YOKOGAWA

Co-innovating tomorrow™

2022 Yokogawa Report

For the year ended March 31, 2022

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Period covered by the Report:
Fiscal year 2021, the period from April 1, 2021 to March 31, 2022 (includes some information on fiscal year 2022)
Scope of the Report:
Yokogawa Electric Corporation and its subsidiaries and affiliates

Cautionary statement regarding forward-looking statements
Statements made in this report regarding Yokogawa's plans, estimates, strategies, and beliefs are forward-looking statements about the future performance of Yokogawa. These statements are based on management' s assumptions and beliefs in the light of currently available information. Yokogawa cautions that a number of important factors, such as general economic conditions and exchange rates, could cause actual results to differ materially from those discussed in the forward-looking statements.
* Co-innovating tomorrow, CENTUM, ProSafe-RS, IA2IA, CSU, CSU-W1, DTSX, ScopeCorder, S-CNF, and amnimo are registered trademarks or trademarks of Yokogawa Electric Corporation and its subsidiaries and affiliates.

Editorial Policy

This report is designed to provide shareholders, institutional investors, and other stakeholders with an integrated understanding of Yokogawa Group's efforts to realize a sustainable society and increase corporate value over the mid- to long-term in the context of its value creation story.

In our editorial work, we draw on the International Integrated Reporting Framework advocated by the International Integrated Reporting Council (now the Value Reporting Foundation*) and, since 2019, the Guidance for Collaborative Value Creation (Comprehensive Disclosure and Dialogue Guidance for Collaborative Value Creation) advocated by the Ministry of Economy, Trade and Industry. This report is made in collaboration with multiple organizations. We are also working to improve and expand our disclosure by incorporating comments received from external evaluation organizations and other sources, as well as feedback received through dialogue with shareholders and institutional investors.

To clearly organize and express our initiatives, including our long-term business framework, mid-term business plan Accelerate Growth 2023, sustainability, digital transformation (DX), management capital, and governance, 2022 Yokogawa Report was structured with an emphasis on storytelling. In addition, we have expanded original content on topics ranging from business to governance, including our climate change initiatives, the renewable energy business, future co-creation initiatives, SDGs and space in Yokogawa, and a roundtable discussion with outside directors on the theme of "effectiveness and transparency of the Board of Directors." Furthermore, by describing our business activities centering on three subsegments of the main control business and showing our efforts to solve environmental and social issues together with our customers, we are seeking to gain a deeper understanding and empathy from our stakeholders and institutional investors throughout the report.

We hope that this report will be a useful and valuable tool that helps readers understand the Yokogawa Group's contributions to the realization of a sustainable society and the enhancement of corporate value.

* The Value Reporting Foundation (VRF) was established in June 2021 through the merger of the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB).

Positioning of this report

Company Overview

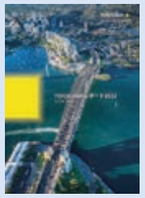
Further information is available on our website:

- **Website of Yokogawa Electric Corporation:** https://www.yokogawa.com/
- **Investor Relations website:** https://www.yokogawa.com/about/ir/
- **Sustainability website:** https://www.yokogawa.com/about/sustainability/
- **Corporate Governance website:** https://www.yokogawa.com/about/ir/governance/
- **Yokogawa Report website:** https://www.yokogawa.com/about/ir/reports/annual/

Cover Concept

The cover expresses that Yokogawa is a company that :

- is directly linked to the SDGs and contributes to solving social issues, and
- fulfils a role to "connect" customers and society as a whole.



Report Configuration

With an emphasis on storytelling, 2022 Yokogawa Report is designed to provide readers, including shareholders, investors and all other stakeholders, with an understanding of Yokogawa (our group)'s value creation process.

We also reflected the feedback we received through dialogue in this report in an effort to gain deeper understanding and empathy.

1 Perspective of a Sustainable Growth Story — Top Message

As the company connects society as a whole with businesses that are directly linked to the SDGs, and leads the world in integration, autonomy, and digitalization, the president & CEO himself expresses his view as the top management on Yokogawa's value, the current situation and recognition of issues, and our direction.

2 Unraveling the Mechanism of Value Creation — Value Creation Process

Yokogawa's value creation process, which aims to sustainably improve corporate value by leading to a world in which society as a whole becomes a system of systems and contributing to the realization of a sustainable society, is organized.

3 Strategies for Mid- to Long-Term Growth and Their Results

We review the basic strategy of our mid-term business plan, AG2023, sustainability strategy, and DX strategy, and introduce special features and case studies of results.

Management Strategy

4 Sources of Growth, Human, Intellectual and Financial Capital

We arranged the six capitals, focusing on the three capitals that are of particular importance in our dialogue with you, and developed them with strategies and case studies.

Management Capital

5 Earn in Three Subsegments of The Control Business

The focus industries and key measures, business developments, and industry splits are introduced along with a review in fiscal year 2021 and future growth strategies to reveal the true state of the business.

Business Strategy

6 7 Important Foundations That Support Sound Corporate Management and Activities

In addition to an overview of the structure of corporate governance, it focuses on activities that enhance objectivity and effectiveness, including a roundtable discussion with outside directors, messages from the chairpersons of the Nomination Advisory Committee and the compensation Advisory Committee, and details of the skills matrix.

The risk management chapter clarifies the main items that can be considered as risks, the risks that are currently realized, risk management structure, etc., and also provides an overview of the internal control that are two sides of the same coin. It also includes information on the status of various related management activities.

Corporate Governance　Risk Management / Internal Control

Responding to Major Comments from Shareholders and Investors in this Report

1. The president and CEO's own words about his recognition of the current situation and issues P. 3-11
2. The reorganization of business segments P. 17, 26
3. The content and progress of the AG2023 mid-term business plan P. 18, 26-29
4. The key performance indicators of AG2023 and their progress P. 18, 30-33
5. Earnings forecast including operating profit analysis (step chart) P. 30-31
6. The risks that are currently realized, including how to deal with them P. 31, 36-37, 84
7. The progress of capital policy and financial strategy, basis for M&A, business withdrawals, the cost of shareholders equity, and the dividend payout ratio P. 57-58
8. Creating opportunities in the energy transition P. 40-42, 59-67
9. Materiality and its analysis process P. 22-23
10. The link between contribution to sustainability and business and its progress P. 34-35
11. The strategy of human resources, innovation and intellectual property based on AG2023 P. 46-56
12. Actual state of the activities of the Board of Directors P. 24-25, 70-75, 80
13. The activities of the Nomination Advisory Committee and the Compensation Advisory Committee P. 76-79
14. Skills Matrix and its thought P. 76-77

Chapter 1

Message from the President and CEO

In an increasingly uncertain and rapidly changing business environment, we will forge connections across society through businesses that link directly to the SDGs, and lead the world in integration, autonomy, and digitalization.

Yokogawa's Value

- Yokogawa's Identity: Finding the Right Balance Between Permanence and Change
- The Embodiment of Yokogawa's Purpose and Creation of Value Through Our Business
- - Continuing to Provide Value 10 Years from Now, as a Leading Integrator for a World In Which Entire Societies Function as an SoS -

Current Situation and Recognition of Issues

- Promoting Global Organizational Reforms to Support Sustainable Corporate Growth
- A Change in Mindset to Support Our New Industry Segments and Create Business Opportunities
- The Creation of New Solutions Through DX
- - Results of IA2IA - In a World First, Using AI to Autonomously Control a Chemical Plant for 35 Consecutive Days
- Enhancing Profitability in a Difficult Business Environment
- Accelerating Megatrends, Including Nationalism, and Customer/Industry Trends
- Improving Our Overall Ability to Implement Quickly

Our Direction

- Key Points for Realizing SoS
- Creating Growth Opportunities Through IT/OT Convergence, and Strengthening and Expanding Human and Intellectual Capital
- Carrying Out M&A with a Focus on PMI
- Creating Opportunities for Women to Play an Active Role and Focusing on Nurturing the Next Generation of Managers
- Carry Over What Should Be Carried Over, Change What Should Be Changed, and Fulfill Our Mission for Sustainable Growth

President and CEO

In an increasingly uncertain and rapidly changing business environment, we will forge connections across society through businesses that link directly to the SDGs, and lead the world in integration, autonomy, and digitalization.

Yokogawa's Value

Yokogawa's Identity: Finding the Right Balance Between Permanence and Change

The wishes and aspirations of our founders are clearly expressed in our founding principles, which remain unchanged to the present day. Yokogawa's Purpose, a statement formulated alongside the establishment of our Accelerate Growth 2023 (AG2023) mid-term business plan, is a statement of our raison d'être that we had not clearly expressed before, namely, the utilization of our core competence in measuring and connecting to address social issues and fulfill our responsibilities for a future where people and the planet Earth coexist in symbiotic harmony. Building upon that, our Vision statement sets out where we intend to be ten years from now, declaring "Through autonomy and symbiosis, we will create sustainable value and lead the way in solving global issues." In the future, as society and its issues change, as new industry trends emerge, and as customers themselves change their direction, this may, as appropriate, be modified.

The Embodiment of Yokogawa's Purpose and Creation of Value Through Our Business

We are a company that forges connections across society through businesses that are directly linked to the SDGs, leads the world in integration, autonomy, and digitalization, and fulfills its responsibilities for the future of this planet.

In society and industry, new value can be created by correctly measuring and optimizing the control of phenomena, and collating and connecting the information that is obtained. Measurement, control, and information are our core competencies and the foundation for our business. Over the years, we have supported the infrastructure on which both industry and our lifestyles depend, and expanded our business to support the supply chains across society. Our efforts to use our core competencies to build customer corporate value and increase economic value are directly linked to the SDGs. As interest in the SDGs has grown in recent years, our stance, raison d'etre, and areas in which we contribute have become clearer.

Coinciding with the start last year of the AG2023 plan, we shifted our control business from a product- and function-centered business structure to an industry-oriented structure consisting of three industry business segments. The Energy & Sustainability business has direct links to the goal of achieving net-zero emissions, the Life business concerns fields such as foods, pharmaceuticals, water, and human safety that have a direct link to well-being, and the Materials business is directly linked to the circular economy through the handling of raw materials. By aligning our business domains with our "Three goals" for the year 2050, we have made it clear that we are conducting business in a wide range of industries that are based on our core competencies, and that these are closely linked to the SDGs.

- Continuing to Provide Value 10 Years from Now, as a Leading Integrator for a World in Which Entire Societies Function as an SoS -

As envisioned for the year 2030, Yokogawa will endeavor to provide the value of the system of systems (SoS) to customers by leading the way forward as a system integrator in a world where societies function like an SoS. As some shareholders and other investors have commented that they find the SoS concept difficult to understand, I recognize the need to repeatedly explain this to the financial markets.

