of parts (design and development reform) and sharing and automation of production lines (production reform). In terms of a specific numerical target, we are aiming to increase development efficiency by 35%.

For the second policy, we aim to strengthen our product capabilities and reduce costs from the design stage, mainly through the SPP.



**Hideki Nakamichi**  
Senior Corporate Officer  
General Manager of Engineering Headquarters, Device Business Corporate Headquarters

“We will shift our resources to position ourselves for a social paradigm shift.”



Our third policy is to strengthen global development collaborations. In addition to our previous three companies: the Engineering Headquarters within Sanken Electric Headquarters, the sensor and motor driver specialist Allegro MicroSystems, LLC (AML), and the elemental development technology specialist Polar Semiconductor LLC (PSL), in 2017 we expanded our development bases. We established a center for developing packages and a new company for the development of power device elements in South Korea, along with a new company for the development of software for digital power supplies in Taiwan.

### SPP as a Product Development Concept

The SPP is a development method that seeks to reform design and business operations through shared concepts. The method is predicated on the need to promote device platforms and modular design for power systems. It aims to integrate marketing, development, production technology, materials, and manufacturing and review the way the work is carried out from development through to manufacturing. Having the same platform enables sharing of operations from materials procurement through to parts fitting and assembly processes, as well as facilities, to increase efficiency. At the same time, we will promote the development of a common platform for component, material, and assembly technologies needed for new products and technologies. By reforming the way we carry out the work of development, as initial cases we have selected IPMs for devices and compact UPSs for power systems, as these involve development, production technologies, plants, and marketing.

### From Product Development to Technology Development

Previously, we have approached product development through repeated interviews with customers, then developed different products and technologies and delivered them to respective customers. This resulted in large amounts of reworking, which led to poor profitability. Looking ahead, we will aim to anticipate markets' and customers' needs, and develop products that offer completely new value. To do this, we will develop a large number of elemental technologies in advance. By combining these elemental technologies to develop new products, we will be able to reduce development lead times. Moreover, by shifting from product development to technology development, we will anticipate global trends from a long-term perspective to create a technology development road map.

As a market strategy, we will focus on automobiles (CASE), white goods (shifting to energy conservation and inverters), industrial equipment, and expansion of our overseas customer base. Moreover, as a product strategy, we will strengthen development of high-performance power management ICs for automotive use and development of integrated mechanical-electrical modules, built-in control (SLVC) high-performance IPMs, market launch of low-cost, low-loss IPMs, and development of large-capacity power modules for automotive use.

### ■ Promoting Development Reform

Stages of development	Initiatives for growth	Objectives
Design concept	Firmly establish the SPP	<ul style="list-style-type: none"> <li>• Semiconductor devices: Platform development</li> <li>• Power systems: Modular design</li> </ul>
Fabrication process	Seoul Power Device Design Center	<ul style="list-style-type: none"> <li>• Expedite development of leading-edge fabrication technologies</li> </ul>
Package	Seoul Package Design Center	<ul style="list-style-type: none"> <li>• Expedite development of next-generation packages and required element technologies</li> </ul>
Software design	Taiwan Sanken Design Center	<ul style="list-style-type: none"> <li>• Design an array of firmware for digitally controlled power ICs</li> </ul>
Production line design	Production Development Center	<ul style="list-style-type: none"> <li>• Strengthen Group production technology</li> <li>• Serve as a pilot line for factory automation, IoT, and AI</li> </ul>
Reliability evaluation	Semi Devices Reliability Evaluation Center	<ul style="list-style-type: none"> <li>• Shorten reliability evaluation cycle time</li> <li>• Improve efficiency and functions</li> </ul>

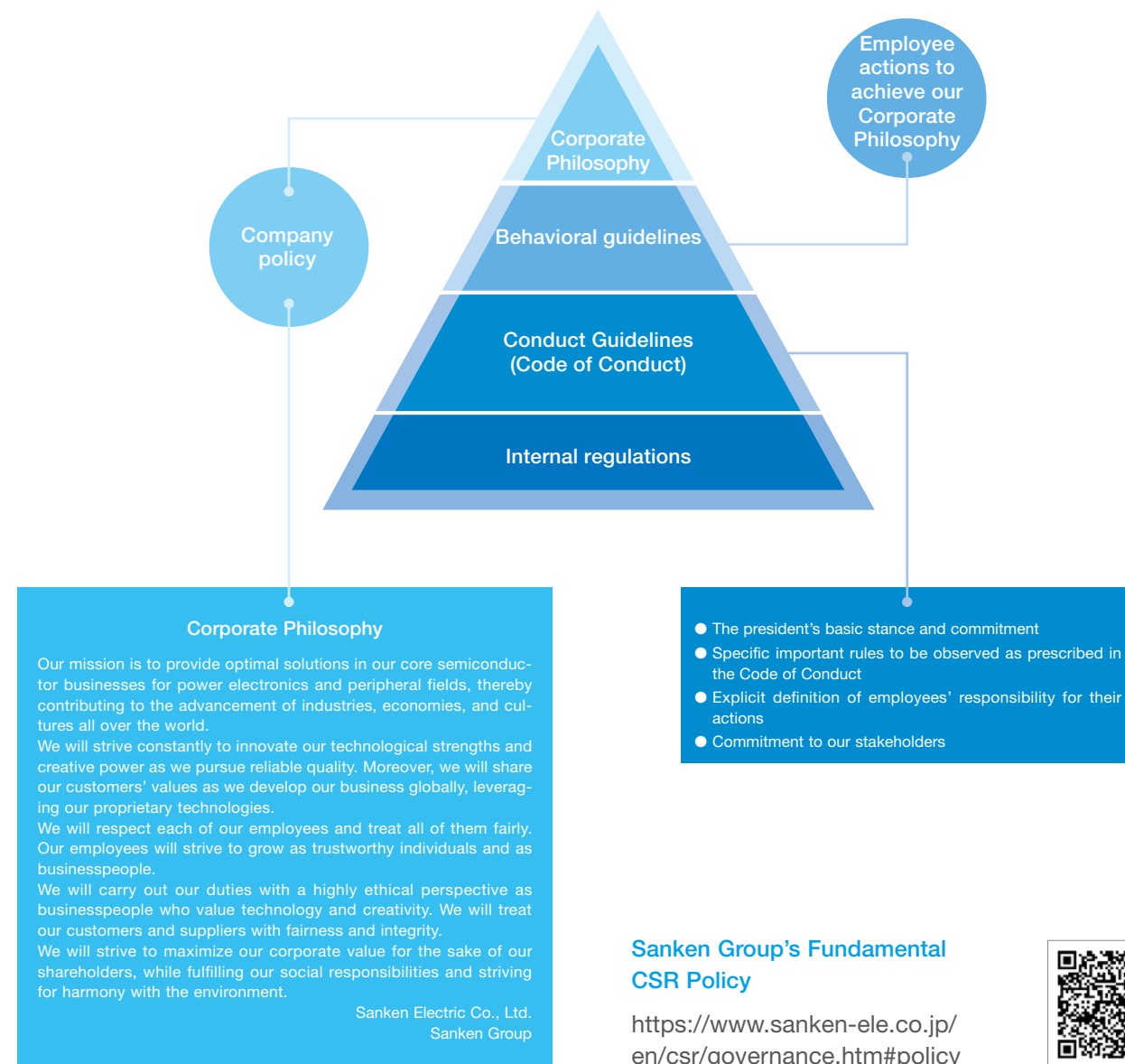


## CSR

While putting into practice its corporate philosophy, Sanken Electric engages in CSR initiatives with the intention of contributing to society based on the principles of social involvement, impartial corporate management and conservation of the global environment.

### Sanken Electric Group CSR

The philosophical system of the Sanken Group has three key elements, namely its Corporate Philosophy, behavioral guidelines and Conduct Guidelines.



## Sanken Electric's Contributions to SDGs A Company that Supports a Sustainable Society

### Our Approach to the SDGs

In 2015, the United Nations adopted the SDGs as a common set of goals to realize a sustainable world, defining the objectives that society must achieve to balance the economy, society and the environment.

With 2030 as the deadline, the United Nations identified 17 goals and 169 targets that countries, corporations and other entities should work to achieve.

We are implementing measures to achieve the SDGs throughout the Group.

Sanken Electric's corporate philosophy states that its mission is to provide an optimum solution in its core business of semi-conductors, as well as power electronics and other peripheral areas, to contribute to the advancement of industry, the economy and culture all over the world. Our philosophy aligns with the SDGs of "affordable and clean energy" and "industry, innovation and infrastructure." We believe our business activities will contribute to the achievement of the SDGs. By deeply understanding each of the SDGs and linking specific actions to them, we aim to create new business opportunities while reducing risk.

In initiatives to address the SDGs, the Sanken Group's Fundamental CSR Policy expresses our approach to contributing to society through business activities, complying with laws and regulations, advocating for human rights, protecting the environment, and helping regions.

Based on this approach set forth in the policy, we are implementing specific action plans for contributing to the SDGs.



### Promotion Organization

We have established the SDG Promotion Committee as an organization to advance SDG initiatives across the entire Sanken Group by formulating and advancing specific action plans to tackle SDGs, and incorporating them in business plans.

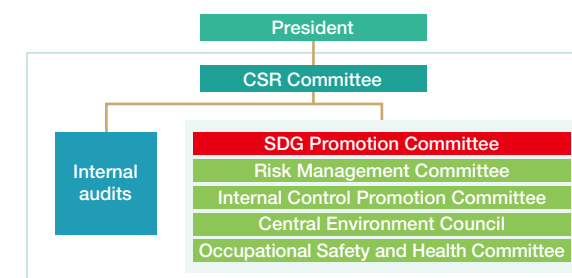
Deliberations by the SDG Promotion Committee are reported to and discussed by management in the CSR Committee.

### Initiatives

We implement a PDCA cycle, drawing up action plans based on an analysis of current conditions, periodically checking up on their progress, and reflecting the results in new plans.

To deepen understanding of the SDGs, we conduct various forms of employee training, including for managers.

### CSR Promotion Structure





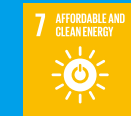
# Environmentally Friendly Products

## Where Our Products Are Being Used

Sanken Electric's products are used in a wide variety of products, such as automobiles, white goods, LED lighting and industrial equipment, in markets experiencing rapid transitions to digital technology and strong demand for energy conservation. Furthermore, we contribute to society by developing products for the renewable energy and green infrastructure markets.



Contributing to Global Society with Sanken Electric's Environmentally Friendly Products



Products developed to date		Products in use/key features	
<b>Automobiles</b> 	<b>Requirements</b> Improve fuel economy Lighter weight Smaller size	<b>Product name</b> ■ IGBT  Engine ignitors (Ignitors)	Reduces mounting area by 55%, weight by 75%, power consumption by 20% <ul style="list-style-type: none"> <li>• Compact mounting (PKG (TO263) → (TO252))                              ⇒ Reduces mounting area by 55%, weight by 75% compared with previous products</li> <li>• Lowers loss (reduces VCRSAT, 1.29 V versus rival's 1.62 V)                              ⇒ Reduces power consumption by 20%</li> </ul>
	<b>White goods</b> 	<b>High-voltage IPMs</b>  Air conditioner and air purifier fans	Increases efficiency with built-in high-performance controller <ul style="list-style-type: none"> <li>• Increases efficiency and reduces space, helping to conserve energy, with a built-in sensorless vector control</li> </ul>
		<b>High-voltage IPMs</b>  Refrigerator compressors	Low-loss MOSFETs and SIM packaging helps conserve energy <ul style="list-style-type: none"> <li>• Uses low-loss MOSFETs to reduce ON resistance and increase efficiency</li> <li>• Shrinks existing SCM packaging to more compact SIM packaging, helping to reduce power consumption and heat generation</li> </ul>
	<b>Consumers</b> 	Conserve resources ■ Digital control power supply ICs  OLED TVs	Reduces number of parts, shrinks size of substrates <ul style="list-style-type: none"> <li>• Advanced PFC control (bridgeless VFM method) greatly improves efficiency during low loads, thanks to digital controls</li> <li>• Allows for PFC and LLC control in a single IC, reduces the number of system parts by at least 50, and reduces substrate size by approx. 20%</li> <li>• Standby power comparable to or better than previous products, regardless of digital control</li> </ul>
<b>Industrial equipment</b> 	Increase efficiency Smaller size ■ Rectifier units  Telecommunications power supplies	Better power factor with size equivalent to previous products <ul style="list-style-type: none"> <li>• Successor to RSR48-25TB</li> <li>• Addition of power factor correction (PFC)</li> <li>• Naturally cooled rectifier unit does not use forced cooling fan, making it better for the environment</li> <li>• Despite adding PFC function, maintain same dimensions as existing RSR48-25TB, making it replaceable</li> </ul>	
	■ Electric current sensors  Solar power generation systems	Low loss and smaller space <ul style="list-style-type: none"> <li>• Electrical current detection for power conditioners used in solar power generation systems that employ non-contact Hall effect sensors reduce loss and conserve space compared to sensors that use resistors (significant loss) or coils (require space)</li> <li>• Compared with previous products, reduces semiconductor resistance by approx. 30%, handles large electrical currents, and detects high-voltage currents by using packaging able to ensure spacing for insulation</li> </ul>	

Contribute to a sustainable society



## Environmental Performance

Sanken Electric is making steady progress on efforts to reduce its environmental impact on the planet.



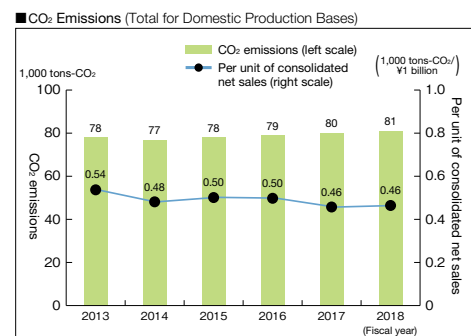
In fiscal 2018, energy consumption, chemical substances and other resource inputs for production, CO<sub>2</sub> emissions and waste emissions at our domestic manufacturing bases were as detailed below.

### Energy Conservation and Greenhouse Gases

We endeavor to efficiently reduce CO<sub>2</sub> emissions at our business sites in a bid to prevent global warming. As an example, we installed solar power generators at the Kawagoe Plant in 2016 and at Fukushima Sanken in 2017. We shut down heavy oil boilers at the Kawagoe Plant in 2017 and the headquarters in 2018, and reorganized the CR building at the headquarters, but little improvement was made compared with the previous fiscal year owing to hotter weather.

This fiscal year, Sanken Electric aims to achieve its reduction goals through ongoing measures to reduce energy loss.

2018 (Fiscal year)	Target (%)	Result (%)	2019 targets (%)
Reduction in CO <sub>2</sub> emissions	Year on year -1	+0.7	Year on year -1

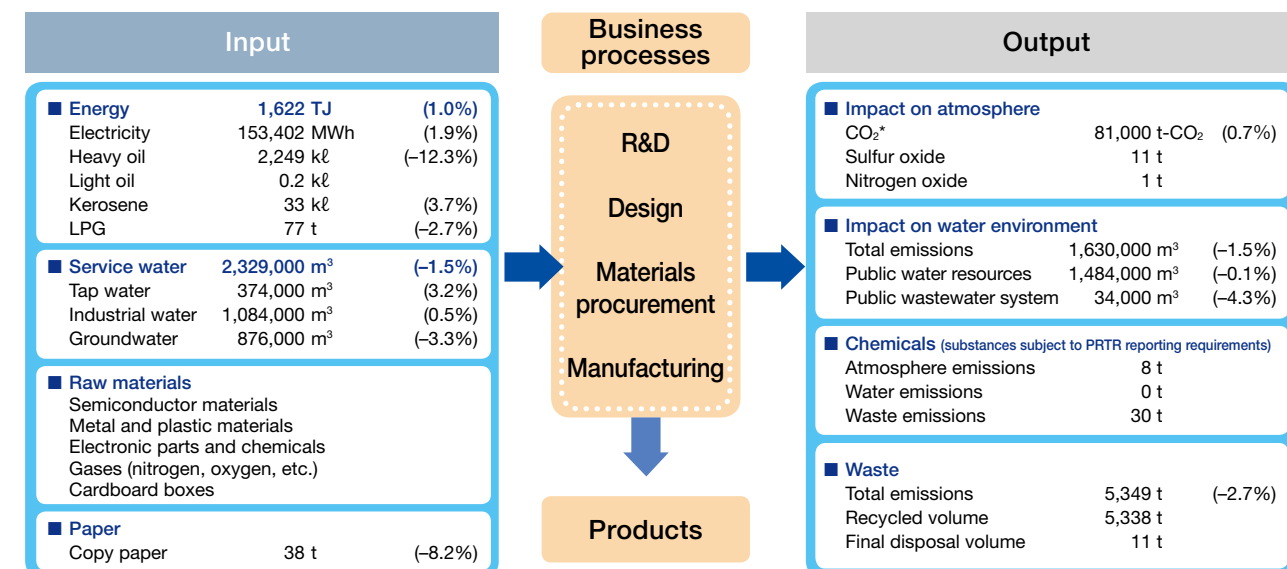
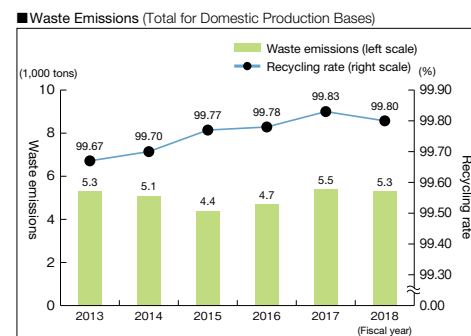


### Waste Reduction and Resource Recycling

As a part of measures to effectively utilize resources and prevent their depletion, we are continuing with efforts to restrict waste generation, reduce emissions, and promote recycling. Ten domestic bases have maintained recycling rates of at least 99%. At the headquarters, waste is separated into 27 categories and carefully managed in a bid to improve recycling rates.