An SoS is defined as a complexly inter-connected combination of independently operated and managed systems that work together to achieve purposes that lie beyond the combined capabilities of the individual systems. To put it simply in terms that are less likely to be misunderstood, this intricate inter-connection of systems can stably generate

returns that are several dozen or even several hundred times the value of those generated by systems that do not operate in a coordinated manner.

Today, production sites, companies, and entire industries are moving toward industrial autonomy. Having been engaged in the automation of our customers' plants, we are now moving forward with our IA2IA activities that make use of AI, the cloud, robotics, simulators, blockchain, and other digital technologies to evolve and raise the sophistication of our autonomy applications. At the same time, by extending our leadership in DX and IA2IA initiatives that promote customer autonomy from our traditional focus on individual plants to entire supply chains and all of society (customer enterprises, industrial complexes, and cross-company domains), we are moving forward with smart manufacturing activities that expand the scope of the connections and overall optimization. Even in a world where things are complexly inter-connected, we will aim with our activities on these two axes to achieve overall optimization through integration, autonomy, and digitalization, and create value on a wholly new level to realize the SoS concept.

We believe that it is important for all of our employees to have a deeper understanding of specific cases of our SoS activities and how we will contribute to customers, the industry, and society in the future. We will continue to promote awareness internally while also carrying out information disclosure and dialogues to gain the understanding of all stakeholders.

Current Situation and Recognition of Issues

Promoting Global Organizational Reforms to Support Sustainable Corporate Growth

I am working to restructure our global organization to create a framework for sustainable growth and prosperity.

The Yokogawa Group headquarters has established three industry segments (the Energy & Sustainability, Materials, and Life businesses) and created mirror organizations for each at our regional offices outside Japan. Up till now, our business activities in markets other than Japan have tended to focus on oil and gas-related CAPEX projects, partly because of the large volume of business activities that have been conducted in this area. We have also been doing business in many other industries, such as chemicals, water, food, and pharmaceuticals. In order to capitalize on our accumulated successes and know-how and accelerate global growth, we have implemented the same organizational structure for our business in each region and have left no room for excuses by making clear who will be responsible for the growth of each business.

Until now, the business divisions at our headquarters provided products, while offices in each region carried out integration and engineering. Since business development was mainly in the hands of the regional offices, we were, to put it roughly, a conglomerate that was spliced together, and that approach was reaching its limits in terms of being able to support the growth of our business. Another major issue was the structure that caused the number of personnel at each regional office to increase as the number of projects and amount of work increased.

With the restructuring of our global organization, the Energy & Sustainability, Materials, and Life businesses will each need to take responsibility for driving growth. Also, in the Yokogawa headquarters, which manages our global business, the process owners are responsible for optimizing and improving the efficiency of regional operations. For example, they are globally responsible for controlling human resources and the business processes for functions such as project delivery and services. We have tended to focus on and concentrate resources in high-volume areas like the oil and gas sector where there is immediate demand and expectations are high, but we need now to allocate the resources needed for future growth areas like the Materials and Life businesses, and to do so in an optimal and efficient manner to achieve our management targets. As a shared support function for the three business segments, we have added a Center of Excellence (CoE) function to the Digital Solutions Headquarters to standardize best practices and gather information and know-how, and assigned responsibility for sharing this with the offices in each region. As the regional offices have been less effective in sharing success stories, methodologies, and the like with other regions, we have built and begun to operate a standard system that does this without having to rely on specific people.

In parallel with these efforts, we have introduced the use of an enterprise resource planning (ERP) system to make fuller use of management resources and thereby improve management efficiency. And for customer relationship management (CRM), we are working to integrate the use of previously unlinked sales, service, and marketing data.

In addition, I perceive that many Western companies, including our competitors, have established a solid setup to sustain their growth and prosperity. We will seek to draw

even with them during the three year period covered by our AG2023 plan by developing and broadening the use of a sustainable framework that incorporates the craftsmanship that Japanese companies, including ourselves, excel at.

A Change in Mindset to Support Our New Industry Segments and Create Business Opportunities

I feel that our relationships with customers have grown closer following our establishment of the new business structure centering on the three business segments.

Hundreds of employees, mainly people working in sales at our offices in each region, have received training designed to change their mindsets so that they can propose solutions for every part of the supply chain by first gaining an understanding of customers' management and business issues. Proposals that focus solely on products and functions do not address customer processes and challenges that vary by field. It is necessary to have the ability to combine different kinds of knowledge, know-how, and technologies, such as by integrating not only our own products but also those from other companies, or working together with consulting companies, which is something we have not been doing until now. By regularly conducting thorough training to promote a fundamental awareness and behaviors, we will achieve a Group-wide change in mindset that will enhance our ability to propose solutions and result in increased opportunities for interaction with prospective and existing customers.

The Creation of New Solutions Through DX

At Yokogawa, internal DX is already underway. We do data-driven management in which data relating to our business is collected and analyzed to facilitate decision making. Robotic process automation (RPA) is also well established. By making use of internal DX use cases, we are also starting to see external DX results with our customers. In addition to our customers in conventional process industries like oil & gas and chemicals, we have recently also been fostering contacts with companies in the renewable energy field, including biomass, and companies engaged in businesses like boilermaking.

- Results of IA2IA - In a World First, Using AI to Autonomously Control a Chemical Plant for 35 Consecutive Days

In a field test that was jointly conducted with ENEOS Materials Corporation (formerly JSR Corporation Elastomer Business Unit), we succeeded in demonstrating the use of AI to autonomously control operations at a chemical plant, a world first. This was quite a sensation, and we received considerable feedback on this from people all over the world.

At this plant, in order to maintain the quality of butadiene (a type of unsaturated hydrocarbon), which is refined while utilizing exhaust heat with fluctuating temperature, fine tuning is required to correct for external factors such as rain and snow. Operators need to have considerable knowledge and expertise, and are required to stay on site for long periods. While software solutions are often used in the process industry to optimize operations, this is not always possible with operations that rely heavily on the judgements of

experienced plant personnel. Using Factorial Kernel Dynamic Policy Programming (FKDPP), a proprietary reinforcement learning AI algorithm jointly developed with the Nara Institute of Science and Technology, we were able to successfully achieve full autonomous control of the plant for 35 days. In addition, at the evaluation test stage, past and real-time operation data was used to verify the AI model, and it was conclusively shown how it works, to the great satisfaction of our customers, including their highly experienced operators and other plant personnel.

By using our AI, simulation, and other technologies, we can achieve reliable results in a very short period of time, and we can also achieve autonomous operations, including in areas that have been dependent on skilled personnel and operators. This is an extremely valuable success story that has received a huge response from around the world, and we will respond to the broad range of enquiries that have been received.

Enhancing Profitability in a Difficult Business Environment

Supply chains have been disrupted by the impact of the novel coronavirus (COVID-19), and the business environment has grown increasingly severe, with difficulties in procuring semiconductors and other parts, and rising logistics costs and component prices. Some of the parts that we use are selling for several times their pre-pandemic prices, and even then lead times can be long. In addition to global cost improvement activities throughout our supply chain, we are also working to absorb cost increases to a certain extent through negotiations with component manufacturers, the shifting of customer deadlines, and product design changes. Also, we have shifted resources to improve development efficiency and reduce product maintenance man-hours. Had there not been the impact of COVID-19 to deal with, this would have improved overall productivity and efficiency. However, due to the assignment of personnel to deal with parts and other issues, the planned improvement in profitability fell short of expectations. As we believe it is necessary to increase profitability regardless of what is happening in our business environment, we must enhance our ability to implement individual measures and accelerate these efforts.

We are on track with our cloud-based business for external DX, and will scale up our efforts in this field to increase our profit margins. In addition, through the acquisition last fiscal year (FY2021) of PXiSE Energy Solutions LLC, a renewable energy company, and Insilico Biotechnology, a biopharmaceutical company, we are working to realize synergies with Yokogawa that will quickly create new value and generate profits.

Accelerating Megatrends, Including Nationalism, and Customer/Industry Trends

Our conversations with customers lead us to conclude that trade blocs will play a greater role from here on. Even when AG2023 was in the planning stages, we foresaw that rising nationalism was a megatrend that would have a global impact. And as the result of situations like the conflict between Russia and Ukraine, I believe that the movement to keep supply chains within specific countries and regions will accelerate.

To illustrate, we have received requests from customers in the Middle East to invest in the construction of factories in their region and for our suppliers to do the same. Given the recent rapid changes in our business environment, it is necessary to strike the right balance between risks and opportunities and to consider both short-term changes and mid- to long-term assumptions.

In this opaque and rapidly changing business environment, we foresee that the megatrends noted when we were drawing up the AG2023 plan will have an accelerating impact on our customers and their industries. By accurately grasping the transformations that our customers are making in their respective industries, we will continue to create opportunities within our strategies and grow our business.

Improving Our Overall Ability to Implement Quickly

To realize an SoS, one must act quickly and make steady forward progress, even if that is done in tiny increments. As new opportunities arise in each industry, we are gaining exposure to new customers. Not only will we have more opportunities to take on challenges and provide value in new ways, we will also be able to make use of that knowledge and experience to provide value to our existing customers and gradually widen the scope of our business. Our shareholders and other investors value the ability to get things done quickly, and so with this in mind I would like to carefully explain the progress that we have achieved with the basic strategies outlined in AG2023.

Our Direction

Key Points for Realizing SoS

Each of the four basic strategies in the AG2023 plan is important, but in our three industry business segments it is particularly important for us to leverage Yokogawa strengths that will allow us to pick up the pace of our IA2IA and smart manufacturing activities, create value through digitalization, integration, and autonomy that leads to overall optimization, and establish a solid track record in the achievement of SoS.

We have high expectations for our focus areas of renewable energy, functional chemicals, food, and pharmaceuticals, and are moving ahead quickly with initiatives to grow these businesses. For the time being we cannot engage in new energy-related projects in Russia due to the situation between that country and Ukraine, but new demand is expected to be generated as the supply of energy shifts to other regions like the Middle East, Southeast Asia, and North America. With rising demand for energy over the medium to long term, we will not only capitalize on our strengths to secure LNG-related projects, but also take advantage of synergy with PXiSE Energy Solutions LLC to acquire new projects in fields such as renewable energy. As for functional chemicals, market conditions are favorable for chemicals, semiconductors and EVs. With foods and pharmaceuticals, we are taking advantage of our strengths in Japan to enhance our proposals and approach to customers in other countries, and will make use of biotechnology-related deals such as the acquisition of Insilico Biotechnology to grow our business.