Regarding plastic waste, which has been the focus of attention lately, we aim to reduce the volume of discarded PET bottles by encouraging employees to always use their own cups and reusable bottles. We are taking steps to reassess the use of other plastics, including packaging materials and shipping cartons.

2018 (Fiscal year)	Target (%)	Result (%)	2019 targets (%)
Recycling	Over 99%	99.8	Over 99%



( ) shows year-on-year change  
Includes domestic production and non-production bases, but waste excludes marketing bases

\* For CO<sub>2</sub> emissions, electricity usage figures announced by the Federation of Electric Power Companies of Japan, other usage figures from the Act on Promotion of Global Warming Countermeasures

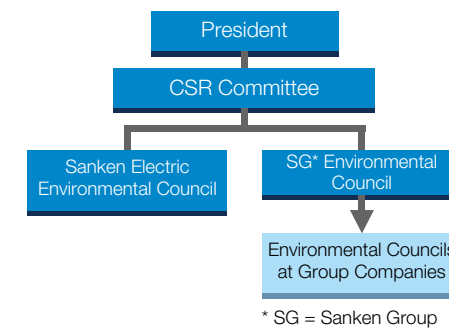
## Environmental Contribution Activities

Structure for promoting environmental activities and specific initiatives

### Environmental Management System

With the intention of efficiently and precisely advancing environmental management, the Sanken Group has put into place an environmental management system centered on the CSR Committee, an organization under the direct control of the president.

Sanken Electric has obtained ISO 14001 certification for its environmental management systems at all of its domestic and overseas production bases. We take the initiative to protect the environment by developing environmentally friendly products in line with the characteristics of our business, as well as by reducing waste, resources and energy.



### Semi Devices Reliability Evaluation Center

#### Improving Efficiency of Air Conditioning

In April 2019, our newly established Semi Devices Reliability Evaluation Center began operations in Ishikawa Prefecture.

The assessment center brings together product evaluation functions that had been scattered across three locations, comprising the headquarters, Kawagoe Plant and Ishikawa Sanken, increasing the speed of assessments in product development.

On the environmental front, we improved the efficiency of air conditioning by consolidating floor layouts and evaluation



equipment with an eye on waste heat, which should lead to ¥22 million in annual savings on electricity costs.

### Yamagata Sanken

#### Improvements in Wastewater Systems

Yamagata Sanken expanded its wastewater treatment facilities from October 2018 to May 2019 in order to reduce the risk of non-compliance with wastewater standards under the Water Pollution Control Law, and to eliminate deficiencies in treatment capacity caused by an increase in process wastewater from expanded production processes.

Treatment of hydrofluoric acid effluent requires storage in buildings due to potential soil contamination. Yamagata Sanken intends to add to its current layout instead of constructing new buildings, while addressing thorny issues like cost reductions and considering the impact on production.

As a result, compared with fiscal 2014, wastewater treatment capacity has been increased by 22% for background wastewater processing of abrasive effluents and by 61% for hydrofluoric acid effluent and biochemical oxygen demand effluent processing.



### Fukushima Sanken

#### Installation of Solar Power Generation

Within the Sanken Group, Fukushima Sanken was relatively quick to install solar power generators as a form of renewable energy.

In 2013, Fukushima Sanken installed a small-scale 5.16 kW system, and then added another 39.2 kW onto the system in 2018, as detailed below.

As a result, annual power generation capacity is now 41,000 kWh, which shaves roughly ¥700,000 off electricity costs every year.

Moreover, Fukushima Sanken has installed electric power demand equipment in order to further increase the effectiveness of energy conservation.



#### Summary

Power generation capacity	39.2 kW
Power conditioners	Sanken Electric's products x 4
Total investment	¥12.4 million



## Social Contribution Activities

### We care about our relationship with communities and society.

As a good corporate citizen, we will respect the cultures and customs of the communities and regions where we conduct business, strive to cooperate with local communities, engage in education and volunteer activities, and support projects that invigorate regions with the aim of building mutual relationships of trust and contributing to the sustained development of regional societies.

From the Sanken Group's Fundamental CSR Policy

The Sanken Group engages in various activities based on positive relationships with local communities with the understanding that the sustained development of local communities supports its development as a corporation.

At the center of our activities is our corporate philosophy of providing optimum solutions in our core business of semiconductors, as well as power electronics and other peripheral areas. By putting this philosophy into practice, we intend to contribute significantly to the environmental field, and understand that conveying our knowledge and experiences is an important way of giving back to communities.

In particular, we believe one of our highest CSR priorities is conveying to people who will lead the next generation the importance of the environment, activities to conserve energy and promote ecology, and activities to reduce trash. Based on this belief, we have offered the Children's Environmental Classroom, especially for elementary school students.

The Children's Environmental Classroom has become more established at Sanken Group companies with classrooms periodically held at local elementary schools and community centers. By continuing activities like this, we aim to remain deeply involved in programs to promote environmental conservation.

Pet Botaru® lights that feature our LEDs are used for the reconstruction of areas damaged by natural disasters and for the rejuvenation of communities and towns. In this sense, Pet Botaru® lights are more than mere energy-conserving LEDs. They are like a beacon of hope that helps draw in tourists.

In addition to these activities that put its corporate philosophy into practice, the Sanken Group also periodically assists at facilities for disabled people as another way of giving back to the community.

Our aim is to help people with disabilities lead independent lifestyles and engage with their communities by creating many opportunities for interaction with Sanken Group employees, and through these experiences, participate more fully in society while realizing their own potential by plying their own skills. For example, people with disabilities at our facilities sell cookies they baked themselves on Company premises. We also have people with disabilities gain experience by engaging in light work on Company premises. Through this assistance, we hope that people who have disabilities can experience the joys and excitement of working while engaging more fully in society.

Through these activities, the Sanken Group aims to gain recognition among local residents as a valuable company that contributes to local communities and culture.



- ① Children's Environmental Classroom at Nobitome Elementary School in Niiza City
- ② Ecology survey at Tohoku Elementary School in Niiza City
- ③ Overseas programs for children (Pohnpei, Micronesia)
- ④ Children's hands-on classes during summer vacation at Minami Community Center in Kawagoe City
- ⑤ Children's Manufacturing Classroom at Ishikawa Sanken
- ⑥ Kamisu Festival at Kashima Sanken (Kamisu City's Consumer Lifestyle Exhibition)
- ⑦ Money classes, ecology energy conservation, and LED workshops at Resona Kid's Academy
- ⑧ Pet Botaru®
- ⑨ Hands-on LED classes for families during summer vacation at Fukushima Sanken
- ⑩ Children's Environmental Classroom + LED workshop at Daito Community Center in Kawagoe City
- ⑪ Electronics workshop at Hatanaka Community Center in Niiza City
- ⑫ Children's classes during summer vacation at Kurihara Community Center in Niiza City
- ⑬ Cookie bake sale via Fukushi Kobo Sawarabi at the headquarters
- ⑭ Cookie bake sale via Kawagoe Work Ichiban Hoshi (Kawagoe Plant)
- ⑮ Light work experiences via Fukushi Kobo Sawarabi



# Corporate Governance

With the objective of increasing management efficiency, improving transparency and maintaining soundness, Sanken Electric has voluntarily established the Nomination Committee and Compensation Committee and also appointed external directors and outside Auditor and Supervisory Board members in order to ensure rapid and accurate decision-making by the Board of Directors while reinforcing supervisory functions for business execution.

## Corporate Governance Structure

As a company with global operations, Sanken Electric believes that it should select “a corporate governance system that is best suited for the current unique nature of the Company,” taking into consideration such factors as the need to open wide channels of communication with various stakeholders. Based on this thinking, we have adopted an Audit and Supervisory Board structure, with a Board of Directors composed of 9 directors, including 3 external directors, and an Audit and Supervisory Board with 4 members, including 2 outside members. We have also adopted a corporate officer system that separates management decision-making and supervision functions from business execution functions, completing a structure able to rapidly address changes in the business environment. As of June 21, 2019, Sanken Electric had 16 corporate officers, including 5 who also concurrently serve as directors.

## Policy and Process for Nominating Officer Candidates

We believe it is important for members of the Board of Directors to be independent and diverse from the standpoint of knowledge, experience and skills, in order to ensure the independence and objectiveness of the Board of Directors as it effectively performs its duties and responsibilities. In this context, candidates for the position of senior executive director who are well-versed in the Company’s businesses and related issues are nominated in order to align management in the same strategic direction. For candidates for external director positions, individuals who are independent, have diverse knowledge and backgrounds, and are able to contribute to ensuring fairness in business execution from an objective standpoint are nominated. These candidates are expected to provide advice that will lead to improvements in corporate value.

Based on these policies, the Nomination Committee, which is comprised by a majority of external directors, is consulted to advise on candidates for director and corporate officer positions,

and after deliberations by this committee, a report is delivered to the Board of Directors, which bases its decisions with the utmost respect for the committee’s report. Candidates for Audit and Supervisory Board member are decided by the Board of Directors after receiving consent from the Audit and Supervisory Board.

## Officer Compensation

Compensation for the Company’s directors consists of a basic remuneration in a fixed amount and performance-linked remuneration that changes depending on the degree of achievement in earnings targets. Performance-linked remuneration is designed to provide short-term incentives that vary based on short-term earnings and long-term incentives that vary based on longer-term earnings. In principle, performance-linked remuneration is set at about 30% of total remuneration when earnings targets are fully achieved.

Compensation for external directors consists only of basic remuneration based on the nature of responsibilities for the position, and it is not linked to performance. Compensation for Audit and Supervisory Board members consists solely of basic remuneration based on the nature of responsibilities for the position of auditor, and it is not linked to performance.

Based on these policies, compensation for directors is decided by the Board of Directors with due respect paid to the advice and report following deliberations by the Compensation Committee, the majority of which is independent external directors.

## State of Audit and Supervisory Board Audits and Accounting Audits

Audit and Supervisory Board members share information and make decisions about the composition of the board, auditing policy, audit plans and other legal matter. Each member is assigned duties determined by the Audit and Supervisory Board, participates in meetings of the Board of Directors, Executive Committee and other important bodies, reads important documents and reports their findings to the Audit and Supervisory Board. Periodically or when necessary, members convene meetings with directors, the CSR Office and the accounting auditor to exchange information and enhance the effectiveness of audits through collaboration. Moreover, the members conduct on-site audits of the business locations of Sanken Group companies inside and outside Japan, and report their findings to the Audit and Supervisory Board.

We have enlisted Ernst & Young ShinNihon as our accounting auditor based on the Companies Act and as our auditing firm to conduct audits based on the Financial Instruments and Exchange Act. Briefings are scheduled for the accounting firm and the Audit and Supervisory Board to exchange opinions and enhance collaboration. There are no particular conflicts of interest between the accounting firm or its corporate officers and the Company.

## Internal Control System and Compliance System

Sanken Electric has drawn up Conduct Guidelines for adhering to ethical standards, laws and regulations, in addition to its Code of Conduct governing employee behavior. The representative director thoroughly instills within management and employees the spirit and importance of compliance. Through ongoing

compliance training, we aim to thoroughly ensure adherence to laws, regulations and the Articles of Incorporation. For our internal reporting system, we have set up the Helpline System as a means for employees to report and consult about internal matters, and we make concerted efforts to improve rules and systems in order to maintain our compliance structure. As necessary, officers are dispatched to Group companies to assume the position of director and work to instill the Sanken Group’s management policies, make decisions about important business execution, and promote efficient management. The Affiliated Company Management Regulations and Management Guidelines serve to clarify the scope of responsibilities and authorities of Sanken Electric and Group companies. We determine responsible organizations at Group companies and closely share information for the purpose of providing necessary guidance for managers and business performance management at each Group company.

## Risk Management System and Activities

The Sanken Group created the Risk Management Committee, directly under the control of the president, as an organization tasked with strengthening the overall risk management structure and advancing measures that address certain risks. The Risk Management Committee holds meetings on a regular basis, during which information is shared about improving emergency preparedness such as stockpiling emergency supplies, previous responses to disasters, and effective training methods. A variety of measures are being taken, including measures to raise the entire Group’s ability to respond to disasters.

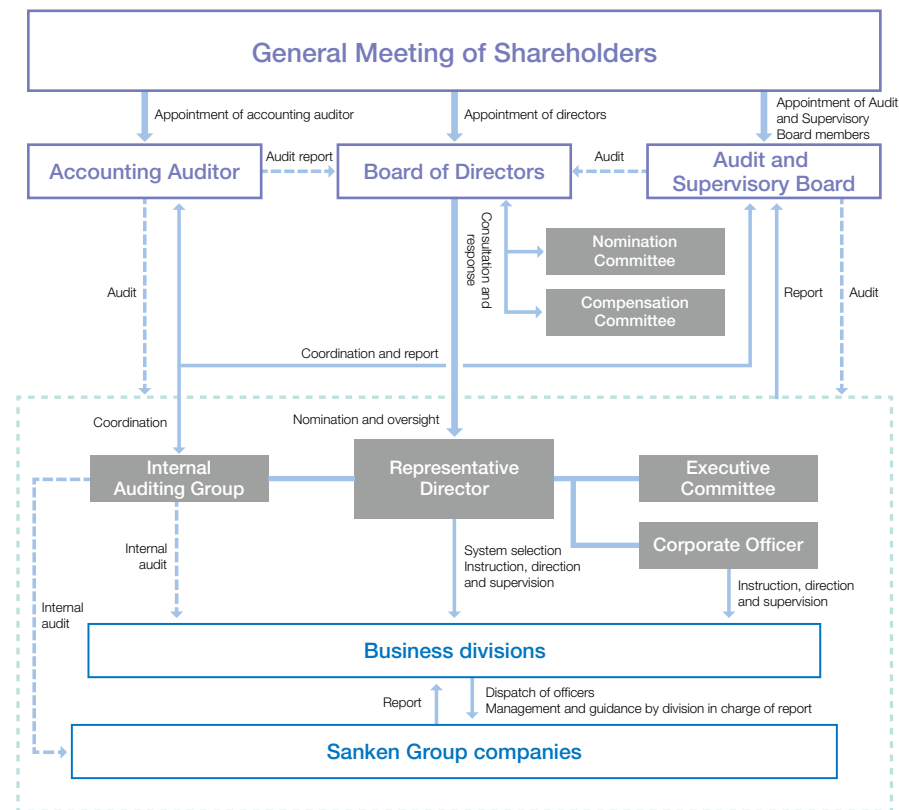
The Sanken Group issued the Disaster Countermeasure Manual and the Business Continuity Plan (BCP) that set out procedures for minimizing and recovering from damage caused by disasters, in order to address the risk of major damage that impairs business continuity, such as an earthquake or fire accident. We have also introduced an employee safety confirmation system for emergency situations. Through regular training to ensure these measures are effectively implemented, we continue to engage in activities to further improve our responsiveness to major disasters.

## Information Security

The Sanken Group aims to ensure information security by preparing Information Management Rules to reinforce the protection and management of contract terms and conditions with suppliers, information about technology, corporate secrets such as production conditions, and other information assets. We also update manuals for managing information and defining the scope of information that should be protected in accordance with the Personal Information Protection Act and Unfair Competition Prevention Act.