In addition, as I mentioned earlier in my discussion of global restructuring, the CoE function will play a very important role in our future business activities, and we will strengthen it so that we can share knowledge and know-how and ensure that this is properly conveyed to our offices in each region. And in light of the dramatic changes in our business environment, we will seek to establish the systems and structure needed to compete globally and change the mindset of our people so that they can work autonomously and be proactive.

Creating Growth Opportunities Through IT/OT Convergence, and Strengthening and Expanding Human and Intellectual Capital

We have the advantage of our knowledge of process automation operational technology (OT), but we must also strengthen our capabilities with information technology (IT). Our customers increasingly approach us to discuss OT/IT convergence projects, many of which involve the extraction, analysis, and utilization of data from the huge amounts of data obtained by OT, or the steps needed to become a digital enterprise. To produce results, we must be able to tightly integrate OT and IT.

There are many people in the IT industry who have a good grasp of IT technology, and consulting companies are able to paint a big picture of an ideal future in which operations are optimized and efficiency is improved. However, we also hear of the difficulties that are encountered when they face requests for assistance with the acquisition of manufacturing site OT data needed to improve productivity and facilitate preventive maintenance. As we understand what OT fundamentally means and can correctly explain how something can be improved and optimized, we have been

approached by various consulting companies that wish to work with us on such projects. There has been a considerable increase in the number of cases where we work together as a team in the ecosystem, and I would like to grow our business in this area.

In addition, to handle certain customer requests, we must strengthen and expand our human resources. To grasp the current status of a customer's smart manufacturing efforts and propose next steps, we need personnel who are familiar with the Smart Industry Readiness Index* (S.I.R.I.) and have the desired qualification. We have about 30 engineers with that qualification who can execute large-scale main automation contractor/main automation and information contractor (MAC/MAIC) projects, but one criterion that companies have when selecting a vendor is that the company must have people who know both IT and OT. We offer in-house DX training course on subjects such as AI and data analytics, and our employees are taking them. By such means, we believe that we will be able to meet the requirements for bidding on such projects, and grow and develop this business. We also believe that acquiring and retaining IT capabilities will enable us to develop our business from a new perspective.

We also have experience and have been successful in connecting and integrating competing products and systems. Based on this, we are able to offer integrated solutions that make use of AI, the cloud, robotics, simulators, blockchain, and other new technologies to expand the scale and scope of our business from plants to enterprises, industrial complexes, and even across multiple organizations. However, this presents challenges. For example, imagine a project where public and private sector organizations work together to reduce CO_2 emissions throughout an industrial complex. Companies and individual plants in that complex may find it difficult to share data that is based on production recipes and other know-how that must be kept confidential. In such cases, we are able to take a neutral position and work together with the assistance of the public sector to identify company requirements, align interests, and achieve objectives. In addition to having the ability to manage such projects, we must also develop and bring on board personnel who can function much like a producer to coordinate projects.

At the same time, we will strengthen our intellectual capital, which makes us more competitive and serves as a differentiating factor. The department in charge of intellectual property has shifted from a defensive to an offensive stance, and we are allocating the necessary human resources. We will conduct objective analysis, including comparisons with competitors and IT companies, and will seek to clarify which areas are strengths or weaknesses. In research and development, we have actively promoted open innovation, and we are now looking to visualize the results by, for example, examining the actual number of opportunities arising from open innovation, identifying what returns have been obtained, and seeing how many paths leading to new business have been discovered, even if they are not profitable businesses yet.

*Indicators developed by the Singapore Economic Development Board (EDB) for the realization of smart manufacturing in stages

Carrying Out M&A with a Focus on PMI

I firmly believe that in M&A, strict post-merger integration (PMI) is critical.

Looking back on past mergers and acquisitions, there were cases where things did not go as expected, such as delays in ramping up the business compared to the original plan. We recognize that there were shortcomings in the process whereby people from our relevant business divisions and members who carry out the risk control matrix (RCM) go into the target company to build relationships while assessing the situation. In order to assess matters such as compatibility of corporate cultures, we will need to make effective use of remote meetings and the dispatch of business partners to strengthen cooperation with the people in the other party's organization.

At the same time, we need to reinforce and enhance the human resources who are capable of carrying out M&A activities. For example, the drug discovery business that we are focusing on in the Life business is a field with unique technologies, but we are often dealing with relatively small laboratories. The manufacturing processes are different from what we have been involved in, and we must build global sales networks and connect all parts of the business to scale up their activities, so a variety of expertise is required. While it is important for employees to learn and gain experience, we will also focus on bringing new people into our organization.

Creating Opportunities for Women to Play an Active Role and Focusing on Nurturing the Next Generation of Managers

Corporate governance is essential to the sustainable growth of the company and the enhancement of corporate value over the medium to long term. We must fulfill our responsibilities to society and live up to the trust placed in us by our stakeholders. We have continually enhanced our systems based on feedback that has been received, and we recognize that this has been positively evaluated.

In recent years, as part of our efforts to promote diversity, we have been implementing mid- and long-term career development plans for female employees, as well as engaging in activities to change the mindsets of managers and promote the active participation of women, with the aim of increasing the number of female employees and female leadership candidates. Several times a year I participate in panel discussions with female candidates for our next generation of leaders, and I am very aware of the aspirations that they hold. We will endeavor to increase their contributions to the company by fostering an environment that makes it easier for them to perform their work and demonstrate their abilities.

In addition, we are implementing a program to develop the next generation of management candidates. Overseen by outside directors, the Nomination Advisory Committee will work with consulting companies who empirically evaluate the aptitude of management candidates, and in a transparent manner make decisions that take into consideration their competency, achievements, experience, and character.

Carry Over What Should Be Carried Over, Change What Should Be Changed, and Fulfill Our Mission for Sustainable Growth

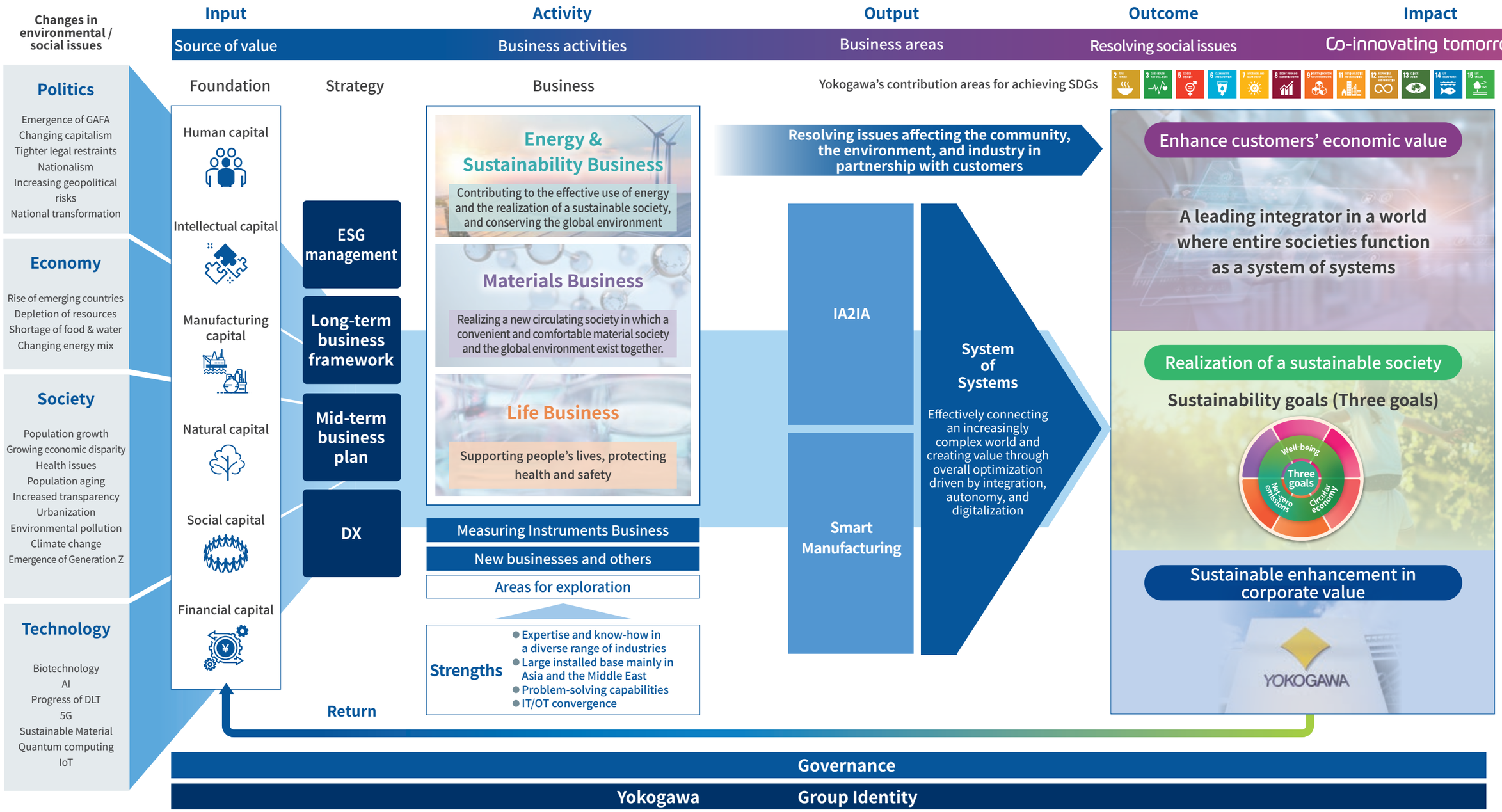
I have long felt that Yokogawa is not particularly good at promoting internal cooperation. In a business environment that is extremely opaque and changing dramatically, an inability to get people to cooperate can be fatal, even if it is clear what needs to be done. By taking the initiative when something comes to my attention and immediately bringing together concerned organizations and the necessary people to engage in discussion and make decisions, I am beginning to see changes in our company culture. I expect to see an increase in the number of people who understand the need for speed and can take immediate actions that transcend organizational boundaries.

I like the words of Masahiro Sakane, the former president and CEO of Komatsu Ltd., who said, "We grow stronger with each passing generation." I too would like to make Yokogawa a company that grows stronger with each passing generation. By carrying over what should be carried over, and changing what should be changed, in my role as president, I am firmly establishing mechanisms and a foundation for next steps, and planting seeds for the future. I envision that Yokogawa will make use of this foundation to blossom as an organization and solve whatever problems that may arise, thereby continuing the cycle by which it becomes stronger. Working with the great trust that has been placed in us by our customers and with the human resources, technologies, corporate culture, and brand power that is our inheritance, I believe that my mission now is to connect and strengthen each of these assets.