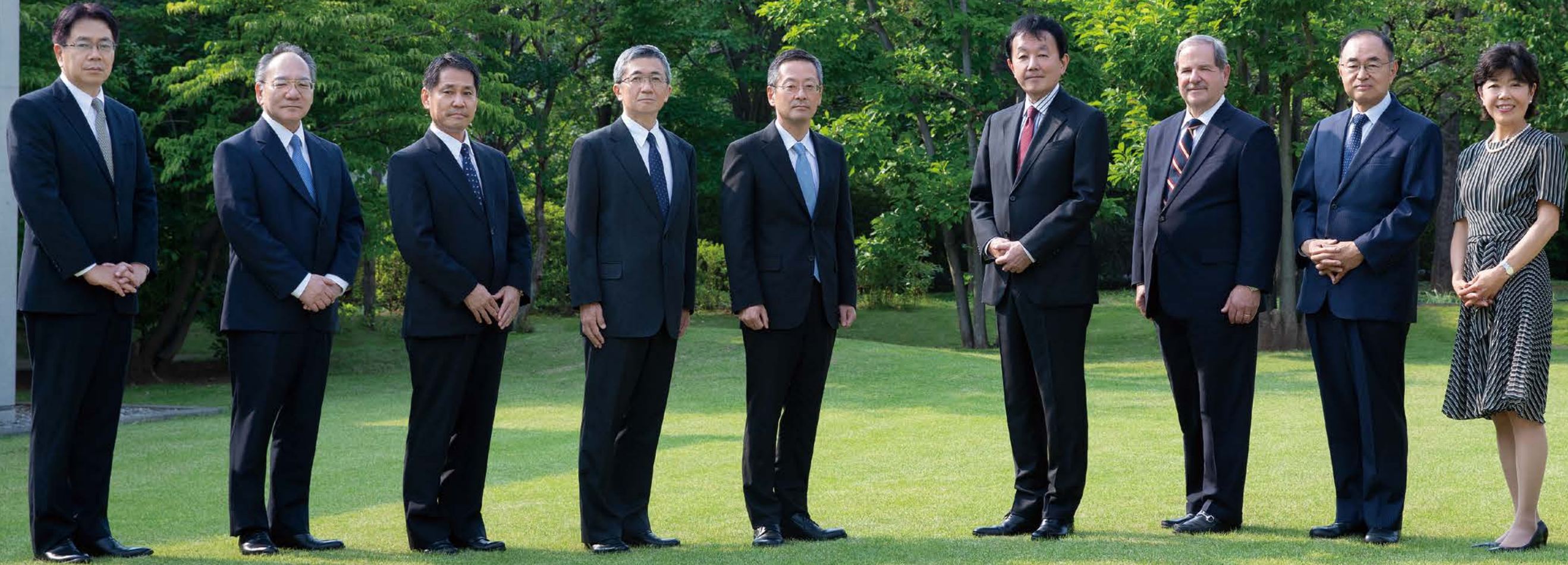
Audits are also performed by the CSR Office to better understand the state of training and information management procedures, and the results of these audits are used to strengthen the information management systems of business divisions.

Sanken Electric is keen to reinforce the security of its externally connected communications networks to protect against illicit intrusions. We ensure the effectiveness of network security by formulating guidelines for protecting and monitoring network communications and using networks. We also have guidelines for cybersecurity, and periodically conduct emergency response drills.





## Management Supporting the Sanken Group



Directors (9)

**Hideo Takani**  
Director

**Yoshihiro Suzuki**  
Director

**Takashi Wada**  
Representative Director, President

**Noriharu Fujita**  
External Director

**Shigeru Ito**  
Director

**Kazunori Suzuki**  
Director

**Masao Hoshino**  
Director

**Richard R. Lury**  
External Director

**Emiko Higashi**  
External Director

### Audit and Supervisory Board Members (4)



**Akira Ota**  
Standing Audit and Supervisory Board Member



**Noboru Suzuki**  
Audit and Supervisory Board Member



**Atsushi Minami**  
External Audit and Supervisory Board Member



**Hideki Hirano**  
External Audit and Supervisory Board Member



## Messages from External Directors



I will encourage Sanken's management to take actions to improve Sanken's profitability and value for the benefit of all stakeholders.



**Richard R. Lury**  
External Director

U.S. Lawyer in New York  
External Director, Hitachi Zosen Corporation  
Director of the Company since 2014

As I begin another year as an external director of Sanken Electric Co., Ltd. (hereafter "Sanken" or the "Company"), I would like to share with you some thoughts regarding the Company's progress since I joined the Board of Directors in 2014.

For the first two years after I joined the Sanken Board, I was the only external director; all other directors were Company employees. Most matters raised at board meetings were of a fairly routine nature, and my impression was the Company's management was generally resistant to change.

Over the course of the most recent 3 years, however, and particularly in the past 18 months, significant changes have begun to take place. Another external director joined the Sanken board three years ago, and opportunities were provided for the external directors to meet privately with Sanken's president in an environment more conducive to discussion of strategic issues and concerns. Last year the Company created two new advisory committees of the board, a Nominating Committee and a Compensation Committee, a majority of whose members are external directors. One significant outcome was a change in the structure of compensation for senior officers. Under this new compensation structure, which was introduced for the current fiscal year, a large portion of individual compensation has been shifted away from seniority or length of service and towards productivity, with a particular focus on improving the profitability of Sanken's domestic businesses. It is anticipated that this compensation structure will be extended deeper into Sanken's organization in the coming years, and that Sanken's financial results will begin to show notable improvement.

It is clear, however, that additional changes will need to be implemented. Sanken has been challenged to produce profits in its domestic businesses and its stock price has languished for some time. Fortunately, Sanken's management increasingly has shown that it appreciates the importance of taking serious steps to restructure the Company's operations in order to materially improve the Company's profitability and growth prospects; and it also has begun to recognize the advantages of creating greater diversity within the Company's leadership, as evidenced by the recent nomination and election to Sanken's board of a very accomplished woman with particular expertise in corporate finance and governance. The Company is now also in the process of developing plans to implement ESG and SDG goals more formally.

Sanken's Board of Directors now includes three external directors, who make up one-third of the entire board. The external directors inevitably will have increasing influence on the direction of the Company. I expect the external directors to encourage Sanken's management to move aggressively, quickly and decisively to implement actions aimed at improving Sanken's profitability and value for the benefit of all stakeholders. I am personally looking forward to the opportunity and challenge of assisting Sanken's management as it takes steps to insure the future success of the Company.



I aim to support sound growth of the Sanken Group from the stakeholders' perspective.



There has been a strong call for corporate governance in Japan over the past few years, and many listed companies have appointed external directors. Looking ahead, I believe that demand will focus on quality rather than quantity. Sanken Electric has three external directors with unique insights and experience, and actively encourages discussion in a free and frank atmosphere. The Company has made significant changes in line with the needs of the times, voluntarily establishing a Nomination Committee and Compensation Committee, with external directors forming the majority of membership and serving as the committee chairs.

I am a certified public accountant, and I have worked for about 20 years in a planning and marketing role for a chemical company in the United Kingdom and in a major accounting consulting office in the United States, where I gained experience in consulting on North American business strategies and other matters for Japanese companies. Recently, I was also appointed as an independent director for a Chinese state-owned conglomerate, where I gained business experience in environments that differ from Europe and the United States, such as East Asia and ASEAN countries. I believe that this experience helps me to understand the global development of Sanken Electric.

As an external director, I have only limited access to information



**Noriharu Fujita**  
External Director

Partner, Ernst & Young, LLP New York Office  
(retired from the entity in June 2007)  
Independent Non-Executive Director, CITIC Limited  
(retired from the entity in April 2018)  
Director of the Company since 2016

by simply attending Board of Directors meetings. To gain a proper understanding of the Company's corporate culture and the thinking of its employees, I visit sales offices in Japan and manufacturing subsidiaries in Japan and overseas. At the Headquarters, I conduct group meetings and one-to-one interviews with management and other people as necessary to have a frank exchange of opinions. Communication is very important, and sometimes we lose track of time during our deep discussions.

Going forward, as an independent external director I aim to judge the events in the market rationally and support the sound growth of the Sanken Group acting from the stakeholders' perspective, having understood its corporate culture properly as it expands globally through the Company and its important subsidiaries in the United States.



Employees who come to work each day with a sense of excitement serve as the hallmark of a good company.



My name is Emiko Higashi, and I have been newly appointed as an external director. Since my appointment at the end of June 2019, I have already had opportunities to talk with 10 or so employees of Sanken Electric outside of the Board of Directors members. Each of them shared their experiences at Sanken Electric openly, making these meetings very significant for me. I would like to thank you all sincerely for sharing.

When I received an invitation from President Wada urging me to join the board as an external director, I was initially somewhat hesitant. I have been involved with Japan as an advisor for Japanese companies for some time, but my work for the past 30 years or so had been based in the United States. Furthermore, my environment on Wall Street in New York and in Silicon Valley in California typify American capitalism in both its positive and negative aspects, and I wondered how I would be able to contribute to Sanken Electric in Japan. When I said that I would insist on speaking my mind freely, the president agreed readily, and asked me to do just that. So I decided to take the assignment as a new challenge.



**Emiko Higashi**  
External Director

Managing Director, Tomon Partners, LLC  
External Director, KLA Corporation  
External Director, Takeda Pharmaceutical Company Limited  
Director of the Company since 2019

However, speaking my mind has no meaning if nothing follows. I believe that my contribution should lead to discussion, that discussion should lead to implementation for the entire company, decision-making through execution plans, and management judgment. Not only the Board of Directors, but each employee should feel that their words and opinions will lead to decision-making for the Company, and to its future success. I believe that employees who feel this and come to work each day with a sense of excitement serve as a hallmark of a good company. I have a lot to learn from all of you. I would be greatly honored to achieve this and be of some assistance to your future success, and that of Sanken Electric.



## List of Officers

### Directors and Audit and Supervisory Board Members

Representative Director, President	Takashi Wada
Director	Masao Hoshino
Director	Yoshihiro Suzuki
Director	Kazunori Suzuki
Director	Hideo Takani
Director	Shigeru Ito
External Director	Richard R. Lury
External Director	Noriharu Fujita
External Director	Emiko Higashi
Standing Audit and Supervisory Board Member	Akira Ota
Audit and Supervisory Board Member	Noboru Suzuki
External Audit and Supervisory Board Member	Atsushi Minami
External Audit and Supervisory Board Member	Hideki Hirano

### Corporate Officers

Executive Vice President	Masao Hoshino (General Manager of Device Business Corporate Headquarters)
Senior Vice President	Yoshihiro Suzuki (General Manager of Euro-Americas Business Strategy Headquarters)
Senior Vice President	Kazunori Suzuki (General Manager of Sales Headquarters)
Senior Vice President	Takeshi Soroji (General Manager of Work Style Innovation Promotion Headquarters)
Senior Corporate Officer	Hideo Takani (General Manager of Administration Headquarters)
Senior Corporate Officer	Hideki Nakamichi (General Manager of Engineering Headquarters, Device Business Corporate Headquarters)
Senior Corporate Officer	Shigeru Ito (General Manager of Power System Headquarters)
Corporate Officer	Yukiyasu Taniyama (With the President, and President of Fukushima Sanken Co., Ltd.)
Corporate Officer	Kiyonori Orito (Deputy General Manager of Sales Headquarters, General Manager of Nagoya Sales Division, and General Manager in charge of Automotive Device Market)
Corporate Officer	Makoto Iwata (General Manager of Corporate Planning Office, Administration Headquarters)
Corporate Officer	Myungjun Lee (Deputy General Manager of Engineering Headquarters, Device Business Corporate Headquarters and General Manager in charge of White Goods Market)
Corporate Officer	Tetsuo Bannai (General Manager of Assembly Engineering Division, Engineering Headquarters, Device Business Corporate Headquarters)
Corporate Officer	Sumio Anzai (General Manager of Power Marketing Division, Power System Headquarters)
Corporate Officer	Satoshi Yoshida (General Manager of Eastern Japan Sales Division, Sales Headquarters and General Manager in charge of Industrial Equipment Market)
Corporate Officer	Masayuki Yanagisawa (General Manager of General Affairs and Human Resources Division, Administration Headquarters)
Corporate Officer	Hiroshi Takahashi (General Manager of Production Headquarters, Device Business Corporate Headquarters)

## IR/SR Activities

Top management and other members of the management team are keen to create opportunities for engaging in constructive dialogue with shareholders, investors and analysts. Through these discussions, management aims to further their understanding of the Sanken Group's growth strategies and business plans, while feeding back to key managers their opinions and concerns about Sanken Electric in a timely manner. By sharing an understanding of relevant issues, our ultimate aim is to achieve sustainable growth and improvement in corporate value for the entire Sanken Group over the medium and long terms.

### Engagement with Institutional Investors and Analysts

The Sanken Group prioritizes making top management available to explain matters of strong interest to external parties and directly answer their questions. Results briefings for analysts and institutional investors are held twice a year as venues for the president and other top management to explain the Company's business plans and growth strategies.

### Principal Activities in Fiscal 2018

- Held discussions with institutional investors and analysts for a total of 240 companies
- Held results briefings and business briefings (twice) by the president and the director in charge of the Administration Headquarters
- Held small meetings (2 times)

Management also proactively participates in conferences for investors that are sponsored by securities firms, and reports to key managers any relevant opinions received from institutional investors inside and outside Japan. In addition, we hold briefings for individual investors and tours of our plants as a part of ongoing and proactive IR activities.

### IR Information

To augment discussions with shareholders and investors, we make available the latest results materials and press releases in the IR Library on our website, which also has a form for inquiries about IR matters.

To deepen everyone's understanding of Sanken Electric, management also makes efforts to improve the content of our annual report.



Results briefing



Briefing for individual investors



Sanken Electric's IR website



# Key Consolidated Financial and Non-Financial Data (11 Years)

(Fiscal year)

Financial data	Millions of yen										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Results of operations</b>											
Net sales	¥147,003	¥134,134	¥144,882	¥131,803	¥126,386	¥144,467	¥160,724	¥155,919	¥158,772	¥ 175,209	<b>¥ 173,650</b>
Operating income (loss)	(4,891)	(5,482)	6,149	4,048	4,625	7,777	11,199	6,803	5,930	12,026	<b>10,531</b>
Operating margin (%)	(3.3)	(4.1)	4.2	3.1	3.7	5.4	7.0	4.4	3.7	6.9	<b>6.1</b>
Profit (loss) before income taxes	(10,611)	(18,166)	1,144	2,545	4,099	5,468	11,575	2,068	4,582	(6,505)	<b>9,028</b>
Profit (loss) attributable to owners of parent	(15,773)	(18,950)	(922)	436	2,272	5,029	7,942	171	1,739	(11,421)	<b>3,967</b>
<b>Cash flows</b>											
Net cash provided by (used in) operating activities	14,056	5,105	7,392	5,345	6,339	10,658	9,973	7,799	19,237	14,521	<b>14,604</b>
Net cash provided by (used in) investing activities	(12,181)	(4,568)	(10,272)	(8,614)	(6,390)	(11,176)	(14,234)	(11,344)	(10,931)	(16,644)	<b>(21,783)</b>
Net cash provided by (used in) financing activities	2,999	(1,280)	3,728	509	1,294	2,714	5,692	5,044	(3,360)	13,233	<b>(1,990)</b>
<b>Financial indicators</b>											
Return on assets (ROA) (%)	(4.8)	(4.3)	3.8	2.2	2.8	4.8	5.8	2.0	2.7	6.4	<b>4.9</b>
Return on equity (ROE) (%)	(23.4)	(40.1)	(2.6)	1.3	6.3	11.4	14.3	0.3	3.2	(20.8)	<b>7.0</b>
<b>Per share</b>											
Total net assets per share* (yen)	471.98	306.54	274.05	272.21	322.92	401.75	516.22	441.96	448.87	2,283.31	<b>2,405.01</b>
Net income (loss) per share* (yen)	(129.85)	(156.05)	(7.60)	3.60	18.73	41.47	65.50	1.41	14.35	(471.22)	<b>163.70</b>
Cash dividends per share* (yen)	10.00	0.00	6.00	3.00	6.00	6.00	6.50	3.50	3.50	30.00	<b>30.00</b>

\* Figures for the fiscal year ended March 31, 2018 onward have been adjusted to reflect a 5:1 stock consolidation implemented on October 1, 2018.

Non-financial data	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CO <sub>2</sub> emissions* <sup>1</sup> (t-CO <sub>2</sub> )	97,683	80,911	71,466	80,004	77,632	77,870	77,415	78,291	79,158	80,069	<b>80,609</b>
Water usage* <sup>1</sup> (m <sup>3</sup> )	2,966,507	2,865,649	2,585,823	2,206,556	2,190,217	2,112,286	2,186,104	2,262,152	2,405,162	2,364,990	<b>2,328,615</b>
Waste emissions* <sup>1</sup> (t)	7,070	6,249	6,462	4,871	4,508	5,295	5,146	4,417	4,687	5,496	<b>5,349</b>
Employees (people)	10,063	9,986	9,981	9,788	10,427	10,377	10,454	10,044	9,770	9,725	<b>9,481</b>
Rate of paid annual leave usage* <sup>2</sup> (%)	—	—	—	—	—	—	67.74	69.13	68.82	70.46	<b>69.57</b>
Employment rate of people with disabilities* <sup>2</sup> (%)	—	—	—	—	—	—	2.39	2.32	2.32	2.40	<b>2.29</b>

\*<sup>1</sup> Total for domestic manufacturing sites

\*<sup>2</sup> Sanken Electric (non-consolidated)



# Business Risks

The Sanken Group has identified the following risks that could affect its business performance and financial conditions. The forward-looking statements in this section are based on available information as of March 31, 2019. Due to uncertainties contained herein, actual results in the future may differ significantly from these statements.

## 1. Strategic risks

### (1) New product development

The Sanken Group must develop and bring to market products that fulfill market needs in the electronics industry, which rapidly changes in terms of technological advancements and product cycles. The Sanken Group engages in R&D while constantly monitoring market trends. If the Company is unable to introduce products in a timely fashion or if markets reject its products, the Sanken Group's profitability may worsen, and its earnings and financial condition may deteriorate.

### (2) Price competition

Price competition is constantly intensifying in the electronics industry. The emergence of rivals with production bases in China and Southeast Asia may have a major impact on the Company's ability to set prices for its products. As price competition is likely to grow more intense in the future, the Sanken Group will respond by working to reduce costs further and bring to market high-value-added products that feature the Company's proprietary technologies. However, in the event that rivals introduce products at prices the Company cannot match or if customer demand changes, the Sanken Group's profitability may worsen, and its earnings and financial condition may deteriorate.

### (3) Capital procurement

The Sanken Group procures funds needed for capital investment and R&D by issuing bonds and commercial paper, taking out commitment lines, and borrowing from banks. In the event that the Company's creditworthiness worsens on the bond market or with financial institutions, it could restrict means for procuring funds or increase the cost of fund procurement, and have an adverse impact on the Company's earnings and financial position.

### (4) Intellectual property

The Sanken Group aims to differentiate its products from those of rivals through the technologies and expertise it has developed on its own. In order to protect these proprietary technologies, the Company applies for and registers intellectual property rights as needed and to the greatest extent possible. In foreign countries and regions, however, there may be inadequate protections for

intellectual property rights that make it impossible for the Company to effectively prevent a third party from using its intellectual property to manufacture similar products. In the event that a third party successfully claims intellectual property rights related to the Sanken Group's businesses or if intellectual property rights exist that the Sanken Group is unaware of, the Company may be required to pay royalties to a third party that claims their intellectual property rights were infringed upon or may be sued or enjoined from using certain intellectual property rights. In this event, costs may increase or the Company may be restricted from developing and selling products.

## 2. External environment risks

### (1) Economic conditions

The Sanken Group has manufacturing bases in Japan, Asia, North America, Europe and other foreign countries and regions. On a consolidated basis, overseas production as a percentage of total output was 57.5%, 54.9%, and 59.3% for the fiscal years ended March 31, 2017, 2018 and 2019, respectively. Furthermore, the overseas sales ratio was 61.7%, 63.6%, and 62.5% for the fiscal years ended March 31, 2017, 2018 and 2019, respectively. Accordingly, economic trends and other changes in the business environment in these regions could have an adverse impact on the Sanken Group's earnings and financial position.

### (2) Foreign exchange rates

The Sanken Group's earnings include production and sales in foreign countries and regions, and its accounting practices are denoted in the local currencies of these countries and regions, or in US dollars. Accordingly, the prevailing exchange rate at the time these currencies are translated into yen could have an impact on earnings.

Furthermore, the Sanken Group's ratio of exports to net sales on a consolidated basis was 42.7%, 43.6%, and 42.6% for the fiscal years ended March 31, 2017, 2018 and 2019, respectively. Of that ratio, the percentage denominated in foreign currencies was 91.1%, 92.9%, and 92.1% for the fiscal years ended March 31, 2017, 2018 and 2019, respectively. To address the risk of fluctuations in exchange rates in business transactions, the Sanken Group takes out balance hedges for receivables, payables and other transactions in accordance with growth in products and the overseas procurement of raw materials, as well as risk hedges through forward

exchange contracts. These hedges are taken in a bid to minimize any adverse impact caused by short-term fluctuations in foreign exchange rates for key currencies including the US dollar and yen.

An increase in the value of currencies in countries and regions where the Sanken Group manufactures products may push up the cost of production and procurement. Higher costs could undermine the Sanken Group's profit margins and price competitiveness, and have a negative impact on earnings.

## 3. Internal environment risks

### (1) Laws and regulations

The Sanken Group has production and sales bases in 14 countries and regions around the world, including Japan. The Company's operations are subject to various laws, regulations and restrictions (hereinafter, "legal regulations") in effect in each country and region. Moreover, the Sanken Group imports and exports technologies, products and materials needed for production and sales around the world. These business activities are subject to legal regulations in each country and region that relate to tariffs, trade, exchange rates, strategic goods, certain technologies, anti-monopoly, patents and the environment. In the event of failure to adhere to these legal regulations, the Sanken Group's business activities may be restricted and lead to a decline in social trust. This may have an adverse impact on the Sanken Group's earnings and financial position.

### (2) Quality problems

The Sanken Group supplies products that satisfy the quality standards of its customers and itself. In order to maintain and improve its quality management system, the Company has obtained the international standard ISO 9001 for quality management, and also obtains as necessary UL certification and other product safety certifications. However, there is no guarantee in the future that all of its products will be free from defects, which may lead to recalls or repairs of products. In the event of product defects that lead to major product recalls, repairs or responsibilities to compensate for damages, the Company may incur considerable costs or lose the trust of society. This may have an adverse impact on the earnings and financial position of the Sanken Group.

### (3) Environmental problems

The Sanken Group complies with legal regulations for preventing environmental pollution and public nuisances in countries and regions where it has production bases. The Company also takes other environmental measures, such as obtaining the international standard ISO 14001 for environmental protection systems. It endeavors to measure and reduce substances contained in its products and used in production processes that impact the environment. In the event that the Company is unable to comply with legal regulations, an accident occurs that releases a large volume of substances that impact the environment, or prohibited substances that impact the environment cannot be eliminated from products, significant costs to improve such products, suspended business activities, compensation paid to customers, or diminished social trust may have an adverse impact on the earnings and financial position of the Sanken Group.

In addition to the aforementioned items, there is the possibility that demand for the Company's products will decline as a result of technological trends in electronic products that use the Company's products or rapid changes in the market environment. In addition, there is the risk of an increase in raw material costs, natural disasters and fires at production bases and suppliers of parts and materials, or breakdowns in social and communications infrastructures. Moreover, there are unforeseen risks in various countries and regions including major changes to laws and tax codes, wars, terrorism and outbreaks of disease. Furthermore, there is a risk that product defects could lead to lawsuits or compensation for loss of life, social or environmental damage, or adverse impacts on corporate activities. There is also a risk of changes in base rates for calculating retirement benefit obligations, or a risk that corporate information, including personal information, could be inappropriately used as a result of expansion in information systems.

In the event that one or several of these risks materialize, it could lead to loss of social trust, suspension of business activities, or significant losses, which may have an adverse impact on the earnings and financial position of the Sanken Group.



# Consolidated Balance Sheets

Sanken Electric Co., Ltd. and Consolidated Subsidiaries  
As of March 31, 2019 and 2018

Assets	Millions of yen		Thousands of U.S. dollars (Note 3)
	2019	2018	2019
<b>Current assets:</b>			
Cash and deposits (Notes 4 and 6)	¥ 23,564	¥ 32,752	\$ 212,273
Notes and accounts receivable – trade (Notes 5 and 6)	33,586	34,656	302,552
Less allowance for doubtful receivables	(65)	(58)	(590)
Inventories (Note 9)	42,061	37,631	378,897
Other current assets	4,757	5,644	42,852
<b>Total current assets</b>	<b>103,903</b>	<b>110,625</b>	<b>935,986</b>
<b>Non-current assets:</b>			
Property, plant and equipment (Note 10):			
Land	6,166	5,712	55,545
Buildings and structures, net	24,027	20,833	216,443
Machinery, equipment and vehicles, net	34,731	30,690	312,867
Tools, furniture and fixtures, net	2,042	1,427	18,397
Leased assets, net	62	503	560
Construction in progress	5,574	4,800	50,217
<b>Total property, plant and equipment</b>	<b>72,604</b>	<b>63,968</b>	<b>654,031</b>
<b>Intangible assets:</b>			
Software	2,786	2,936	25,097
Other	2,169	2,177	19,540
<b>Total intangible assets</b>	<b>4,955</b>	<b>5,114</b>	<b>44,637</b>
<b>Investments and long-term receivables:</b>			
Investments in other securities (Notes 6 and 7)	1,093	1,407	9,848
Deferred tax assets (Note 21)	1,221	1,302	10,999
Assets for retirement benefits (Note 19)	18	399	164
Other long-term receivables	4,637	2,782	41,779
Less allowance for doubtful receivables	(241)	(242)	(2,171)
<b>Total investments and long-term receivables</b>	<b>6,729</b>	<b>5,651</b>	<b>60,619</b>
<b>Total assets</b>	<b>¥188,192</b>	<b>¥185,359</b>	<b>\$1,695,274</b>

Liabilities and net assets	Millions of yen		Thousands of U.S. dollars (Note 3)
	2019	2018	2019
<b>Current liabilities:</b>			
Short-term bank loans (Notes 6 and 11)	¥ 12,991	¥ 13,339	\$ 117,031
Current portion of long-term debt (Notes 6 and 11)	646	500	5,825
Current portion of bonds	—	15,000	—
Commercial paper (Notes 6 and 11)	11,000	7,000	99,090
Notes and accounts payable (Note 6)	18,075	20,634	162,826
Accrued expenses	11,705	11,337	105,441
Lease obligations	30	87	273
Income taxes payable	591	412	5,325
Other current liabilities	1,368	1,370	12,331
<b>Total current liabilities</b>	<b>56,409</b>	<b>69,683</b>	<b>508,145</b>
<b>Long-term liabilities:</b>			
Bonds payable (Notes 6 and 11)	35,000	25,000	315,286
Long-term debt (Notes 6 and 11)	11,855	11,475	106,793
Lease obligations	41	67	371
Accrued retirement benefits for directors	33	25	302
Liabilities for retirement benefits (Note 19)	2,832	2,632	25,514
Deferred tax liabilities (Note 21)	1,508	1,796	13,590
Other long-term liabilities	1,970	2,395	17,754
<b>Total long-term liabilities</b>	<b>53,242</b>	<b>43,392</b>	<b>479,614</b>
<b>Net assets (Note 23):</b>			
Shareholders' equity:			
Common stock:			
Authorized – 51,400,000 shares			
Issued and outstanding: 2019 – 25,098,060 shares	20,896	20,896	188,242
Capital surplus	26,214	26,003	236,147
Retained earnings	20,204	16,964	182,006
Less treasury stock, at cost: 865,315 shares in 2019	(4,023)	(4,017)	(36,244)
Total shareholders' equity (Note 27)	63,292	59,846	570,151
Accumulated other comprehensive income (loss):			
Unrealized holding gain (loss) on securities	45	390	410
Translation adjustments	212	(909)	1,916
Retirement benefit liability adjustments	(5,270)	(3,991)	(47,481)
Total accumulated other comprehensive income (loss)	(5,012)	(4,510)	(45,154)
Non-controlling interests	20,261	16,947	182,518
<b>Total net assets</b>	<b>78,541</b>	<b>72,283</b>	<b>707,514</b>
<b>Total liabilities and net assets</b>	<b>¥188,192</b>	<b>¥185,359</b>	<b>\$1,695,274</b>

The accompanying notes are an integral part of the consolidated financial statements.



## Consolidated Statements of Operations

Sanken Electric Co., Ltd. and Consolidated Subsidiaries  
For the years ended March 31, 2019 and 2018

	Millions of yen		Thousands of U.S. dollars (Note 3)
	2019	2018	2019
Net sales	¥173,650	¥175,209	\$1,564,275
Cost of sales (Notes 19, 23 and 25)	126,150	126,840	1,136,389
<b>Gross profit</b>	<b>47,499</b>	<b>48,369</b>	<b>427,885</b>
Selling, general and administrative expenses (Notes 13, 19, 24 and 26)	36,968	36,342	333,020
<b>Operating income</b>	<b>10,531</b>	<b>12,026</b>	<b>94,865</b>
Other income (expenses):			
Interest expense	(610)	(612)	(5,502)
Interest income	171	80	1,545
Dividend income	44	39	397
Subsidy income	139	207	1,253
Foreign exchange gains (losses)	(1,069)	719	(9,635)
Gain on sales of scraps	105	91	947
Reversal of product compensation costs	128	—	1,154
Product compensation costs	(69)	(102)	(623)
Gain on sales of fixed assets	258	—	2,324
Loss on sales of fixed assets	—	(0)	—
Loss on disposal of fixed assets (Note 15)	(457)	(97)	(4,125)
Gain on sales of investment securities	297	—	2,680
Gain on abolishment of retirement benefit plan	—	69	—
Compensation income	—	585	—
Impairment loss (Note 16)	(119)	—	(1,076)
Special retirement expenses	(122)	(190)	(1,104)
Loss on liquidation of subsidiaries	—	(364)	—
Restructuring cost (Note 17)	—	(18,315)	—
Other income	362	324	3,261
Other expenses	(558)	(967)	(5,032)
	(1,502)	(18,531)	(13,534)
<b>Profit (loss) before income taxes</b>	<b>9,028</b>	<b>(6,505)</b>	<b>81,331</b>
Income taxes (Note 21):			
Current	2,226	3,496	20,061
Deferred	89	470	805
<b>Profit (loss)</b>	<b>6,712</b>	<b>(10,472)</b>	<b>60,464</b>
Profit (loss) attributable to non-controlling interests	2,745	948	24,728
<b>Profit (loss) attributable to owners of parent</b> (Note 27)	<b>¥ 3,967</b>	<b>¥ (11,421)</b>	<b>\$ 35,736</b>

The accompanying notes are an integral part of the consolidated financial statements.

## Consolidated Statements of Comprehensive Income (Loss)

Sanken Electric Co., Ltd. and Consolidated Subsidiaries  
For the years ended March 31, 2019 and 2018

	Millions of yen		Thousands of U.S. dollars (Note 3)
	2019	2018	2019
<b>Profit (loss)</b>	<b>¥ 6,712</b>	<b>¥(10,472)</b>	<b>\$ 60,464</b>
<b>Other comprehensive income (loss):</b>			
Unrealized holding gain (loss) on securities	(344)	(35)	(3,103)
Translation adjustments	1,703	(2,557)	15,342
Retirement benefit liability adjustments	(1,288)	(870)	(11,608)
Total other comprehensive income (loss) (Note 18)	70	(3,463)	630
<b>Comprehensive income (loss)</b>	<b>¥ 6,782</b>	<b>¥(13,935)</b>	<b>\$ 61,094</b>
Breakdown:			
Comprehensive income (loss) attributable to:			
Owners of parent	¥ 3,465	¥(13,961)	\$ 31,215
Non-controlling interests	3,316	26	29,878

The accompanying notes are an integral part of the consolidated financial statements.