Chapter 2

Value Creation Process

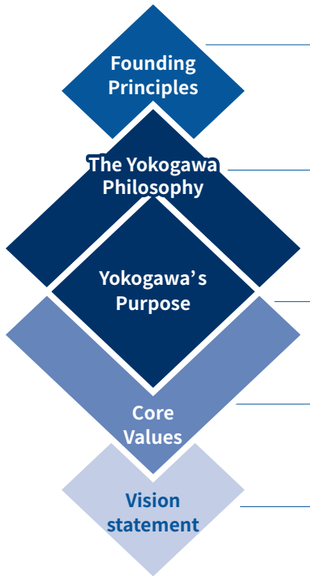
By providing value to customers, Yokogawa resolves issues affecting the community, the environment, and industry in partnership with customers.
Yokogawa sustainably enhances corporate value by leading the way in a world where entire societies function as a system of systems and by contributing to the realization of a sustainable society.



Yokogawa Group Identity

In establishing Yokogawa's Purpose, the elements that shape our identity have been organized as follows. The Yokogawa Philosophy and the underlying founding principles indicate what role Yokogawa should play in society. The Vision statement indicates where Yokogawa wishes to be ten years from now, and our shared values provide guidance for action. Based on these elements, Yokogawa's Purpose is a statement on the meaning of our existence and the intentions that lie behind the commitments we make.

Yokogawa Group Identity



Quality first | Pioneering spirit | Contribution to society

As a company, our goal is to contribute to the realization of a sustainable society through broad-ranging activities in the areas of measurement, control, and information. Individually, we aim to combine good citizenship with the courage to innovate.

Utilizing our ability to measure and connect, we fulfill our responsibilities for the future of our planet.

Respect | Value Creation | Collaboration | Integrity | Gratitude

Through autonomy and symbiosis, Yokogawa will create sustainable value and lead the way in solving global issues.

Founding Principles

Upon founding the company, Tamisuke Yokogawa encouraged Ichiro Yokogawa, the future president, and Shin Aoki, the future chief engineering officer, saying, "You don't need to worry about profits. Just learn and improve our technology. You must make products that earn us the respect of our customers." These words have been passed down to us in our founding principles.

The Yokogawa Philosophy

Based on our founding principles, the Yokogawa Philosophy was formulated in 1988 as a statement on Yokogawa's mission to society that provides guidance on values and the actions that Yokogawa's people should take. When formulating Yokogawa's Purpose, we chose the phrase "sustainable society" to emphasize that we are in business to make a contribution that will be to the good of our planet.

Yokogawa's Purpose

Yokogawa's Purpose is our commitment to meet the requirements and expectations of customers, markets, and society, and expresses the meaning of our existence in society. It aims to unify and give our organization and people the strength and ambition to drive transformation.

Core Values

In keeping with our corporate culture, our shared values provide clear guidance on the actions we all should take. Actions rooted in these shared values will create new value, drive forward our contributions to society, and put us on a strong competitive footing.

Vision statement

The Vision statement addresses where we wish to be as a company ten years from now, and the ideals that we should uphold, based on our long-term business framework. It was created to take the place of the vision statement announced in 2015 for the Transformation 2017 mid-term business plan.

Our Ability to Measure and Connect: Tireless Efforts for Transformation

Since our founding in 1915, we have continued to contribute to the development of society by providing cutting-edge products and solutions to industry, centered on measurement, control, and information technology. By grasping social issues and customer needs and transforming ourselves, we have created value for customers and changed the nature of our business.

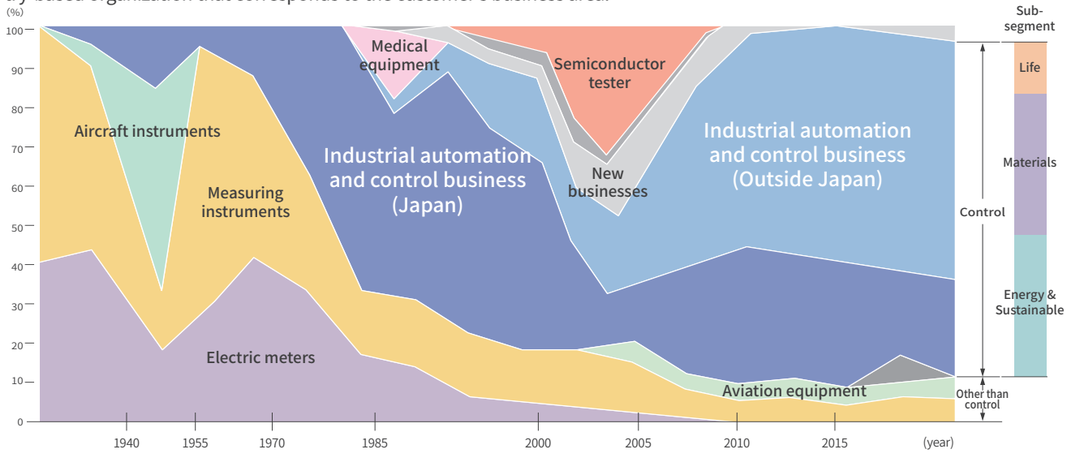
With growing demand for improved productivity, efficiency, and safety, diversification of energy use, global utilization of renewable energy in response to environmental regulations, and digital transformation (DX), we aim to become a world-leading integrator by sublimating the system integration (SI) and engineering capabilities we have accumulated and acquired to date, into SI and engineering capabilities for SoS.

Background

1915–1940	1955–1970	1985	2000–2005	2010–2015–2020
Foundation/ World War II	Post-war/ Economic growth	Merger, Globalization	Business transformation	Sustainability and ESG
Social issues/needs ● Increasing demand for electricity	● Post-war recovery and economic growth ● Factory automation and safety improvement	● Overseas expansion of Japanese manufacturing industry ● Maturing of Japanese market	● Open Innovation ● Increase in large-scale projects outside Japan	● Effective use of energy ● Cost reduction and enhanced value of existing facilities ● Digital transformation (DX)
Value provided by Yokogawa ● Mass production of electric meters in Japan ● Aviation instruments	● Development of electron-tube (vacuum tube) type industrial instruments ● CENTUM, the world's first distributed process control system	● Globalization of sales, engineering, and service networks	● ProSafe-RS, safety instrumented system ● Global Response Center	● Comprehensive solutions and services ● High value-added consulting services ● Life-innovation solutions for pharmaceutical and food industries
History of Yokogawa's businesses ● Pre-war period: meters and measuring instruments ● Wartime period: increased aircraft instruments	● Post-war period: recovery of measuring instrument business ● Economic growth period: growth of industrial instrument business	● Established a medical device joint venture with General Electric Company ● Overseas expansion of industrial automation and control business	● Launch and subsequent withdrawal from new businesses ● Focused on the industrial automation and control business	● Business transformation

Business Portfolio Transformation

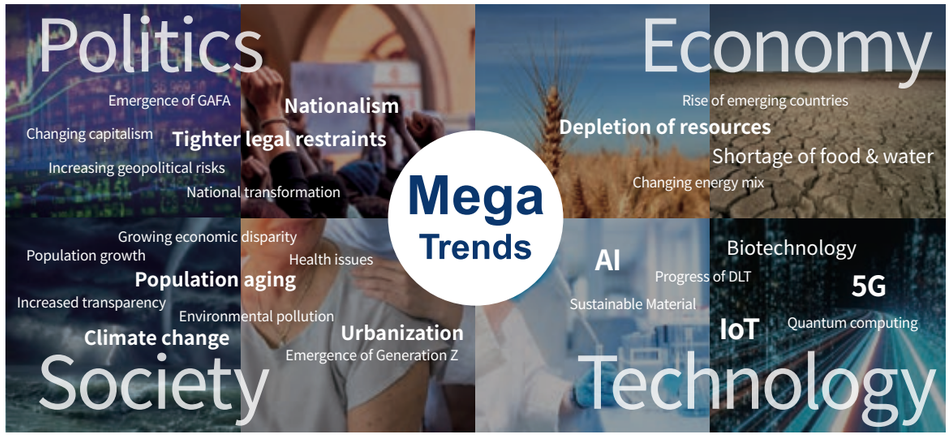
We are transforming ourselves for further growth, reorganizing our main control business, where we can make the most of our cultivated technology, know-how, and strengths, from the conventional product/function-based organization to an industry-based organization that corresponds to the customer's business area.



*Starting from the year 2000, a wider scale is used for the year axis along the bottom of the graph.

Changes in Environmental / Social Issues

There are no major changes from the megatrends at the time AG2023 was formulated, but in an extremely unclear and rapidly changing business environment, the movement toward transformation is accelerating in each industry of our customers.



Customer trends

- Shift to renewable energy (mainly energy-related companies)
- Shift to production of environmentally friendly products
- Growing need for workforce reduction/unmanned operations, progress with digital transformation (DX)
- Accelerating low-carbon investment
- Process flexibility improvement
- Efficient, sophisticated, and fast R&D

Process automation industry trends

- Maturing product markets, hardware commoditization
- Growing software and sensor markets
- Spread of new business models
- Competition with IT companies
- Threat of cyber attacks

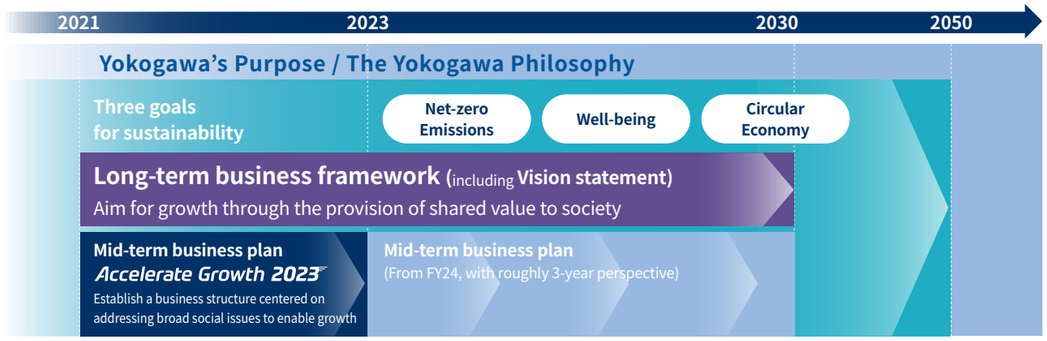
ESG Management

Regarding the environmental and social aspects, we are working on the assumption that our business itself has a direct link to the solution of social issues. In particular, for the SDGs, we have set the "Three goals" as our vision of society for 2050, with six contribution areas as mid-term goals for 2030, and are working on them.