# Consolidated Statements of Changes in Net Assets

Sanken Electric Co., Ltd. and Consolidated Subsidiaries  
For the years ended March 31, 2019 and 2018

	Millions of yen				
	Shareholders' equity				
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity
<b>Balance at April 1, 2018</b>	<b>¥20,896</b>	<b>¥26,003</b>	<b>¥16,964</b>	<b>¥(4,017)</b>	<b>¥59,846</b>
Changes during the year:					
Cash dividends paid (other capital surplus)			(727)		(727)
Profit (loss) attributable to owners of parent			3,967		3,967
Acquisition of treasury stock				(6)	(6)
Disposal of treasury stock		(0)		0	0
Share based payments		211			211
Net changes in items other than shareholders' equity					—
<b>Total changes during the year</b>	<b>—</b>	<b>211</b>	<b>3,240</b>	<b>(5)</b>	<b>3,445</b>
<b>Balance at March 31, 2019</b>	<b>¥20,896</b>	<b>¥26,214</b>	<b>¥20,204</b>	<b>¥(4,023)</b>	<b>¥63,292</b>

	Millions of yen					
	Accumulated other comprehensive income					
	Unrealized holding gain (loss) on securities	Translation adjustments	Retirement benefit liability adjustments	Total accumulated other comprehensive income	Non-controlling interests in consolidated subsidiaries	Total net assets
<b>Balance at April 1, 2018</b>	<b>¥ 390</b>	<b>¥ (909)</b>	<b>¥(3,991)</b>	<b>¥(4,510)</b>	<b>¥16,947</b>	<b>¥72,283</b>
Changes during the year:						
Cash dividends paid (other capital surplus)					—	(727)
Profit (loss) attributable to owners of parent					—	3,967
Acquisition of treasury stock					—	(6)
Disposal of treasury stock					—	0
Share based payments					—	211
Net changes in items other than shareholders' equity	(344)	1,121	(1,279)	(501)	3,314	2,812
<b>Total changes during the year</b>	<b>(344)</b>	<b>1,121</b>	<b>(1,279)</b>	<b>(501)</b>	<b>3,314</b>	<b>6,258</b>
<b>Balance at March 31, 2019</b>	<b>¥ 45</b>	<b>¥ 212</b>	<b>¥(5,270)</b>	<b>¥(5,012)</b>	<b>¥20,261</b>	<b>¥78,541</b>

	Thousands of U.S. dollars (Note 3)				
	Shareholders' equity				
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity
<b>Balance at April 1, 2018</b>	<b>\$188,242</b>	<b>\$234,241</b>	<b>\$152,819</b>	<b>\$(36,191)</b>	<b>\$539,111</b>
Changes during the year:					
Cash dividends paid (other capital surplus)			(6,549)		(6,549)
Profit (loss) attributable to owners of parent			35,736		35,736
Acquisition of treasury stock				(55)	(55)
Disposal of treasury stock		(1)		2	1
Share based payments		1,907			1,907
Net changes in items other than shareholders' equity					—
<b>Total changes during the year</b>	<b>—</b>	<b>1,905</b>	<b>29,186</b>	<b>(53)</b>	<b>31,039</b>
<b>Balance at March 31, 2019</b>	<b>\$188,242</b>	<b>\$236,147</b>	<b>\$182,006</b>	<b>\$(36,244)</b>	<b>\$570,151</b>

	Thousands of U.S. dollars (Note 3)					
	Accumulated other comprehensive income					
	Unrealized holding gain (loss) on securities	Translation adjustments	Retirement benefit liability adjustments	Total accumulated other comprehensive income	Non-controlling interests in consolidated subsidiaries	Total net assets
<b>Balance at April 1, 2018</b>	<b>\$ 3,514</b>	<b>\$ (8,190)</b>	<b>\$(35,958)</b>	<b>\$(40,634)</b>	<b>\$152,663</b>	<b>\$651,141</b>
Changes during the year:						
Cash dividends paid (other capital surplus)					—	(6,549)
Profit (loss) attributable to owners of parent					—	35,736
Acquisition of treasury stock					—	(55)
Disposal of treasury stock					—	1
Share based payments					—	1,907
Net changes in items other than shareholders' equity	(3,103)	10,107	(11,523)	(4,520)	29,854	25,334
<b>Total changes during the year</b>	<b>(3,103)</b>	<b>10,107</b>	<b>(11,523)</b>	<b>(4,520)</b>	<b>29,854</b>	<b>56,373</b>
<b>Balance at March 31, 2019</b>	<b>\$ 410</b>	<b>\$ 1,916</b>	<b>\$(47,481)</b>	<b>\$(45,154)</b>	<b>\$182,518</b>	<b>\$707,514</b>



## Consolidated Statements of Cash Flows

Sanken Electric Co., Ltd. and Consolidated Subsidiaries  
For the years ended March 31, 2019 and 2018

	Millions of yen				
	Shareholders' equity				
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity
<b>Balance at April 1, 2017</b>	¥20,896	¥10,301	¥ 29,176	¥(4,003)	¥ 56,371
Changes during the year:					
Cash dividends paid (other capital surplus)			(790)		(790)
Profit (loss) attributable to owners of parent			(11,421)		(11,421)
Acquisition of treasury stock				(14)	(14)
Issue of share capital by the Company's consolidated subsidiaries		15,619			15,619
Share based payments		82			82
Net changes in items other than shareholders' equity					—
<b>Total changes during the year</b>	—	15,702	(12,212)	(14)	3,475
<b>Balance at March 31, 2018</b>	¥20,896	¥26,003	¥ 16,964	¥(4,017)	¥ 59,846

	Millions of yen					
	Accumulated other comprehensive income					
	Unrealized holding gain (loss) on securities	Translation adjustments	Retirement benefit liability adjustments	Total accumulated other comprehensive income	Non-controlling interests in consolidated subsidiaries	Total net assets
<b>Balance at April 1, 2017</b>	¥425	¥ 754	¥(3,150)	¥(1,970)	¥ 335	¥ 54,736
Changes during the year:						
Cash dividends paid (other capital surplus)						(790)
Profit (loss) attributable to owners of parent						(11,421)
Acquisition of treasury stock						(14)
Issue of share capital by the Company's consolidated subsidiaries					16,143	31,763
Share based payments						82
Net changes in items other than shareholders' equity	(35)	(1,663)	(841)	(2,540)	467	(2,072)
<b>Total changes during the year</b>	(35)	(1,663)	(841)	(2,540)	16,611	17,546
<b>Balance at March 31, 2018</b>	¥390	¥ (909)	¥(3,991)	¥(4,510)	¥16,947	¥ 72,283

The accompanying notes are an integral part of the consolidated financial statements.

	Millions of yen		Thousands of U.S. dollars (Note 3)
	2019	2018	2019
<b>Operating activities:</b>			
Profit (loss) before income taxes	¥ 9,028	¥ (6,505)	\$ 81,331
Depreciation and amortization	11,975	11,068	107,881
Impairment loss	119	—	1,076
Restructuring cost	—	18,315	—
Decrease (increase) in allowance for doubtful receivables	4	(238)	41
Decrease (increase) in assets for retirement benefits	(537)	(666)	(4,838)
Increase (decrease) in provision for retirement benefits for employees	(164)	(453)	(1,481)
Interest and dividend income	(215)	(120)	(1,943)
Interest expense	610	612	5,502
Loss (gain) on sales of property, plant and equipment	(258)	0	(2,324)
Loss (gain) on sales of investment securities	(297)	—	(2,680)
Decrease (increase) in notes and accounts receivable	1,567	(1,412)	14,116
Decrease (increase) in inventories	(3,873)	(3,552)	(34,891)
Increase (decrease) in notes and accounts payable	(2,886)	2,677	(26,006)
Other	2,820	808	25,411
Subtotal	17,894	20,534	161,195
Interest and dividends received	210	115	1,897
Interest paid	(616)	(603)	(5,552)
Payments for restructuring cost	—	(1,928)	—
Income taxes paid	(2,883)	(3,596)	(25,977)
<b>Net cash provided by operating activities</b>	<b>14,604</b>	<b>14,521</b>	<b>131,563</b>
<b>Investing activities:</b>			
Purchases of property, plant and equipment	(19,692)	(15,695)	(177,398)
Proceeds from sales of property, plant and equipment	210	128	1,891
Purchases of intangible assets	(1,194)	(1,142)	(10,761)
Purchases of investment securities	(333)	—	(3,007)
Proceeds from sales of investment securities	449	—	4,046
Proceeds from loans receivable	1	2	9
Other	(1,222)	63	(11,014)
<b>Net cash used in investing activities</b>	<b>(21,783)</b>	<b>(16,644)</b>	<b>(196,232)</b>
<b>Financing activities:</b>			
Increase (decrease) in short-term bank loans	(656)	(9,445)	(5,917)
Increase (decrease) in commercial paper	4,000	(8,000)	36,032
Proceeds from long-term loans payable	1,046	7,000	9,430
Repayment of long-term loans payable	(500)	(7,525)	(4,504)
Proceeds from issuance of corporate bonds	9,951	—	89,644
Redemption of corporate bonds	(15,000)	—	(135,122)
Repayment of finance lease obligations	(98)	(218)	(885)
Proceeds from share issuance to non-controlling shareholders	—	32,228	—
Proceeds from sales of treasury stock	0	—	1
Purchase of treasury stock	(6)	(14)	(55)
Cash dividends paid	(727)	(787)	(6,555)
Dividends paid to non-controlling interests	(0)	(4)	(0)
<b>Net cash provided by (used in) financing activities</b>	<b>(1,990)</b>	<b>13,233</b>	<b>(17,932)</b>
<b>Effect of exchange rate changes on cash and cash equivalents</b>	<b>(134)</b>	<b>(755)</b>	<b>(1,211)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(9,304)</b>	<b>10,355</b>	<b>(83,813)</b>
<b>Cash and cash equivalents at beginning of the year</b>	<b>32,593</b>	<b>22,237</b>	<b>293,604</b>
<b>Cash and cash equivalents at end of the year (Note 4)</b>	<b>¥ 23,288</b>	<b>¥ 32,593</b>	<b>\$ 209,790</b>

The accompanying notes are an integral part of the consolidated financial statements.



# Notes to Consolidated Financial Statements

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

## 01 Summary of Significant Accounting Policies

### (a) Basis of Presentation

The accompanying consolidated financial statements of Sanken Electric Co., Ltd. (the "Company") and consolidated subsidiaries (collectively, the "Group") have been prepared in accordance with accounting principles generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards, and are compiled from the consolidated financial statements prepared by the Company as required by the Financial Instruments and Exchange Law of Japan.

The accompanying consolidated financial statements for the year ended March 31, 2019 have been prepared by using the accounts of foreign consolidated subsidiaries prepared in accordance with either International Financial Reporting Standards (IFRS) or accounting principles generally accepted in the United States as adjusted for certain items including goodwill, actuarial differences and capitalized development costs.

As permitted by the Financial Instruments and Exchange Law, amounts of less than one million yen have been omitted. As a result, the totals shown in the accompanying consolidated financial statements (both in yen and in U.S. dollars) do not necessarily agree with the sums of the individual amounts.

### (b) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and all its subsidiaries. As of March 31, 2019, the number of consolidated subsidiaries was 36 (36 in 2018). Significant intercompany transactions and account balances have been eliminated in consolidation.

### (c) Securities

The accounting standard for financial instruments requires that securities be classified into three categories: trading, held-to-maturity or other securities. Trading securities are carried at fair value and held-to-maturity securities are carried at amortized cost. Marketable securities classified as other securities are carried at fair market value with any changes in unrealized gain or loss, net of the applicable income taxes, included directly in net assets. Non-marketable securities classified as other securities are carried at cost. The cost of securities sold is determined by the moving-average method.

### (d) Inventories

Inventories held for sale in the ordinary course of business are stated at cost using the moving-average method. The carrying amounts in the accompanying consolidated balance sheets are written down to reflect any decreased profitability.

### (e) Property, Plant and Equipment; Intangible Assets; Leased Assets; and Depreciation and Amortization

Property, plant and equipment are recorded at cost. Depreciation at the Company and its subsidiaries is computed principally by the straight-line method over the estimated useful lives of the respective assets. The estimated useful lives are as follows:

Buildings	8 – 60 years
Machinery and equipment	3 – 12 years

Intangible assets are amortized over a period of 5 or 10 years by the straight-line method.

Leased assets under finance lease transactions that stipulate the transfer of ownership of the leased assets to the lessee are depreciated principally over the estimated useful lives of similar-owned assets by the straight-line method.

Leased assets under finance lease transactions that do not stipulate the transfer of ownership of the leased assets to the lessee are depreciated over their lease periods by the straight-line method with a residual value of zero.

### (f) Allowance for Doubtful Receivables

Estimated uncollectible amounts are calculated using historical data for trade receivables and individually considering the probability of collection of doubtful receivables.

### (g) Bond Issuance Costs

Bond issuance costs are charged to income when incurred.

### (h) Employees' Retirement Benefits

The retirement benefit obligation for employees is attributed to each period by the benefit formula method.

Prior service cost is amortized from the year in which the gain or loss is recognized primarily by the declining-balance method over various periods (principally 10 through 20 years) which are shorter than the average remaining years of service of the employees.

Net unrecognized actuarial gain or loss is amortized from the year following the year in which the gain or loss is recognized primarily by the declining-balance method over various periods (principally 10 through 18 years) which are shorter than the average remaining years of service of the employees.

Certain consolidated subsidiaries use a simplified method for calculating retirement benefit expenses and liabilities based on the assumption that the benefits payable approximates the retirement benefit obligation at year-end.

### (i) Retirement Benefits for Directors

To prepare for the payment of retirement benefits to directors and corporate auditors, a reserve for retirement benefits has been provided at the estimated amounts required at the year-end based on the Company's internal rules.

### (j) Foreign Currency Translation

All monetary assets and liabilities of the Company denominated in foreign currencies are translated into yen at the exchange rates prevailing as of the fiscal year-end, and the resulting gain or loss is credited or charged to income.

Assets and liabilities of overseas consolidated subsidiaries are translated into yen at the fiscal year-end exchange rates. Income statements of overseas consolidated subsidiaries are translated into yen at average exchange rates. Differences arising from the translation are presented as translation adjustments and non-controlling interests as components of net assets in its consolidated financial statements.

### (k) Derivatives

The Company has entered into various derivative transactions in order to manage its risk exposure arising from adverse fluctuations in foreign currency exchange rates and interest rates. Derivative positions are carried at fair value with any changes in unrealized gain or loss charged or credited to income.

### (l) Cash Equivalents

All highly liquid investments, generally with a maturity of three months or less when purchased, which are readily convertible into known amounts of cash and are so near maturity that they represent only an insignificant risk of any change in value attributable to changes in interest rates, are considered cash equivalents.

### (m) Consumption Taxes

Transactions subject to consumption taxes are recorded at amounts exclusive of consumption taxes.

### (n) Consolidated Taxation System

The Company and its domestic consolidated subsidiaries have applied the consolidated taxation system.

### (o) Accounting Standards Issued But Not Yet Effective

#### Accounting Standard and Implementation Guidance on Revenue Recognition

On March 30, 2018, the ASBJ issued "Accounting Standard for Revenue Recognition" (ASBJ Statement No. 29) and "Implementation Guidance on Accounting Standard for Revenue Recognition" (ASBJ Guidance No. 30).

#### (1) Overview

In May 2014, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) issued "Revenue from Contracts with Customers," converged guidance on recognizing revenue in contracts with customers (IFRS 15, issued by the IASB, and Topic 606, issued by the FASB). IFRS 15 applies to annual reporting periods beginning on or after January 1, 2018, and Topic 606 applies to annual reporting periods beginning after December 15, 2017. Accordingly, the ASBJ developed a comprehensive accounting standard for revenue recognition and implementation guidance.

As a basic policy with regard to the ASBJ's development of "Accounting Standard for Revenue Recognition," from the viewpoint of comparability between financial statements, the ASBJ incorporated the basic principles of IFRS 15, and for any items to be considered from the perspective of historical accounting practices under Japanese GAAP, the ASBJ also included alternative accounting treatments which do not impair comparability with IFRS 15.

#### (2) Scheduled date of adoption

The Company expects to adopt the accounting standard and implementation guidance from the beginning of the fiscal year ending March 31, 2022.

#### (3) Impact of the adoption of accounting standard and implementation guidance

The Company is currently evaluating the effect of the adoption of this accounting standard and implementation guidance on its consolidated financial statements.

## 02 Accounting Changes

### (a) Change in Presentation

#### Partial Amendments to Accounting Standard for Tax Effect Accounting

The Company and its consolidated subsidiaries have adopted "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28, February 16, 2018) (hereinafter, the "Partial Amendments") from the beginning of the fiscal year ended March 31, 2019. As such, deferred tax assets and deferred tax liabilities are included within investments and long-term receivables and long-term liabilities, respectively, and related income tax disclosures have been expanded.

As a result, deferred tax assets in current assets decreased ¥1,207 million and deferred tax assets in investments and long-term receivables increased ¥891 million in the consolidated balance sheets as of March 31, 2018. Also, deferred tax liabilities in current liabilities decreased ¥294 million and deferred tax liabilities in long-term liabilities decreased ¥21 million as of March 31, 2018. Deferred tax assets and deferred tax liabilities of the same taxable entity are offset, which resulted in a ¥316 million decrease in total assets compared with the amount before the change.

Also, "Note 21. Income Taxes" in the notes to the consolidated financial statements has been expanded in accordance with Note 8 and Note 9 of Interpretive Notes to Accounting Standard for Tax Effect Accounting. However, comparative information for the year ended March 31, 2018 has not been disclosed in Note 21 in accordance with the transitional provisions set forth in Article 7 of the Partial Amendments.



### 03 U.S. Dollar Amounts

The translation of yen amounts into U.S. dollar amounts is included solely for convenience and has been made, as a matter of arithmetic computation only, at ¥111.01 = U.S.\$1.00, the approximate exchange rate prevailing on March 31, 2019. This translation should not be construed as a representation that yen have been, could have been, or could in the future be converted into U.S. dollars at that or any other rate.

### 04 Supplementary Cash Flow Information

The following table represents a reconciliation of cash and deposits with cash and cash equivalents as of March 31, 2019 and 2018:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
As of March 31			
Cash and deposits	¥23,564	¥32,752	\$212,273
Restricted cash	(275)	(159)	(2,482)
Cash and cash equivalents	¥23,288	¥32,593	\$209,790

The following table represents significant non-cash transactions as of March 31, 2019 and 2018:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
As of March 31			
Assets and obligations relating to finance lease transactions	¥6	¥290	\$58

### 05 Notes and Accounts Receivable

Notes and accounts receivable maturing at the end of the year are settled on the date of clearance.

Since March 31, 2019 and 2018 was a holiday for financial institutions, the following notes and accounts receivable maturing on that date are included in the corresponding balances at year-end.

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
As of March 31			
Notes receivable	¥107	¥116	\$968

### 06 Financial Instruments

#### a. Summary of financial instruments

##### (1) Policy for financial instruments

The Group raises funds necessary for capital investments, R&D, etc. by bond issuances and bank loans. It manages temporary surplus funds through highly secure financial instruments, and also raises short-term operating funds by issuing commercial paper and obtaining bank loans. The Group follows a policy of using derivatives to hedge foreign currency exchange fluctuation risks and avoids any speculative dealings.

##### (2) Financial instruments and their risks

Receivables resulting from the ordinary course of business, such as notes and accounts receivable – trade, are exposed to credit risk of customers. Receivables denominated in foreign currencies derived from global business operations are also exposed to foreign currency exchange fluctuation risks. The Group hedges these risks mainly through the use of forward exchange contracts against positions after netting payables denominated in the same foreign currencies, in principle. Investment securities are mainly composed of the shares of corporations with which the Group has business relationships and therefore are exposed to the risk of market price fluctuations.

Payables from the ordinary course of business such as notes and accounts payable – trade are mostly to be settled in one year. As some of them are denominated in foreign currencies due to importing materials and exposed to foreign currency exchange fluctuation risks, they are constantly maintained within the range of receivables in the same currencies. Short-term bank loans and commercial paper are used for financing mainly in relation to operating funds, while long-term bank loans and bonds are used for the purpose of financing capital investments. Some have floating interest rates and are therefore exposed to the risk of interest rate fluctuation.

Forward exchange contracts are derivative transactions that are entered into in order to hedge foreign currency exchange fluctuation risks associated with foreign currency denominated receivables and payables arising from the ordinary course of business.

##### (3) Risk management for financial instruments

###### <1> Management of credit risk (risk of customer default)

The sales division of the Group regularly monitors the financial position of main customers and manages due dates and outstanding balances due from each customer in accordance with provisions of credit management regulations to minimize the risk of defaults resulting from the deterioration of a customer's financial position.

###### <2> Management of market risk (foreign exchange risk, interest rate risk and others)

For receivables and payables denominated in foreign currencies, the Group identifies the foreign currency exchange fluctuation risks by currency each month and enters into forward exchange contracts to hedge such risk. Regarding the market price risk of investment securities, the Group regularly monitors the fair value of such securities as well as financial positions of the issuers. The Group also continuously reviews the status of possessing such securities taking into consideration business relationships with the issuers. When borrowing a bank loan with a floating interest rate, the Group reduces the risk by limiting the loan term to within three years in principle, monitoring the remaining term until the interest rate renewal date, monitoring the interest rate fluctuation trends, and responding in consideration of the balances between short-term loans and long-term loans or between fixed interest rates and floating interest rates.

In regard to derivative transactions, the finance division enters into contracts, confirms balances and keeps accounts based on the corporate policy. The status of derivative transactions is reported monthly at the management meeting.

###### <3> Management of liquidity risk (risk of failure to repay obligations)

The finance division manages liquidity risk in a timely manner by updating the cash flow budget based on reports from each business division.

##### (4) Supplemental explanation of the fair value of financial instruments

Fair values of financial instruments are measured based on the quoted market price, if available, or are reasonably estimated if a quoted market price is not available. The fair value of financial instruments for which a quoted market price is not available is calculated based on certain assumptions, and the fair value might differ if different assumptions are used.

In addition, the contract amounts of the derivative transactions described below in "b. Fair value of financial instruments" do not represent the market risk of the derivative transactions.

#### b. Fair value of financial instruments

The carrying amounts on the consolidated balance sheets, fair value, and difference as of March 31, 2019 and 2018 are as follows. Financial instruments, for which it is extremely difficult to measure the fair value, are not included. (Please see "Note 2: Financial instruments for which the fair value is extremely difficult to measure" below)

As of March 31, 2019	Millions of yen			Thousands of U.S. dollars		
	Carrying amount	Fair value	Difference	Carrying amount	Fair value	Difference
<b>Assets</b>						
(1) Cash and deposits	¥23,564	¥23,564	¥ —	\$212,273	\$212,273	\$ —
(2) Notes and accounts receivable – trade	33,586	33,586	—	302,552	302,552	—
(3) Investment securities: Other securities	688	688	—	6,202	6,202	—
<b>Total</b>	<b>¥57,839</b>	<b>¥57,839</b>	<b>¥ —</b>	<b>\$521,028</b>	<b>\$521,028</b>	<b>\$ —</b>
<b>Liabilities</b>						
(1) Notes and accounts payable – trade	¥18,075	¥18,075	¥ —	\$162,826	\$162,826	\$ —
(2) Short-term bank loans	12,991	12,991	—	117,031	117,031	—
(3) Commercial paper	11,000	11,000	—	99,090	99,090	—
(4) Bonds	35,000	35,188	188	315,286	316,984	1,698
(5) Long-term debt (except for bonds)	12,501	12,714	212	112,619	114,537	1,917
(6) Lease obligations	71	70	(1)	645	634	(11)
<b>Total</b>	<b>¥89,640</b>	<b>¥90,040</b>	<b>¥400</b>	<b>\$807,499</b>	<b>\$811,104</b>	<b>\$3,604</b>
Derivative transactions*	¥ (250)	¥ (250)	¥ —	\$ (2,260)	\$ (2,260)	\$ —

\* Derivative transactions are shown at the net value of the assets and liabilities arising from the transactions.



As of March 31, 2018	Millions of yen		
	Carrying amount	Fair value	Difference
<b>Assets</b>			
(1) Cash and deposits	¥32,752	¥32,752	¥ —
(2) Notes and accounts receivable – trade	34,656	34,656	—
(3) Investment securities: Other securities	1,323	1,323	—
<b>Total</b>	<b>¥68,732</b>	<b>¥68,732</b>	<b>¥ —</b>
<b>Liabilities</b>			
(1) Notes and accounts payable – trade	¥20,634	¥20,634	¥ —
(2) Short-term bank loans	13,339	13,339	—
(3) Commercial paper	7,000	7,000	—
(4) Bonds	40,000	40,124	124
(5) Long-term debt (except for bonds)	11,975	12,042	67
(6) Lease obligations	155	153	(2)
<b>Total</b>	<b>¥93,105</b>	<b>¥93,294</b>	<b>¥189</b>
Derivative transactions*	¥ 997	¥ 997	¥ —

\* Derivative transactions are shown at the net value of the assets and liabilities arising from the transactions.

Note 1: Methods to measure the fair value of financial instruments, investment securities, and derivative transactions

**Assets**

- (1) Cash and deposits and (2) Notes and accounts receivable – trade  
The carrying amount approximates fair value because of the short maturities of these instruments.
- (3) Investment securities  
The fair value of equity securities equals quoted market prices, if available. Information on investment securities classified by holding purpose is described in “Note 7. Securities.”

**Liabilities**

- (1) Notes and accounts payable – trade, (2) Short-term bank loans and current portion of long-term debt, and (3) Commercial paper  
The carrying amount approximates fair value because of the short maturities of these instruments.
- (4) Bonds  
The fair value equals quoted market prices.
- (5) Long-term debt (except for bonds)  
The fair value of long-term debt with floating interest rates is nearly equal to the carrying value as the market rate is reflected in a short period. The fair value of long-term debt with fixed interest rates is based on the present value of the total amount of principal and interest discounted by the interest rates that would presumably apply to similar debt.
- (6) Lease obligations  
The fair value of lease obligations is based on the present value of the total amount of payments discounted by the interest rates that would presumably apply to similar lease contracts.

**Derivative transactions**

Contract amounts and estimated fair value are described in “Note 8. Derivatives.”

Note 2: Financial instruments for which the fair value is extremely difficult to measure

As of March 31	Carrying amount		
	Millions of yen	2018	Thousands of U.S. dollars
	<b>2019</b>		<b>2019</b>
Unlisted equity securities and others	<b>¥404</b>	¥83	<b>\$3,645</b>

The above are not included in “Assets (3) Investment securities” because no quoted market price is available and it is extremely difficult to measure the fair value.

Note 3: The redemption schedule for receivables and investment securities with maturities subsequent to the consolidated closing date

As of March 31, 2019	Millions of yen			
	Within 1 year	Over 1 year within 5 years	Over 5 years within 10 years	Over 10 years
Cash and deposits	<b>¥23,564</b>	¥—	¥—	¥—
Notes and accounts receivable – trade	<b>33,586</b>	—	—	—
Investment securities: Other securities with maturities	—	—	—	—
<b>Total</b>	<b>¥57,150</b>	<b>¥—</b>	<b>¥—</b>	<b>¥—</b>

As of March 31, 2019	Thousands of U.S. dollars			
	Within 1 year	Over 1 year within 5 years	Over 5 years within 10 years	Over 10 years
Cash and deposits	<b>\$212,273</b>	\$—	\$—	\$—
Notes and accounts receivable – trade	<b>302,552</b>	—	—	—
Investment securities: Other securities with maturities	—	—	—	—
<b>Total</b>	<b>\$514,826</b>	<b>\$—</b>	<b>\$—</b>	<b>\$—</b>

As of March 31, 2018	Millions of yen			
	Within 1 year	Over 1 year within 5 years	Over 5 years within 10 years	Over 10 years
Cash and deposits	¥32,752	¥—	¥—	¥—
Notes and accounts receivable – trade	34,656	—	—	—
Investment securities: Other securities with maturities	—	—	—	—
<b>Total</b>	<b>¥67,408</b>	<b>¥—</b>	<b>¥—</b>	<b>¥—</b>

Note 4: The redemption schedule for bonds, long-term debt and lease obligations and other liabilities with maturities subsequent to the consolidated closing date

As of March 31, 2019	Millions of yen					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
Short-term bank loans	<b>¥12,991</b>	¥ —	¥ —	¥ —	¥—	¥ —
Commercial paper	<b>11,000</b>	—	—	—	—	—
Bonds	—	<b>15,000</b>	<b>15,000</b>	—	—	<b>5,000</b>
Long-term debt (except for bonds)	<b>646</b>	<b>9,500</b>	—	<b>1,475</b>	—	<b>880</b>
Lease obligations	<b>30</b>	<b>20</b>	<b>9</b>	<b>7</b>	<b>4</b>	—
<b>Total</b>	<b>¥24,668</b>	<b>¥24,520</b>	<b>¥15,009</b>	<b>¥1,482</b>	<b>¥ 4</b>	<b>¥5,880</b>



As of March 31, 2019	Thousands of U.S. dollars					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
Short-term bank loans	\$117,031	\$ —	\$ —	\$ —	\$ —	\$ —
Commercial paper	99,090	—	—	—	—	—
Bonds	—	135,122	135,122	—	—	45,040
Long-term debt (except for bonds)	5,825	85,577	—	13,287	—	7,929
Lease obligations	273	181	83	65	40	—
<b>Total</b>	<b>\$222,221</b>	<b>\$220,882</b>	<b>\$135,206</b>	<b>\$13,352</b>	<b>\$40</b>	<b>\$52,970</b>

As of March 31, 2018	Millions of yen					
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
Short-term bank loans	¥13,339	¥ —	¥ —	¥ —	¥ —	¥ —
Commercial paper	7,000	—	—	—	—	—
Bonds	15,000	—	15,000	10,000	—	—
Long-term debt (except for bonds)	500	—	9,500	—	1,975	—
Lease obligations	87	32	16	8	6	4
<b>Total</b>	<b>¥35,927</b>	<b>¥32</b>	<b>¥24,516</b>	<b>¥10,008</b>	<b>¥1,981</b>	<b>¥ 4</b>

## 07 Securities

### (1) Other securities

Marketable securities classified as other securities at March 31, 2019 and 2018 are summarized as follows:

As of March 31, 2019	Millions of yen			Thousands of U.S. dollars		
	Carrying amount	Acquisition cost	Net unrealized gain (loss)	Carrying amount	Acquisition cost	Net unrealized gain (loss)
Securities whose carrying amount exceeds their acquisition cost:						
Equity securities	¥478	¥360	¥118	\$4,309	\$3,243	\$1,065
Securities whose acquisition cost exceeds their carrying amount:						
Equity securities	210	250	(40)	1,892	2,253	(360)
<b>Total</b>	<b>¥688</b>	<b>¥610</b>	<b>¥ 78</b>	<b>\$6,202</b>	<b>\$5,497</b>	<b>\$ 705</b>

As of March 31, 2018	Millions of yen		
	Carrying amount	Acquisition cost	Net unrealized gain (loss)
Securities whose carrying amount exceeds their acquisition cost:			
Equity securities	¥1,159	¥592	¥566
Securities whose acquisition cost exceeds their carrying amount:			
Equity securities	164	169	(4)
<b>Total</b>	<b>¥1,323</b>	<b>¥761</b>	<b>¥562</b>

(2) Sales of securities classified as other securities and the aggregate gain and loss for the years ended March 31, 2019 and 2018 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Sales proceeds:	¥449	¥—	\$4,046
Stocks	449	—	4,046
Others	—	—	—
Aggregate gain:	297	—	2,680
Stocks	297	—	2,680
Others	—	—	—
Aggregate loss:	—	—	—
Stocks	—	—	—
Others	—	—	—

## 08 Derivatives

Summarized below are the contract amounts and estimated fair value of the Company's open derivative positions at March 31, 2019 and 2018, for which deferral hedge accounting has not been applied:

	Millions of yen		Thousands of U.S. dollars	
	2019	2018	2019	2018
	Contract amount	Estimated fair value	Contract amount	Estimated fair value
Forward foreign exchange contracts:				
Sell U.S. dollars	¥23,824	¥(250)	¥25,974	¥997
			\$214,618	\$(2,260)

## 09 Inventories

Inventories at March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Finished products	¥14,888	¥12,061	\$134,117
Work in process	19,633	20,600	176,861
Raw materials and supplies	7,539	4,969	67,919
<b>Total</b>	<b>¥42,061</b>	<b>¥37,631</b>	<b>\$378,897</b>

The book values of inventories were written down to reflect the decline in profitability by ¥545 million (\$4,914 thousand) and ¥550 million for the years ended March 31, 2019 and 2018, respectively. The inventory write-downs were included in "Cost of sales."

## 10 Property, Plant and Equipment

Accumulated depreciation of property, plant and equipment for the years ended March 31, 2019 and 2018 was as follows:

	Carrying amount	
	Millions of yen	Thousands of U.S. dollars
	2019	2018
Property, plant and equipment	¥156,580	¥150,928
	\$1,410,511	



## 11 Short-Term Borrowings and Long-Term Debt

Short-term bank loans generally represent notes and overdrafts. The related weighted-average interest rates at March 31, 2019 and 2018 were approximately 1.59% and 1.36%, respectively. The weighted-average interest rate applicable to the current portion of long-term debt (excluding lease obligations) was approximately 0.90% at March 31, 2019. The weighted-average interest rates applicable to commercial paper at March 31, 2019 and 2018 were approximately 0.15% and 0.16%, respectively. The weighted-average interest rates applicable to the current portion of lease obligations at March 31, 2019 and 2018 were approximately 1.78% and 1.96%, respectively.

Long-term debt at March 31, 2019 and 2018 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Loans payable in yen with a weighted-average interest rate of 0.64% at March 31, 2019 and 0.46% at March 31, 2018	¥12,501	¥ 11,975	\$112,619
0.80% bonds due 2020	15,000	15,000	135,122
0.59% bonds due 2019	—	15,000	—
0.67% bonds due 2021	10,000	10,000	90,081
0.40% bonds due 2021	5,000	—	45,040
0.81% bonds due 2025	5,000	—	45,040
Lease obligations with a weighted-average interest rate of 1.19% at March 31, 2019 and 1.68% at March 31, 2018	71	155	645
	47,573	52,130	428,552
Less current portion	(677)	(15,587)	(6,099)
	¥46,896	¥ 36,542	\$422,452

As is customary in Japan, both short-term and long-term bank loans are made under general agreements which provide that collateral and guarantees (or additional collateral or guarantees as appropriate) for present and future indebtedness be given at the request of the bank, and that the bank has the right, as the obligations become due or in the event of default thereon, to offset cash deposits against any such obligations due to the bank.