Regarding governance, we are continuing to utilize and improve existing systems and frameworks, as well as working to further diversify the Board of Directors and improving information disclosure. In addition, we are proceeding with the creation of a global human resources system and an appraisal and compensation system for the Group, and streamlining organizational responsibility and authority, while working to enhance Group governance. We are strengthening our internal control and risk management systems on a global basis, considering an increase in the number of subsidiaries outside Japan due to the development of new businesses and involvement in M&A.

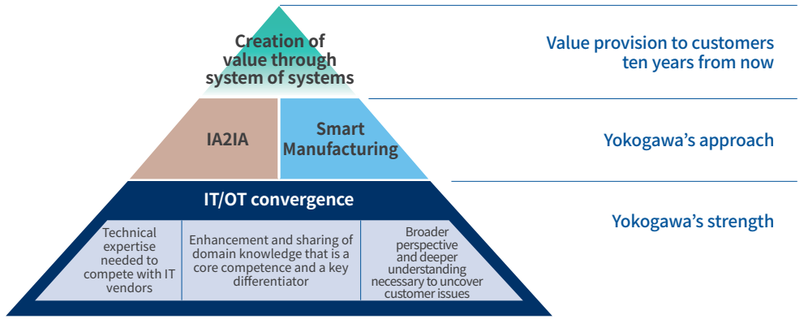
Overview of Long-Term Business Framework and Mid-Term Business Plan

We believe that efforts to achieve the three goals of our sustainability goals, which set out our vision for a sustainable, low-carbon, circulating society for future generations, will be a business opportunity in themselves: net-zero emissions, circular economy, and well-being. To contribute to society by resolving issues affecting the community, the environment, and industry, and to become a bigger, stronger company with a strong presence, Yokogawa set a goal of becoming a corporate group with sales of approximately a trillion yen by fiscal year 2030.



Long-Term Business Framework – Value provision to customers ten years from now

As a pioneer in a world where systems of systems (SoS) are advancing, we will effectively connect an increasingly complex world through integration, autonomy, and digitalization, and create the value of total optimization.



Long-Term Business Framework - Restructuring of business segments

We are reorganizing our main control business, where we can make the most of our cultivated technology, know-how, and strengths, from a conventional product/function-based organization to an industry-based organization and working to speed up business expansion and conversion to a solutions business.

Energy & Sustainability

- Oil & gas
- Petrochemicals
- Renewable energy
- Electric power
- EMS
- Energy storage

Materials

- Functional chemicals
- Biomass materials
- Pulp & paper
- Textiles
- Steel
- Non-ferrous metals
- Mining
- Mobility
- Electrical/electronics

Life

- Pharmaceuticals
- Healthcare
- Food
- Water

Measuring instruments*1

- Energy
- Info-comm
- Healthcare

New businesses and other*1, *2

- Yokogawa Bio Frontier Inc
- amnimo Inc

Areas for exploration Disaster prevention, space, and ocean

*1: Measuring instruments business, New business and Other business need to maintain independent business operations due to the characteristics of their products and commercial distribution. They are in separate segments but share the same direction of value provision ten years from now.

*2: The contents of the "●" mark for new business and other are based on Yokogawa's activities.

Overview of Long-Term Business Framework and Mid-Term Business Plan

AG2023 Mid-Term Business Plan - The four basic strategies - *Accelerate Growth 2023*

Regarding the mid-term business plan AG2023, we have formulated four basic strategies and key measures to be taken over the three years up to fiscal year 2023 to realize the vision for ten years from now described in the long-term business framework.

AG2023 Mid-Term Business Plan - Key performance indicators and targets -

Our basic policy is to maximize corporate and shareholder value from a mid- to long-term perspective. We aim to achieve record-high levels of earnings per share (EPS) growth, generate operating cash flow and improve return on equity (ROE).

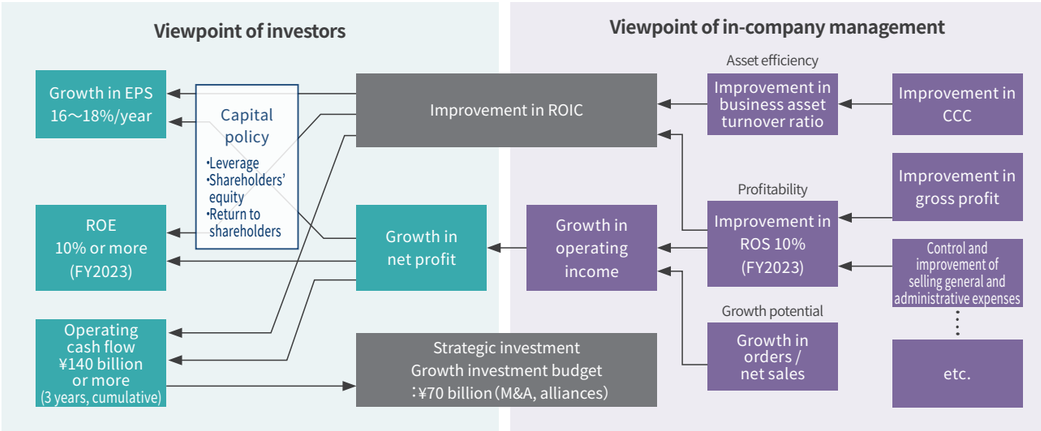
Key points

- Solve customer's on-site issues and globally expand enterprise system business
- Strengthen industry support and expand businesses that are not industry dependent
- Make improvements to ensure a sound earnings structure
- Optimize resource allocation to realize the strategy of the entire Group
- Strengthen the ability to generate cash flow creation output in the future and cumulatively

Targets

Order growth	8-10% / year
Sales growth	4-6% / year
EPS growth	16-18% / year
ROS	10% (FY2023) [Record high level / Previous record 9.6% (FY2015)]
ROE	10% or more (FY2023)
Operating cash flow	¥140 billion or more (3 years cumulative)

Main initiatives for achieving targets (KPI structure)



Yokogawa's Business

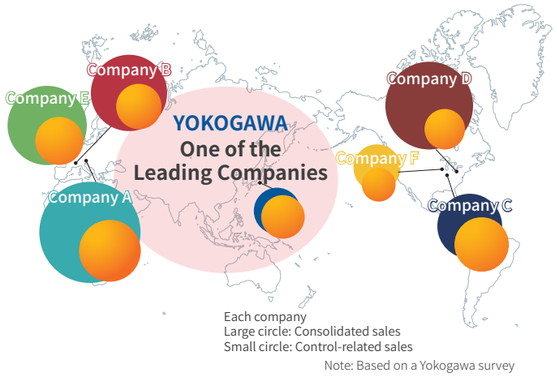
Since our founding in 1915, we have continued to contribute to the development of society by providing cutting-edge products and solutions to industry, centered on measurement, control, and information technology. At present, in the control business, which is our main business, we have contributed to the development of various industries such as oil, gas, chemicals, electric power, steel, pulp and paper, pharmaceuticals, and food, and have gained a large share of these markets in not only Japan, but also in emerging and resource-producing countries and regions, such as Russia, China, the Middle East and ASEAN countries.

Competitive Environment

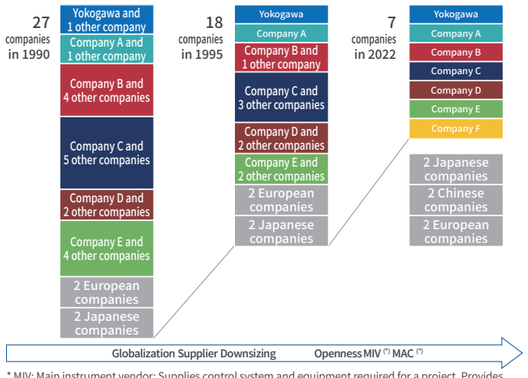
In its mainstay industrial automation and control business, in the process automation (PA) field Yokogawa competes mainly with conglomerates whose annual turnover exceeds a trillion yen. In 1990, there were 27 global players, but due to competition, there are now seven. Yokogawa has capitalized on its ability to provide comprehensive control solutions and its excellent hands-on approach to cultivate the trust of its customers and co-create value with them. Our strong problem-solving capabilities have enabled us to gain a large share of the market and build up a large installed base in Japan and in emerging and resource-producing countries and regions such as Russia, China, the Middle East, and ASEAN countries. We have also earned the trust of EPCs around the world.

In an extremely uncertain and rapidly changing business environment, the needs for localization in resource-rich and emerging countries, demand for energy due to population growth, and expectations for solutions to social issues such as reducing the environmental impact will increase, and global demands such as diversification of energy use, including renewable energy, as well as demands from customers for increased productivity and efficiency, safety and security, and remoteness will rise. As competition intensifies on a global scale, Yokogawa will transform itself into a company that will lead its customers by providing new global solution services by gathering the world's wisdom through integration, autonomy and digitalization, in addition to our existing high project execution capabilities.

Competition against conglomerates with annual sales turnover exceeding a trillion yen



Trusted as a manufacturer specializing in the industrial automation and control business

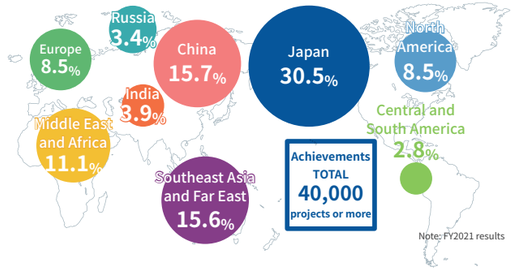


* MIV: Main instrument vendor: Supplies control system and equipment required for a project. Provides support in engineering, commissioning of control systems, and plant start-up and commissioning.
MAC: Main automation contractor: Provides services that encompass all areas of project execution. Every aspect of project execution is supported, including budgeting, scheduling, resources, and risk management.
MAIC: Main automation and information contractor: Provides services that optimize plant operations by integrating both the management system and manufacturing system domains. These services improve supply chain management, strengthen market response, and ensure flexibility.

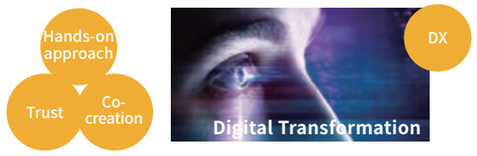
Yokogawa's Strengths

Since its first efforts 60 years ago to launch a global business, Yokogawa has realized a geographical distribution of its operations that its competitors cannot match and has accumulated a wealth of experience through over 40,000 plant control system projects worldwide. Fully leveraging its extensive track record, Yokogawa focuses on solutions that enhance the productivity of its customers' plant facilities and improve the efficiency of their maintenance operations. it also increases their resilience to withstand any changes in the external environment.