At March 31, 2019 and 2018, the assets pledged as collateral for short-term bank loans were as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Buildings	¥53	¥62	\$479
Other assets	7	8	70
	¥61	¥70	\$550

At March 31, 2019 and 2018, short-term bank loans secured by collateral were as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Short-term bank loans	¥49	¥50	\$445

## 12 Lines of Credit

The Company and certain overseas subsidiaries have committed line-of-credit agreements and have entered into overdraft agreements with certain financial institutions in order to raise operating funds efficiently. The balances of credit available at March 31, 2019 and 2018 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Total committed lines of credit and overdraft	¥42,334	¥42,046	\$381,354
Outstanding balance	8,031	9,019	72,353
	¥34,302	¥33,027	\$309,001

## 13 Selling, General and Administrative Expenses

The principal components of selling, general and administrative expenses for the years ended March 31, 2019 and 2018 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Salaries and bonuses	¥14,884	¥15,101	\$134,086
Packing and shipping expenses	1,573	1,679	14,178
Outside services	3,961	2,458	35,687
Provision for doubtful receivables	55	21	498
Provision for directors' retirement benefits	7	6	64
Retirement benefit expenses	85	(22)	774

## 14 Gain on Sales of Fixed Assets

The gain on sales of fixed assets for the years ended March 31, 2019 and 2018 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Machinery and equipment	¥258	¥—	\$2,324

## 15 Loss on Disposal of Fixed Assets

The loss on disposal of fixed assets for the years ended March 31, 2019 and 2018 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Buildings	¥ 5	¥40	\$ 51
Machinery and equipment	30	55	275
Tools, furniture and fixtures	3	0	30
Dismantling and removal costs	418	—	3,767
	¥457	¥97	\$4,125

## 16 Impairment Loss

Fixed assets are grouped by business segment with idle assets constituting a separate asset group.

Impairment loss was recognized on the following asset groups for the year ended March 31, 2019.

Use	Location	Asset categories
Idle assets	Commonwealth of Massachusetts, USA	Land and Buildings and structures, net

Impairment loss of ¥119 million (\$1,076 thousand) was recognized on idle assets such as manufacturing facilities for the Semiconductor Devices Business, which are no longer being utilized, by writing down the carrying amounts to the recoverable amounts, which are their net selling prices.

Impairment loss for the year ended March 31, 2019 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Land	¥ 43	¥—	\$ 388
Buildings and structures, net	76	—	688
	¥119	—	\$1,076



## 17 Restructuring Cost

The restructuring cost for the years ended March 31, 2019 and 2018 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Loss on disposal of inventories	¥—	¥16,572	\$—
Special retirement expenses	—	1,742	—
	¥—	¥18,315	\$—

## 18 Reclassification Adjustments and Tax Effect Relating to Other Comprehensive Income (Loss)

Reclassification adjustments and tax effect relating to other comprehensive income (loss) for the years ended March 31, 2019 and 2018 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Net unrealized gain (loss) on securities			
Change during the year	¥ (186)	¥ (49)	\$ (1,677)
Reclassification adjustments	(297)	—	(2,680)
Amount before tax effect	(483)	(49)	(4,358)
Tax effect	139	14	1,254
Net unrealized gain (loss) on securities	¥ (344)	¥ (35)	\$ (3,103)
Translation adjustments			
Change during the year	¥ 1,703	¥(3,163)	\$ 15,342
Reclassification adjustments	—	606	—
Translation adjustments	¥ 1,703	¥(2,557)	\$ 15,342
Retirement benefit liability adjustments			
Change during the year	¥(2,040)	¥(1,384)	\$ (18,385)
Reclassification adjustments	731	516	6,588
Amount before tax effect	(1,309)	(868)	(11,796)
Tax effect	20	(2)	188
Retirement benefit liability adjustments	¥(1,288)	¥ (870)	\$ (11,608)
Total other comprehensive gain (loss)	¥ 70	¥(3,463)	\$ 630

## 19 Retirement Benefit Plans

The Company and its domestic consolidated subsidiaries have defined benefit pension plans and lump-sum payment plans, covering substantially all employees who are entitled to lump-sum or annuity payments, the amounts of which are determined by reference to their basic rates of pay, length of service, and the conditions under which termination occurs. The Company and certain domestic subsidiaries have a defined contribution plan and an advance payment plan. The Company and certain domestic subsidiaries have adopted a cash balance plan.

The overseas consolidated subsidiaries principally have defined contribution pension plans.

Certain consolidated subsidiaries use a simplified method for calculating retirement benefit expenses and liabilities.

## Defined benefit plans

The changes in the retirement benefit obligation during the years ended March 31, 2019 and 2018 are as follows (excluding plans for which the simplified method is applied):

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Balance at the beginning of the year	¥28,797	¥30,018	\$259,415
Service cost	1,167	1,236	10,514
Interest cost	241	261	2,175
Actuarial (gain) loss	695	238	6,266
Retirement benefit paid	(1,704)	(2,836)	(15,357)
Prior service costs	133	41	1,202
Other	28	(162)	253
Balance at the end of the year	¥29,358	¥28,797	\$264,471

The changes in plan assets during the years ended March 31, 2019 and 2018 are as follows (excluding plans for which the simplified method is applied):

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Balance at the beginning of the year	¥26,681	¥27,507	\$240,350
Expected return on plan assets	1,492	1,913	13,441
Actuarial loss	(1,197)	(1,165)	(10,791)
Contributions by the Company	1,216	1,268	10,958
Retirement benefit paid	(1,522)	(2,775)	(13,712)
Other	7	(66)	68
Balance at the end of the year	¥26,677	¥26,681	\$240,314

The following table sets forth the funded and accrued status of the plans, and the amounts recognized in the accompanying consolidated balance sheets at March 31, 2019 and 2018 for the Company's and the consolidated subsidiaries' defined benefit plans:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Retirement benefit obligation	¥ 29,041	¥ 28,471	\$ 261,614
Plan assets at fair value	(26,677)	(26,681)	(240,314)
	2,364	1,790	21,300
Unfunded retirement benefit obligation	449	443	4,049
Net liability for retirement benefits in the consolidated balance sheets	¥ 2,814	¥ 2,233	\$ 25,349
Liabilities for retirement benefits	2,832	2,632	25,514
Assets for retirement benefits	(18)	(399)	(164)
Net liability for retirement benefits in the consolidated balance sheets	¥ 2,814	¥ 2,233	\$ 25,349

Note: Including a system that applies the simplified method.



The components of retirement benefit expenses for the years ended March 31, 2019 and 2018 are outlined as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Service cost	¥ 1,167	¥ 1,236	\$ 10,514
Interest cost	241	261	2,175
Expected return on plan assets	(1,492)	(1,913)	(13,441)
Amortization of actuarial loss	821	739	7,402
Amortization of prior service cost	(90)	(223)	(814)
Retirement benefit expenses calculated using simplified method	27	18	244
Retirement benefit expenses for defined benefit plans	¥ 675	¥ 119	\$ 6,082

Note: In addition to the above retirement benefit expenses, "special retirement benefits" in the amount of ¥122 million (\$1,104 thousand) are recorded as extraordinary losses for the year ended March 31, 2019, and "special retirement benefits" in the amount of ¥190 million and "restructuring cost" in the amount of ¥1,742 million are recorded as extraordinary losses for the year ended March 31, 2018.

The components of retirement benefit adjustments included in other comprehensive income (before tax effect) for the years ended March 31, 2019 and 2018 are outlined as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Prior service cost	¥ (239)	¥(266)	\$ (2,153)
Actuarial gain (loss)	(1,070)	(602)	(9,642)
Total	¥(1,309)	¥(868)	\$ (11,796)

The components of retirement benefit adjustments included in accumulated other comprehensive income (before tax effect) as of March 31, 2019 and 2018 are outlined as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Unrecognized prior service cost	¥(1,240)	¥(1,479)	\$ (11,173)
Unrecognized actuarial gain (loss)	6,682	5,612	60,201
Total	¥ 5,442	¥ 4,133	\$ 49,028

The fair values of plan assets, by major categories, as percentages of total plan assets as of March 31, 2019 and 2018 are as follows:

	2019	2018
Bonds	53%	49%
Stocks	22	24
Alternative investments	1	2
General accounts of life insurance companies	10	10
Other	14	15
Total	100%	100%

Note: Alternative investments are primarily investments in funds.

The expected return on plan assets has been estimated based on the anticipated allocation to each asset class and the expected long-term returns on assets held in each category.

The weighted-average actuarial assumptions used in accounting for the above plans were as follows:

	2019	2018
Discount rate	0.8%	0.8%
Expected rate of return on plan assets	5.5	6.9

#### Defined benefit plans accounted for using the simplified method

The changes in the retirement benefit obligation calculated by the simplified method during the years ended March 31, 2019 and 2018 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Balance at the beginning of the year	¥116	¥116	\$1,050
Retirement benefit expenses	27	18	244
Retirement benefit paid	(8)	(17)	(80)
Other	(2)	(0)	(21)
Balance at the end of the year	¥132	¥116	\$1,193

#### Defined contribution plans

For the years ended March 31, 2019 and 2018, contributions to the defined contribution pension plan and the advance payment plan, which are recognized as expenses, totaled ¥919 million (\$8,286 thousand) and ¥917 million, respectively.

## 20 Stock Options

Stock option expense included in "Costs of sales" and "Selling, general and administrative expenses" for the years ended March 31, 2019 and 2018 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Costs of sales	¥ 20	¥ 9	\$ 181
Selling, general and administrative expenses	139	72	1,260

Allegro MicroSystems, Inc., a consolidated subsidiary, has adopted a stock-based compensation plan. The purpose of the plan is to raise awareness of the need to contribute to the sustainable improvement of corporate performance and corporate value and to secure talented personnel. The plan is contingent upon service for a fixed period through the vesting date. That is to say, if a grantee loses their position or retires between the grant date and the vesting date, their stock-based remuneration will expire. As of March 31, 2018, 597,400 shares were outstanding and during the year ended March 31, 2019, 12,720 shares were granted and 2,500 shares were forfeited, thus resulting in 607,620 shares outstanding as of March 31, 2019.

Company name	Allegro MicroSystems, Inc.
Date of resolution	July 13, 2017
Category and number of grantees	Directors and employees of Allegro MicroSystems, Inc. and their subsidiaries (48 people)
Type and number of shares	Restricted voting stock 638,298 shares
Grant date	October 2, 2017
Vesting conditions	Continuous employment from the grant date (October 2, 2017) to the vesting date (October 1, 2021)
Service period	From October 2, 2017 to October 1, 2021

Share-based compensation of the consolidated subsidiary Allegro MicroSystems, Inc. is estimated based on intrinsic value as it is a privately held company. The method of estimating the intrinsic value of the shares is based on the discounted cash flow method.

As it is difficult to reasonably estimate the number of shares to be forfeited in the future, only the number of forfeited shares in the past is reflected.

## 21 Income Taxes

Income taxes applicable to the Company comprise corporation, enterprise and inhabitants' taxes, which, in the aggregate, resulted in an effective statutory tax rate of approximately 30.5% for the year ended March 31, 2019.

The reconciliation between the effective tax rates reflected in the consolidated statements of operations and effective statutory tax rates for the years ended March 31, 2019 and 2018 was as follows:

	2019	2018
Effective statutory tax rate	30.5 %	— %
Effect of:		
Non-deductible expenses for income tax purposes	3.1	—
Non-taxable dividend income	(2.4)	—
Tax deduction	(6.7)	—
Inhabitants' per capita taxes	0.3	—
Foreign tax rate difference	(9.3)	—
Changes in valuation allowance	(28.4)	—
Expiration of net operating loss carryforwards	39.9	—
Other, net	(1.3)	—
Effective tax rate	25.7 %	— %

The reconciliation for the year ended March 31, 2018 is not disclosed because the Company reported a loss before income taxes for the year.

The significant components of the Company's deferred tax assets and liabilities as of March 31, 2019 and 2018 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Deferred tax assets:			
Net operating loss carryforwards	¥ 15,548	¥ 18,690	\$ 140,067
Liabilities for retirement benefits	305	384	2,755
Inventories	151	243	1,361
Accrued bonuses	1,401	1,900	12,623
Net unrealized holding gain	353	318	3,188
Depreciation expenses	302	251	2,726
Impairment losses	191	287	1,724
Carryforward tax deduction	606	340	5,466
Other	1,312	266	11,823
Gross deferred tax assets:	20,174	22,683	181,738
Valuation allowance for net operating loss carryforwards (Note 2)	(15,480)	—	(139,448)
Valuation allowance for deductible temporary differences	(3,002)	—	(27,045)
Valuation allowance (Note 1)	(18,482)	(21,046)	(166,494)
Total deferred tax assets	1,692	1,636	15,243
Deferred tax liabilities:			
Fixed assets	(1,358)	(1,187)	(12,234)
Other	(621)	(943)	(5,600)
Total deferred tax liabilities	(1,979)	(2,130)	(17,834)
Net deferred tax assets (liabilities)	¥ (287)	¥ (493)	\$ (2,591)

Notes:

1. The valuation allowance decreased ¥2,564 million. This decrease was mainly attributable to a decrease of ¥3,613 million in valuation allowance due to expired tax loss carryforwards of the Company and its domestic consolidated subsidiaries offset by an additional ¥618 million in tax loss carryforwards recognized by the Company and its domestic consolidated subsidiaries.

2. A breakdown of net operating loss carryforwards and valuation allowance by expiry date as of March 31, 2019 is as follows:

	Millions of yen						
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years	Total
Net operating loss carryforwards*	¥ 2,405	¥ 2,209	¥ 289	¥ 1,747	¥ 338	¥ 8,558	¥ 15,548
Valuation allowance	(2,405)	(2,209)	(275)	(1,727)	(314)	(8,546)	(15,480)
Deferred tax assets	¥ —	¥ —	¥ 13	¥ 19	¥ 24	¥ 11	¥ 68

	Thousands of U.S. dollars						
	Due in 1 year or less	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years	Total
Net operating loss carryforwards*	\$ 21,670	\$ 19,904	\$ 2,605	\$ 15,738	\$ 3,053	\$ 77,094	\$ 140,067
Valuation allowance	(21,670)	(19,904)	(2,484)	(15,563)	(2,832)	(76,992)	(139,448)
Deferred tax assets	\$ —	\$ —	\$ 121	\$ 174	\$ 220	\$ 101	\$ 618

\* The amount is determined by multiplying the corresponding net operating loss carryforwards by the effective statutory tax rate.

## 22 Business Combinations

On March 11, 2019, an investment of monetary claims in kind in exchange for a subscription for preferred shares was made in the Company's wholly owned subsidiary, PT. Sanken Indonesia.

### (a) Summary of transactions

- (1) Combined entity's name and business description
  - ① Name of companies involved in the business combination:  
SANKEN ELECTRIC CO., LTD. and PT. SANKEN INDONESIA
  - ② Business description of PT. Sanken Indonesia:  
Manufacturing and sales of power system products
- (2) Date of business combination  
March 11, 2019
- (3) Legal form of business combination  
Acquisition of shares through contribution of loans in kind (debt-equity swaps)
- (4) Name following business combination  
The name is unchanged
- (5) Outline and purpose of the transaction  
The Company underwrote a capital increase of PT. Sanken Indonesia through a debt-equity swap with the aim of improving the financial position of PT. Sanken Indonesia. PT. Sanken Indonesia has been a wholly owned consolidated subsidiary of the Company for some time, and there was no change in the percentage of the Company's overall ownership interest due to this investment.

### (b) Accounting treatment

This transaction was accounted for in accordance with "Accounting Standard for Business Combinations" (ASBJ Statement No. 21 issued on September 13, 2013) and "Guidance on Accounting Standard for Business Combinations and Accounting Standard for Business Divestitures" (ASBJ Guidance No. 10 issued on September 13, 2013), as a transaction under common control.

### (c) Additional acquisition of subsidiary's shares

Acquisition cost and breakdown are summarized as follows:

	Millions of yen	Thousands of U.S. dollars	
Consideration for acquisition	(Total face value of claims subject to contribution in kind)	¥8,322	\$74,966
	(Allowance for doubtful accounts for claims subject to contribution in kind)	7,438	67,009
Acquisition cost	¥ 883	\$ 7,957	



## 23 Shareholders' Equity

The Japanese Corporate Law ("the Law") became effective on May 1, 2006, replacing the Japanese Commercial Code. The Law is generally applicable to events and transactions occurring after April 30, 2006 and for fiscal years ending after that date.

Under Japanese laws and regulations, the entire amount paid for new shares is required to be designated as common stock. However, a company may, by a resolution of the Board of Directors, designate an amount not exceeding one-half of the prices of the new shares as additional paid-in capital, which is included in capital surplus.

Under the Law, in cases where a dividend distribution of surplus is made, the smaller of an amount equal to 10% of the dividend and the excess, if any, of 25% of common stock over the total of additional paid-in capital and the legal earnings reserve must be set aside as additional paid-in capital or a legal earnings reserve. The legal earnings reserve is included in retained earnings in the accompanying consolidated balance sheets.

Under the Law, companies are required to set aside an amount equal to at least 10% of the aggregate amount of cash dividends and other cash appropriations as a legal earnings reserve until the total of the legal earnings reserve and additional paid-in capital equaled 25% of common stock.

Under the Law, the legal earnings reserve and additional paid-in capital could be used to eliminate or reduce a deficit by a resolution of the shareholders' meeting or could be capitalized by a resolution of the Board of Directors. Under the Law, both of these appropriations generally require a resolution of the shareholders' meeting.

Additional paid-in capital and the legal earnings reserve may not be distributed as dividends. Under the Law, however, on the condition that the total amount of the legal earnings reserve and additional paid-in capital remained equal to or exceeded 25% of common stock, they were available for distribution by resolution of the shareholders' meeting.

Under the Law, all additional paid-in capital and all legal earnings reserves may be transferred to other capital surplus and retained earnings, respectively, which are potentially available for dividends.

The maximum amount that the Company can distribute as dividends is calculated based on the non-consolidated financial statements of the Company in accordance with the Law.

### (1) Dividends paid:

For the year ended March 31, 2019

	Type of shares	Total dividends (Millions of yen)	Dividends per share (Yen)	Total dividends (Thousands of U.S. dollars)	Dividends per share (U.S. dollars)	Cut-off date	Effective date
Annual General Meeting of the Shareholders on June 22, 2018	Common stock	¥363	¥3.00	\$3,274	\$0.027	March 31, 2018	June 25, 2018
Meeting of the Board of Directors on November 5, 2018	Common stock	¥363	¥3.00	\$3,274	\$0.027	September 30, 2018	December 5, 2018

For the year ended March 31, 2018

	Type of shares	Total dividends (Millions of yen)	Dividends per share (Yen)	Cut-off date	Effective date
Annual General Meeting of the Shareholders on June 23, 2017	Common stock	¥424	¥3.50	March 31, 2017	June 26, 2017
Meeting of the Board of Directors on November 6, 2017	Common stock	¥363	¥3.00	September 30, 2017	December 5, 2017

### (2) Dividends with the cut-off date in the year ended March 31, 2019 and the effective date in the year ending March 31, 2020

	Type of shares	Source of dividends	Total dividends (Millions of yen)	Dividends per share (Yen)	Total dividends (Thousands of U.S. dollars)	Dividends per share (U.S. dollars)	Cut-off date	Effective date
Annual General Meeting of the Shareholders on June 21, 2019	Common stock	Retained earnings	¥363	¥15.00	\$3,274	\$0.135	March 31, 2019	June 24, 2019

### Dividends with the cut-off date in the year ended March 31, 2018 and the effective date in the year ended March 31, 2019

	Type of shares	Source of dividends	Total dividends (Millions of yen)	Dividends per share (Yen)	Cut-off date	Effective date
Annual General Meeting of the Shareholders on June 22, 2018	Common stock	Retained earnings	¥363	¥3.00	March 31, 2018	June 25, 2018

## 24 Research and Development Expenses

Research and development expenses for the years ended March 31, 2019 and 2018 were ¥18,097 million (\$163,026 thousand) and ¥17,563 million, respectively.

## 25 Leases

Future minimum lease payments subsequent to March 31, 2019 and 2018 for non-cancellable operating leases are as follows:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Due in 1 year or less	¥ 431	¥ 635	\$ 3,888
Due after 1 year	1,601	2,123	14,428
	¥2,033	¥2,758	\$18,316

**26 Segment Information**

**a. Outline of reportable segments**

The reportable segments of the Company are the business units for which the Company is able to obtain respective financial information separately in order for the Board of Directors to conduct periodic analysis to determine the distribution of management resources and evaluate their business results.

The Company classifies its business units based on their products. Each business unit plans its own comprehensive domestic and overseas strategies for its products, and conducts its business activities. Therefore, the Company consists of its business units, identified by principal products, which are the following two reportable segments: "Semiconductor Devices Business" and "Power System Business."

The Semiconductor Devices Business mainly manufactures and sells power module, power ICs, control ICs, Hall effect ICs, bipolar transistors, MOSFETs, IGBTs, thyristors, rectifier diodes and light emitting diodes (LEDs). The Power System Business mainly manufactures and sells uninterruptible power supplies (UPSs), inverters, DC power supplies, airway beacon systems, switching mode power supply units and transformers.

**b. Calculation methods for reportable segment sales, income (loss), assets, and other items**

The accounting methods applied for reportable segments are the same as the basis of preparation for the consolidated financial statements. Intersegment sales and transfers are based on the prices in arm's-length transactions.

**c. Information about sales and segment income (loss) by reportable segments**

As of and for the year ended March 31, 2019					
Millions of yen					
	Reportable segments				
	Semiconductor Devices Business	Power System Business	Total	Adjustments	Consolidated
<b>Sales:</b>					
(1) Sales to external customers	¥147,211	¥26,438	¥173,650	¥ —	¥173,650
(2) Intersegment sales and transfers	602	197	799	(799)	—
Total sales	147,813	26,636	174,450	(799)	173,650
Segment income (loss)	13,025	549	13,575	(3,044)	10,531
Segment assets	155,224	15,169	170,393	17,798	188,192
<b>Others:</b>					
Depreciation and amortization	11,122	210	11,333	642	11,975
Impairment losses	119	—	119	—	119
Increase in property, plant, equipment and intangible assets	20,121	404	20,526	375	20,901

As of and for the year ended March 31, 2019					
Thousands of U.S. dollars					
	Reportable segments				
	Semiconductor Devices Business	Power System Business	Total	Adjustments	Consolidated
<b>Sales:</b>					
(1) Sales to external customers	\$1,326,108	\$238,167	\$1,564,275	\$ —	\$1,564,275
(2) Intersegment sales and transfers	5,427	1,779	7,206	(7,206)	—
Total sales	1,331,535	239,946	1,571,481	(7,206)	1,564,275
Segment income (loss)	117,340	4,946	122,287	(27,421)	94,865
Segment assets	1,398,290	136,647	1,534,938	160,336	1,695,274
<b>Others:</b>					
Depreciation and amortization	100,197	1,898	102,095	5,786	107,881
Impairment losses	1,076	—	1,076	—	1,076
Increase in property, plant, equipment and intangible assets	181,260	3,643	184,903	3,380	188,283

**Notes:**

- Adjustments for segment income (loss) of ¥(3,044) million (\$27,421 thousand) include corporate expenses. They are mainly general and administrative expenses, which are not allocable to the reportable segments.
- Adjustments for segment assets of ¥17,798 million (\$160,336 thousand) include corporate assets, which are not allocable to the reportable segments. The corporate assets are mainly surplus operating capital (cash and deposits), long-term investments (investment securities) and assets related to administrative departments of the Company.
- Adjustments for depreciation and amortization of ¥642 million (\$5,786 thousand) are mainly administrative expenses.
- Adjustments for increase in property, plant, equipment and intangible assets of ¥375 million (\$3,380 thousand) are assets related to administrative departments of the Company.
- Segment income is measured according to operating income.

As of and for the year ended March 31, 2018					
Millions of yen					
	Reportable segments				
	Semiconductor Devices Business	Power System Business	Total	Adjustments	Consolidated
<b>Sales:</b>					
(1) Sales to external customers	¥143,836	¥31,373	¥175,209	¥ —	¥175,209
(2) Intersegment sales and transfers	805	58	864	(864)	—
Total sales	144,642	31,431	176,074	(864)	175,209
Segment income (loss)	14,236	474	14,710	(2,684)	12,026
Segment assets	139,643	17,815	157,458	28,216	185,675
<b>Others:</b>					
Depreciation and amortization	10,193	199	10,393	675	11,068
Impairment losses	—	50	50	—	50
Increase in property, plant, equipment and intangible assets	16,583	231	16,815	482	17,297

**Notes:**

- Adjustments for segment income (loss) of ¥(2,684) million include corporate expenses. They are mainly general and administrative expenses, which are not allocable to the reportable segments.
- Adjustments for segment assets of ¥28,216 million include corporate assets, which are not allocable to the reportable segments. The corporate assets are mainly surplus operating capital (cash and deposits), long-term investments (investment securities) and assets related to administrative departments of the Company.
- Adjustments for depreciation and amortization of ¥675 million are mainly administrative expenses.
- Adjustments for increase in property, plant, equipment and intangible assets of ¥482 million are assets related to administrative departments of the Company.
- Segment income is measured according to operating income.



d. Related information

Information by geographical area

As of and for the year ended March 31, 2019

(1) Sales

Millions of yen							
Japan	Asia			America	Europe	Others	Total
	China	Korea					
¥65,118	¥74,235	¥39,021	¥18,843	¥19,721	¥14,484	¥90	¥173,650

Thousands of U.S. dollars							
Japan	Asia			America	Europe	Others	Total
	China	Korea					
\$586,599	\$668,729	\$351,515	\$169,743	\$177,655	\$130,479	\$811	\$1,564,275

Note: Sales are classified in countries or regions based on location of customers.

(2) Property, plant and equipment

Millions of yen					
Japan	North America	Asia		Others	Total
		Thailand			
¥30,880	¥25,657	¥15,597	¥8,052	¥468	¥72,604

Thousands of U.S. dollars					
Japan	North America	Asia		Others	Total
		Thailand			
\$278,180	\$231,127	\$140,503	\$72,542	\$4,220	\$654,031

As of and for the year ended March 31, 2018

(1) Sales

Millions of yen							
Japan	Asia			America	Europe	Others	Total
	China	Korea					
¥63,787	¥77,836	¥39,079	¥19,003	¥17,597	¥15,839	¥149	¥175,209

Note: Sales are classified in countries or regions based on location of customers.

(2) Property, plant and equipment

Millions of yen					
Japan	North America	Asia		Others	Total
		Thailand			
¥27,373	¥22,261	¥13,849	¥8,029	¥483	¥63,968

27 Amounts per Share

Amounts per share as of and for the years ended March 31, 2019 and 2018 were as follows:

	Yen		U.S. dollars
	2019	2018	2019
Net assets	¥2,405.01	¥2,283.31	\$21.66
Profit attributable to owners of parent:			
– basic	163.70	(471.22)	1.47
– diluted	157.45	—	1.41

On October 1, 2018, the effective date, a share consolidation was conducted at ratio of five (5) shares to one (1) share of the Company's common stock. Profit (loss) per share for the years ended March 31, 2019 and 2018 and diluted profit per share for the year ended March 31, 2019 were calculated assuming that the share consolidation was carried out at the beginning of the year ended March 31, 2018.

Diluted profit attributable to owners of parent per share was not disclosed because of net loss per share for the year ended March 31, 2018.

Profit attributable to owners of parent per share was calculated on the following basis:

	Millions of yen, except number of shares		Thousands of U.S. dollars, except number of shares
	2019	2018	2019
Profit (loss) attributable to owners of parent	¥3,967	¥(11,421)	\$35,736
Amounts not available to shareholders of common stock	—	—	—
Profit (loss) attributable to owners of common stock of parent	3,967	(11,421)	35,736
Average number of shares outstanding during the year (Thousands of shares)	24,233	24,237	—

Diluted profit per share was calculated on the following basis:

	Millions of yen		Thousands of U.S. dollars
	2019	2018	2019
Adjustments to net profit (loss) attributable to owners of parent	¥(151)	¥—	\$(1,363)
Adjustment for dilutive shares issued by subsidiaries	(151)	—	(1,363)

Net assets per share were calculated on the following basis:

	Millions of yen, except number of shares		Thousands of U.S. dollars, except number of shares
	2019	2018	2019
Net assets	¥ 78,541	¥ 72,283	\$ 707,514
Amounts deducted from net assets:			
– Non-controlling interests	(20,261)	(16,947)	(182,518)
Net assets attributable to shareholders	58,279	55,335	524,996
Number of shares outstanding at the end of the year (Thousands of shares)	24,232	24,234	—



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## Independent Auditor's Report

The Board of Directors  
Sanken Electric Co., Ltd.

We have audited the accompanying consolidated financial statements of Sanken Electric Co., Ltd. and its consolidated subsidiaries, which comprise the consolidated balance sheet as at March 31, 2019, and the consolidated statements of operations, comprehensive income (loss), changes in net assets, and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information, all expressed in Japanese yen.

### Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in Japan, and for designing and operating such internal control as management determines is necessary to enable the preparation and fair presentation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. The purpose of an audit of the consolidated financial statements is not to express an opinion on the effectiveness of the entity's internal control, but in making these risk assessments the auditor considers internal controls relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Sanken Electric Co., Ltd. and its consolidated subsidiaries as at March 31, 2019, and their consolidated financial performance and cash flows for the year then ended in conformity with accounting principles generally accepted in Japan.

### Convenience Translation

We have reviewed the translation of these consolidated financial statements into U.S. dollars, presented for the convenience of readers, and, in our opinion, the accompanying consolidated financial statements have been properly translated on the basis described in Note 3.

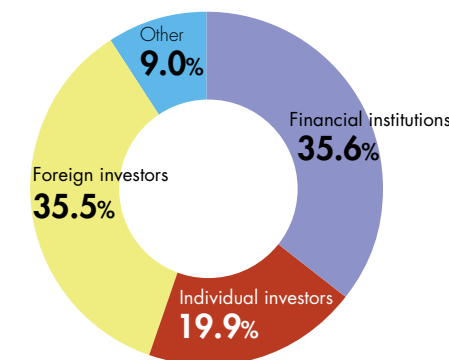
*Ernst & Young ShinNihon LLC*

June 21, 2019  
Tokyo, Japan

## Share Information

Shares	(As of March 31, 2019)
Total number of issuable shares	51,400,000 shares
Number of shares outstanding	25,098,060 shares
Number of shareholders	10,055

### Distribution of Shareholders by Category



(As of March 31, 2019)

### Principal Shareholders

Shareholder name	Number of shares owned (thousands)	Ownership ratio
Japan Trustee Services Bank, Ltd. (Trust Account)	2,104	8.68%
The Master Trust Bank of Japan, Ltd. (Trust Account)	1,794	7.40%
Saitama Resona Bank, Limited	1,202	4.96%
BNY GCM Client Account JPRD ACISG (FE-AC)	1,050	4.33%
State Street Bank and Trust Company 505253	724	2.98%
Credit Suisse AG, Dublin Branch Prime Client Asset Equity Account	667	2.75%
NORTHERN TRUST CO. (AVFC) RE IEDU UCITS CLIENTS NON-LENDING 15 PCT TREATY ACCOUNT	553	2.28%
Japan Trustee Services Bank, Ltd. (Trust Account 5)	457	1.88%
BBH for Fidelity Select Portfolios: Electronics Portfolio INTL EQ SUB	448	1.85%
MLI for Client General Omni Non-Collateral Non-Treaty PB	383	1.58%


Notes: 1. The Company holds 865 thousand shares of treasury stock (3.44%), but is excluded from the principal shareholders listed above.

2. Ownership ratio is calculated by subtracting treasury stock from the total number of shares outstanding.



## Corporate Information

### Company Overview

Name	Sanken Electric Co., Ltd.
Trademark	
Head office	3-6-3 Kitano, Niiza-shi, Saitama-ken 352-8666, Japan
Paid-in capital	¥20,896,789,680
Number of shares outstanding	25,098,060
Date of establishment	September 5, 1946
Business purpose	<ol style="list-style-type: none"> <li>1. Manufacture, sale and purchase of electric equipment and apparatus</li> <li>2. Electrical construction, telecommunications construction and any other works related to the preceding item</li> <li>3. All matters related to the conduct of the business stated in the preceding items</li> </ol>

### Business Settlement Information

Business year	From April 1 to March 31
Ordinary General Meeting of Shareholders	June of each year
Record date with respect to above meeting	March 31 of each year
Record date for dividends	Year-end dividends: March 31 of each year Interim dividends: September 30 of each year
Listed stock exchange	First Section, Tokyo Stock Exchange

### Bonds

Bond name	Date of issue	Balance of bonds (Billions of yen)
9th unsecured bonds	June 17, 2015	¥15.0
11th unsecured bonds	September 27, 2016	¥10.0
12th unsecured bonds	September 20, 2018	¥ 5.0
13th unsecured bonds	September 20, 2018	¥ 5.0