Large installed base and even geographical distribution unmatched by competitors



Problem-solving capabilities



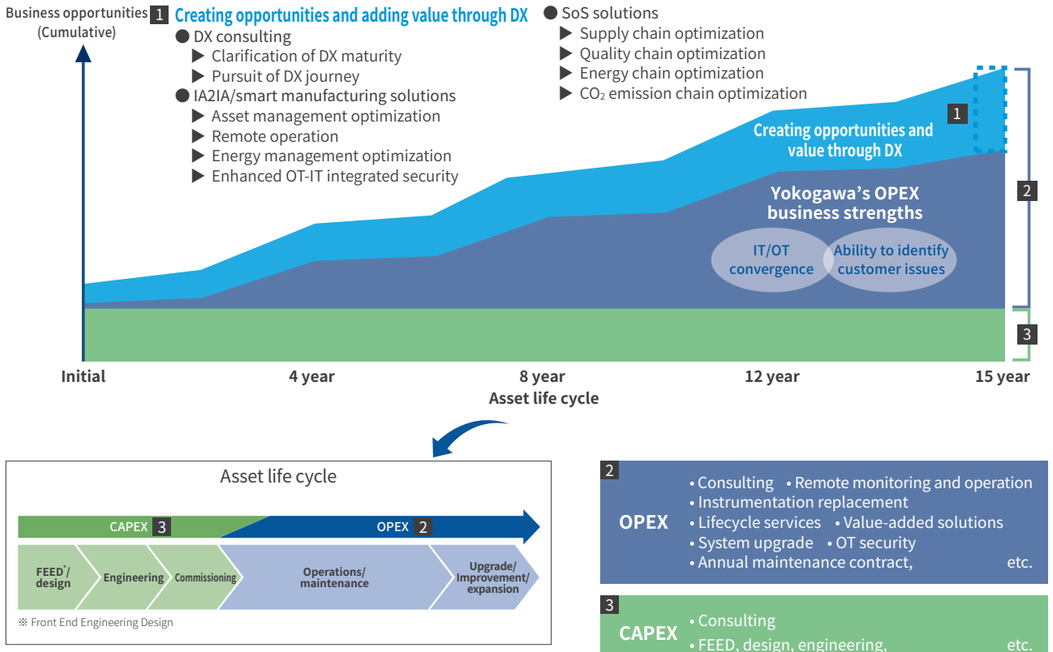
Comprehensive brand of Yokogawa's control business

OpreX™

Yokogawa's Business

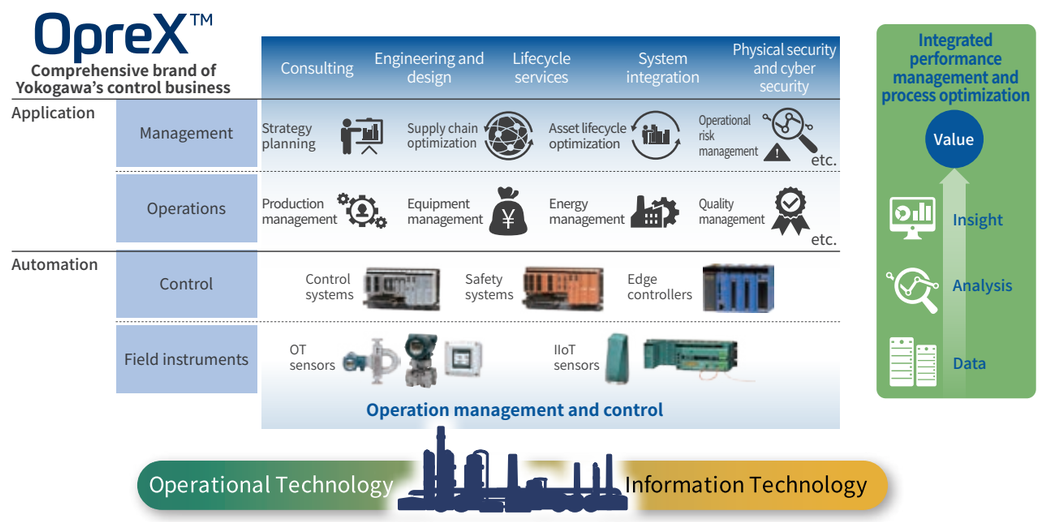
Digital Transformation (DX) and Cumulative Business - Synergies Expanding Business Opportunities

Customers are accelerating their efforts to achieve digital transformation (DX) and improve sustainability, and opportunities for Yokogawa to provide comprehensive solutions as customer's partner are expanding. In addition, the OPEX business, our core business, is a cumulative business providing solutions throughout the lifecycle of customer's assets, which synergistically drives our business opportunities as an integrator.



IT/OT Convergence as a Game Changer for Business

The strength of our solutions is IT/OT convergence, the integration of IT and OT. Yokogawa is able to derive the best answers from vast amounts of process data using its simulation and analysis technologies, including its AI and Digital Twin technologies, and the combination of Yokogawa's deep domain knowledge and the OT domain knowledge cultivated over many years in the customer's industry. Yokogawa has become a key player in the creation of value for our customers' businesses through the application of IT/OT convergence solutions.



Value Providing Through System of Systems (SoS)

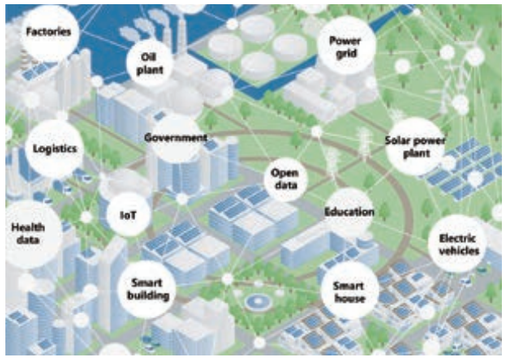
In the world today, everything is increasingly inter-connected in complex ways. It is becoming ever more important to capitalize on this inter-connectedness by engaging in co-creation. Yokogawa focuses on the SoS concept and will provide the value of "total optimization" through integration, autonomy, and digitization in all aspects of society that becomes the SoS.

About the SoS

The SoS is not just a huge collection of connected systems; rather, it is a system of independently operated and managed systems that work together to achieve a purpose that cannot be achieved by any one system. A smart city is a good example. All the elements that make up a smart city – from its energy systems and other infrastructure to the companies conducting economic activities, their employees, consumers, and households – influence each other. The overall optimization of a smart city not only fosters efficiency but results in the creation of new lifestyles and new types of value. As the trend toward the SoS continues to advance, Yokogawa will be able to further demonstrate its strengths in this area.

System of Systems

Everything is inter-connected in complicated ways, and the components function as independently operated and managed systems that work together to achieve a purpose that cannot be achieved by any single system.



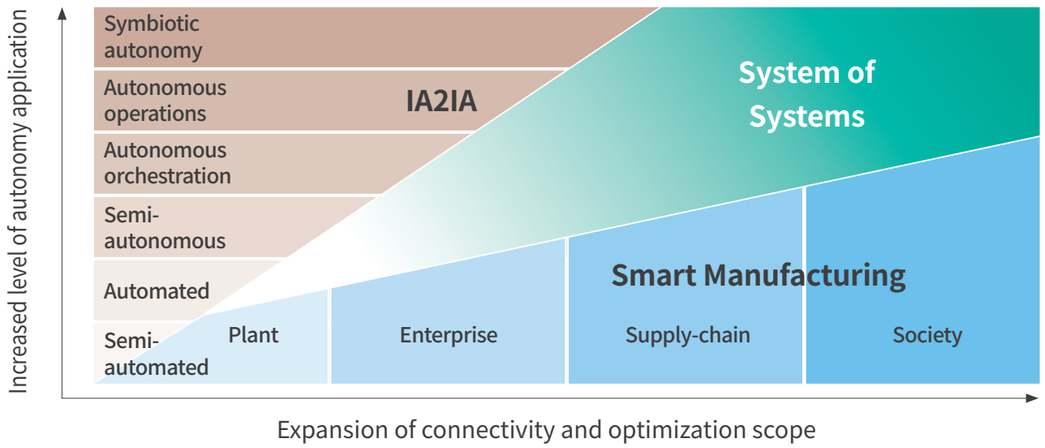
Two Elements that Realize Value Provision Through the SoS

IA2IA, which stands for industrial automation to industrial autonomy, and smart manufacturing are the two elements through which we will deliver value based on the SoS concept. With IA2IA, high value will be added by proceeding in steps from semi-automation to full automation, and then from semi-autonomy to full autonomy.

The status of these efforts will be determined by the progress that is achieved in data integration and the degree to which various production facilities, companies, and industries are able to operate autonomously through the use of machine learning.

Smart manufacturing expresses the scope of control. This could be the control of a specific production facility such as a plant, the optimization of operations for an entire company, or even the optimization of an entire supply chain.

Based on the SoS concept, we aim to deliver value through the twin approaches of the progressive achievement of autonomy (IA2IA) and the expansion of the connectivity and optimization scope (smart manufacturing).

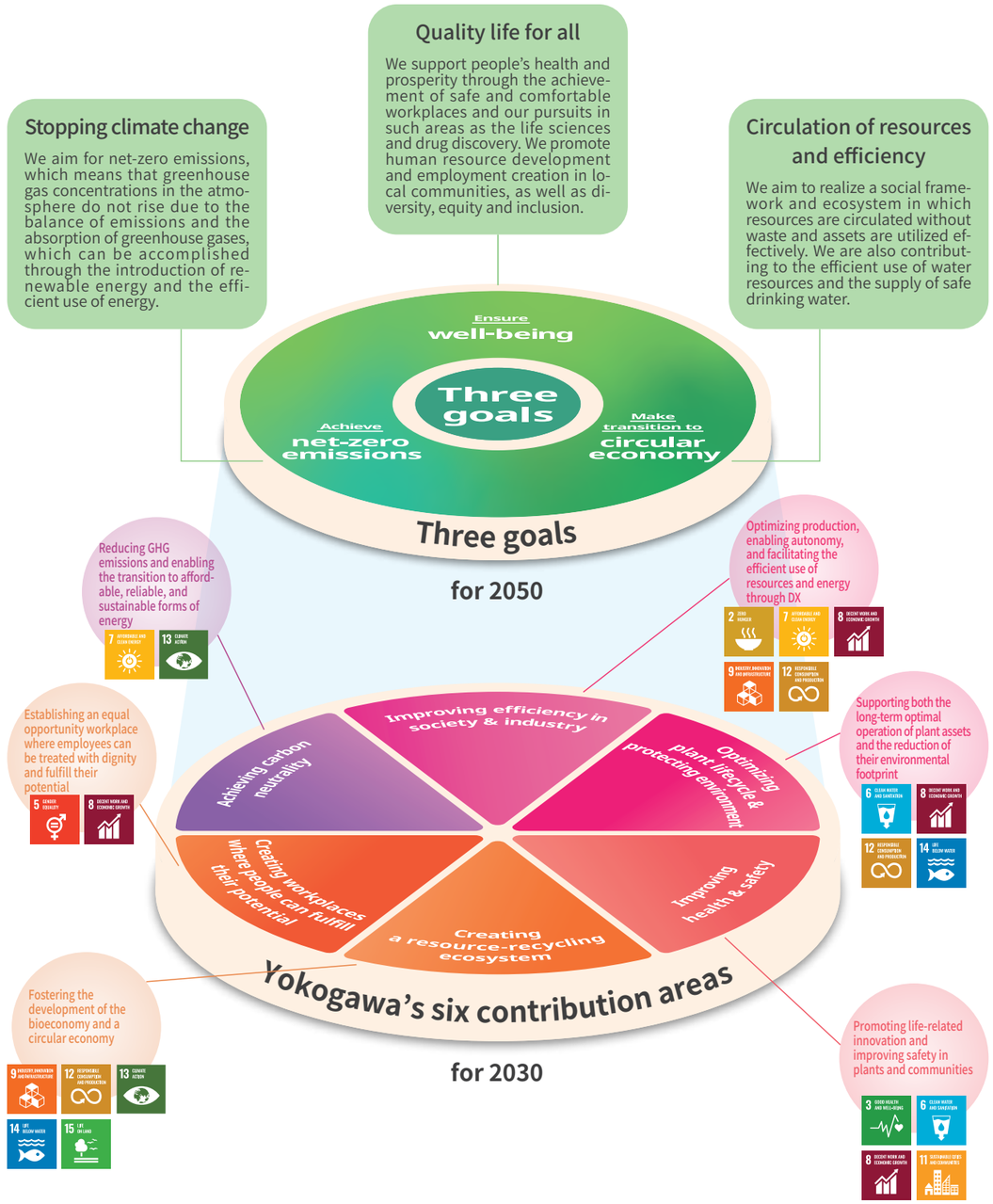


Realization of a Sustainable Society

Yokogawa has set "Three goals" in achieving a sustainable society by the year 2050. We conducted a materiality analysis, identified priority issues for achieving the Three goals and growing our business, set sustainability indicators and targets, and are addressing these issues.

The "Three goals" for Sustainability and Six Contribution Areas

Following global initiatives such as the Paris Agreement and the Sustainable Development Goals (SDGs) resolved in 2015, we set out the Three goals for sustainability in 2017 as the society we aim to achieve in 2050. In addition, we have conducted a materiality analysis to clarify the priority issues for achieving the Three goals and accelerating business growth, and established six contribution areas based on the results.

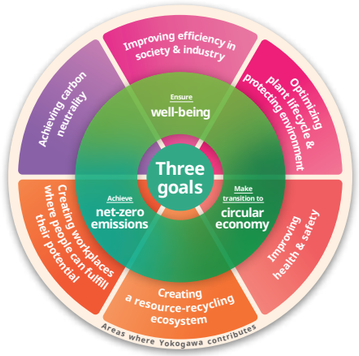


Setting Contribution Areas Based on Materiality Analysis

We defined materiality as meaning the importance in terms of both the impact on society and the environment and the impact on the company's value creation and business model. In July 2022, the first Sustainability Committee meeting was held to conduct a materiality analysis, and we confirmed that the priority issues that were important both for the company and the society and were to be resolved by the company and the six contribution areas would not need to be changed from the time of establishing AG2023.

Process of Materiality Analysis

1. **Conducted analysis covering all business activities which aimed at creating corporate value (and preventing damage to its value), with items related to business opportunities and to management.**
2. **Evaluated the materiality of individual items from two aspects: impact on society and the environment (social axis) and impact on corporate value creation and business model (business axis), and select focus areas.**
3. **Review the appropriateness and completeness of focus areas from the perspective of stakeholders.**
4. **Confirmed the appropriateness of the issues to be resolved (priority issues) and themes of contribution (contribution areas) based on the selected focus areas**



Three goals and Six Contribution Areas

Sustainability Indicators

For each contribution area, we have established long-term indicators to measure the degree of contribution to society (social impact indicators) and mid-term indicators to measure the growth of businesses contributing to society (business activity indicators) in the AG2023. (See pages 34 and 35.) We will accelerate contributions and growth through the PDCA based on these indicators.

Indicators of six contribution areas

Business activity indicators
For 2023, expanding businesses that contribute to the SDGs and accelerating growth

Social impact indicators
Expanding contributions in six areas to achieve the SDGs

Three goals
The society we want to be in 2050

Growth Through Contribution to Sustainability

We are committed to achieving our "Three goals" for sustainability for 2050 and contributing toward the attainment of the United Nations' Sustainable Development Goals for 2030.

When drawing up our AG2023 plan, we formulated Yokogawa's Purpose, a statement that reads, "Utilizing our ability to measure and connect, we fulfill our responsibilities for the future of our planet," and we identified six areas where we should contribute. We reconfirmed where we should focus our efforts based on a materiality analysis. This involved an examination on both a social axis (SDG contributions and global risks) and a business axis (projections of revenue size, contribution to revenue growth in the medium term, and ESG assessment results). The aim is to improve and provide a stronger foundation for our business from the ESG perspective and to focus on businesses that have significant growth potential.

Junichi Anabuki
Director, Executive Vice President

We feel that stakeholder interest in achieving carbon neutrality, one of the six areas where we aim to contribute, is very high. We have set a target of eliminating all GHG emissions at our business sites by 2040 and are steadily implementing measures to accomplish this that involve the introduction of internal carbon pricing (ICP). Our efforts to provide solutions for the development of renewable energy infrastructure and so on to our customers are also making significant contributions toward the reduction of GHGs. As for our target area of "Creating workplaces where people can fulfill their potential," we are accelerating our efforts to transform our human resources and promote diversity, equity, and inclusion.

We have set sustainability indicators and targets that are linked to each of these six contribution areas, and will simultaneously accelerate our contribution to sustainability and business growth by working toward these targets.

Thoughts on Value Creation

Accelerate Growth 2023

Thoughts on Value Creation

Takashi Nishijima
Chairman

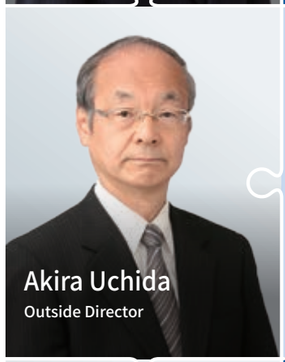
By making full use of the measurement, control, and information technologies that we have cultivated over the past 100 plus years, all of us at Yokogawa will endeavor to create value for the realization of a new global society that is not simply an extension of what has been done in the past!

Junichi Anabuki
Director, Executive Vice President

By growing our business, we will help to resolve environmental and other issues that humanity is faced with, and achieve our "Three goals" for society in 2050.

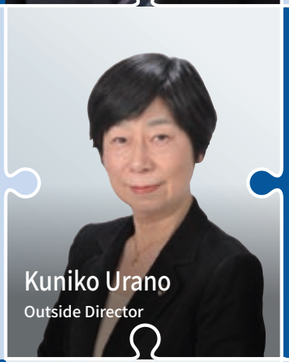
Yu Dai
Director, Senior Vice President

We will take care of and collaborate with all our stakeholders, and endeavor together to solve global sustainability issues and challenges and create a better world for our future generations.



Akira Uchida
Outside Director

It is people who create value, and it is people who create the future of our planet. Yokogawa will aid in creating value by investing in people and fostering an environment that motivates them, and by investing in R&D to provide the foundation for these activities.



Kuniko Urano
Outside Director

The key is whether we can act faster now that we are living in a "new normal" of rapid change. Let's look squarely at the front-line situation and the data, and further develop our open and sincere communication.

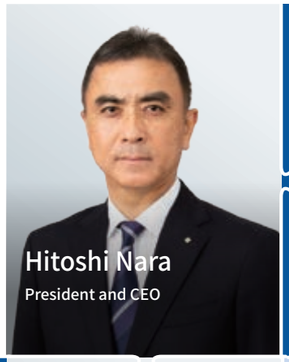
Hajime Watanabe
Audit & Supervisory Board Member

Corporate value creation means contributing to society through innovation by providing products and services that meet customer needs and solve their issues.

Yasuko Takayama
Outside Member, Audit & Supervisory Board

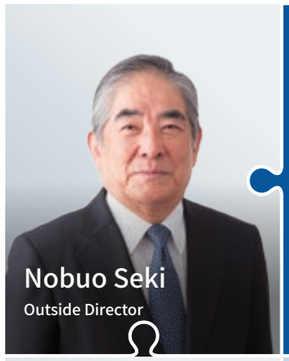
The "connection" of "measurement" creates new value, and the linking of these two activities helps to address issues that impact our society and make our life on this planet more sustainable. With regard to these activities, I will maintain a fair perspective.

At Yokogawa, our raison d'etre is to fulfill our responsibility for the future of our planet through our ability to measure and connect. To have the strong market presence needed to solve social issues and contribute to society, we have set the goal of becoming a trillion-yen company by fiscal year 2030. By restructuring our organization to focus on industry business segments and working to achieve record-high targets based on the strategies set out in the AG2023 mid-term business plan, we will strive to maximize both corporate and shareholder value.



Hitoshi Nara
President and CEO

To capitalize on the opportunities for growth that we see in a rapidly changing business environment, we will transform ourselves into a company that continually creates new value with its ability to measure and connect.

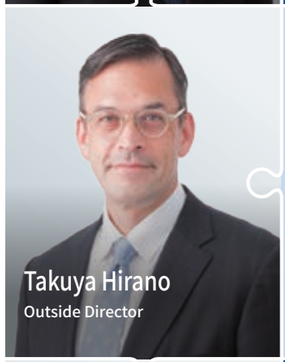


Nobuo Seki
Outside Director

The arena where Yokogawa can deliver the SoS concept is a safe and secure advanced circular economy in which people and the planet can live together in lasting harmony. I expect Yokogawa to connect major social common capital and make sustainability visible.

Shiro Sugata
Outside Director

We create valuable hardware and software products as well as services that are helping from one day to the next to make the lives of our customers and people everywhere better.



Takuya Hirano
Outside Director

We will continue to challenge ourselves to be an impactful company so that we can innovate for, be trusted by, and bring joy to our stakeholders all around the world.

Kouji Maemura
Audit & Supervisory Board Member

Using the knowledge and experience that we have gained at Yokogawa, we will do our part to ensure sound and appropriate management through the conduct of business and accounting audits.

Makoto Ohsawa
Outside Member, Audit & Supervisory Board

A diverse and flexible governance system and the development of management personnel are essential to long-term value creation. As a corporate auditor, I will fulfill my mission of monitoring and advising companies in order to achieve this goal.

Masaru Ono
Outside Member, Audit & Supervisory Board

Even when it is difficult to predict the future, measurement and control technologies play an essential role in Yokogawa's mission to create value through contributions that benefit people and the environment.

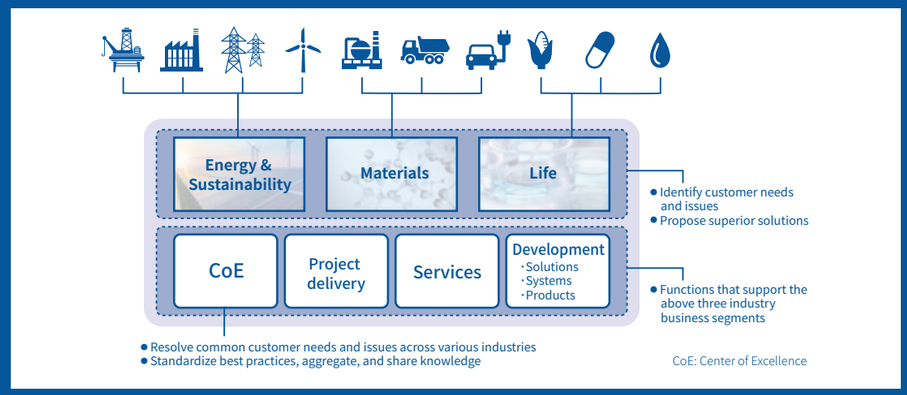
Chapter 3

Management Strategy

With the approach of IA2IA and Smart Manufacturing, we become the leading integrator in a world in which society as a whole functions as the SoS.

Reorganization of Business Segments

In fiscal year 2021, to realize Yokogawa's Purpose and sustainability goal of "Three goals" as a business, we shifted our control business from a product and function-based organization to a subsegment structure in which we develop our business based on the areas in which our customers operate. We have also established a CoE function, development function, delivery function, and service function as functions that commonly support the three sub-segments. In the past year, we believe that we have generally established that structure, and as these functions and the three subsegments work together across the organization, we will implement the four basic strategies of our mid-term business plan "Accelerate Growth 2023" at unprecedented speed to create new value.



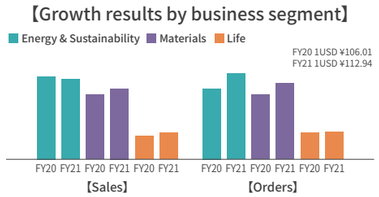
In the mainstay control business, we strengthened global collaboration on an industry basis through this organizational change, and achieved certain results in areas that each sub-segment should focus on.

Energy & Sustainability: Executed M&A deals in **renewable energy sector** and gained a foothold for growth
Materials: Established global collaborative organization. Achieved steady growth in **chemical, semiconductor, and electric vehicle** sectors
Life: Achieved growth in **pharmaceutical, food, and water** sectors. Executed biotechnology-related M&A. The first steps towards growth were taken.

	AG2023 CAGR			(Reference) Order growth	
	Market growth rate (Forecast*1)	Sales growth Target	Sales growth Results (FY21)	Target	Results (FY21)
Energy & Sustainability	3.2%	4% or more	(2.7%) ((7.5%*2))	(9% or more)	22.6% (16.3%*2)
Materials	3.5%	3% or more	9.7% (5.7%*2)	(6% or more)	19.6% (14.9%*2)
Life	2.9%	16% or more	14.0% (11.7%*2)	(16%or more)	6.2% (4.4%*2)

*1 Source: IIR Feb. 2021 *2 Organic growth (excluding impact of exchange rates)

【Growth results by business segment】



Accelerate Growth 2023 Review of Basic Strategies

■ Accelerate Growth 2023 Review of Basic Strategies

1 "Implement IA2IA & Smart Manufacturing and Transform Value Provision"

From solutions that realize IA2IA/Smart manufacturing, we identified those that could be scaled up at an early stage, proceeded with the packaging, and released 50 solutions. The released solutions will enable efficient promotion development in a variety of industries globally in the future.

In addition, the IA2IA/Smart manufacturing business received 195 orders, and we will focus on scaling up overseas, a larger market, while leveraging the problem-solving business methods that have been successful in Japan. We will also accelerate this by utilizing and deploying new solutions.

In March 2021, we conducted a joint field test with ENEOS Material Corporation (formerly JSR Corporation elastomer business unit) and became the first company in the world to successfully operate a chemical plant for 35 consecutive days under autonomous control using AI. We have received inquiries from many chemical manufacturers in Japan and abroad. In addition, we are seeing steady results in our advanced initiatives, such as being selected as a MAC for a biofuel refining project, realizing a Digital Twin with a comprehensive solution from our group and KBC (a higher-level production optimization solution, RIOS), and starting to roll it out laterally after successful demonstration experiments to optimize the entire production process, including the supply chain, and improve earnings. We will continue to accelerate our efforts to "move IA2IA concept to the implementation phase" and to "expand the scope of smart manufacturing solutions provided for customers."

2 "Strengthen Industry Responsiveness and Expand Cross-Industry Business"

In the Energy & Sustainability business, we are focusing on the renewable energy industry, and in fiscal year 2021 we received orders of ¥4.5 billion, up 15% from the previous fiscal year. In addition, we entered the MGC and DERMS fields in earnest with the acquisition of PXiSE Energy Solutions, LLC. We are off to a good start, receiving many inquiries due to synergies with our group.

In the materials business, we are focusing on the functional chemicals industry and, using the strength of solutions we have cultivated in Japan, we aim to increase orders overseas. In fiscal year 2021, overseas orders were ¥14.6 billion, up 61% from the previous fiscal year.

In the Life business, the entire business is a focus area, but especially in the pharmaceutical and food industry, the Manufacturing Execution System (MES) and productivity improvement businesses performed well, resulting in orders of ¥20.8 billion in fiscal year 2021, up 12% from the previous fiscal year. The Group also focused on overseas expansion of its water business, winning 14 deals for wide-area water distribution management or seawater desalination projects. In addition, the company is actively taking on the challenge of creating new value, such as the successful demonstration of optimizing the operation of a sewage treatment plant for the drinking use of recycled water.

On the other hand, we recognize that there are challenges to scaling up in the bioprocessing business. We will continue to accelerate our efforts to "provide new value to customers who are making the shift to being integrated energy companies," and to "expand other industry and cross-industry business."

3 "Ensure Profitability and Sound Growth"

Although we have been able to absorb some of the effects of higher logistics costs and component prices, as well as increased man-hours to deal with parts procurement difficulties through each initiative, we need to further enhance and accelerate our ability to implement each initiative to secure profitability for growth.

As for the Cash Conversion Cycle (CCC), we recognize that there are challenges because the sales ratio in Japan and the Middle East, which have long payment periods as regional business practices, is high. In addition to our efforts to shorten the collection period, we will also make company-wide improvements to ensure seamless business processes throughout the supply chain.

4 "Optimize Internal Operations and Transform Mindsets"

Our persistent efforts to optimize operations and improve our information infrastructure over the medium to long term to achieve sustainable growth are producing results. A change in mindset is needed to gain a different dimension of speed and execution for all initiatives, and we will continue to accelerate our efforts, such as strengthening strategic planning functions, cultivating a corporate and organizational culture that encourages an entrepreneurial spirit, strengthening internal DX and transforming business models, and improving employee skill conversion and engagement.

AG2023 Basic Strategy Review Summary

1 Implement IA2IA & Smart Manufacturing and Transform Value Provision

Expansion of value provided

- Move IA2IA concept to the implementation phase
- Expand the scope of smart manufacturing solutions provided for customers

Main activities

- Develop solution portfolio to scale up IA2IA/Smart manufacturing and promote this business globally
- Establish a global foothold in ERP system integration (SI) business
- Expand integration capacity through MAC/MAIC
- Promote shift to new business models (recurring model, subscription model, etc.)

Progress and results Good start to value expansion ○:Going well

- Developed solution map based on IA2IA/Smart manufacturing strategy.
- Made steady progress in packaging solutions and expect to soon scale up these businesses.
- Many results achieved with field trials in collaboration with customers
- ERP System Integration business has progressed outside Japan
- Progress has been slower in transitioning to new business models. Further acceleration is needed.

▶ **Number of new solutions released by IA2IA/Smart manufacturing business**
FY21 results **50 solutions**
FY23 target 150 solutions

▶ **Number of Orders received for IA2IA/Smart manufacturing business***
FY21 results **195 orders** (outside Japan)

▶ **In a world first, used AI to autonomously control a chemical plant**
- successful field test collaboration with ENEOS Material Corporation -

"Case Study" P. 42

Distillation columns at the ENEOS material corporation chemical plant

*Formerly JSR Corporation elastomer business unit
*IA2IA: The transition from Industrial Automation to Industrial Autonomy by incorporating DX-related technologies such as AI, Digital Twins, and robotics
*Smart manufacturing: The achievement of autonomy and improvement of productivity in production operations, enterprises, and supply chains through DX and IA2IA

2 Strengthen Industry Responsiveness and Expand Cross-Industry Business

Expansion of value provided

- Provide new value to customers who are making the shift to being integrated energy companies
- Expand other industry and cross-industry business

Main activities

- Establish a solution business to optimize energy management for complex energy supply chains, including renewable energy and storage battery.
- Expand solution business, targeting the functional chemicals market.
- Strengthen solutions and expand business in the pharmaceutical and food industries.
- Strengthen global sales capabilities for OPEX solutions, utilizing extensive installed base.
- Develop emerging markets.

Progress and results Launched and steadily expanded three industry business segments ○:Going well

- Increased orders in focus industries (renewable energy, functional chemicals, food, and pharmaceuticals)
- Full entry into MGC, DERMS* fields, which integrate renewable energy, storage batteries, and other distributed energy resources and optimize entire systems
- Progress achieved water business outside Japan
- With Life business, facing challenges in scaling up new business in bioprocessing
- OPEX solutions are growing. Need to strengthen efforts for higher growth.

※MGC: Micro Grid Control DERMS: Distributed Energy Resource Management Systems

▶ **Orders received in focus industries (FY21 results)**
- Energy & Sustainability
  Renewable energy **¥4.5B** (YoY +15%)
- Materials / functional chemicals outside Japan **¥14.6B** (YoY +61%)
- Life / Pharmaceuticals and foods **¥20.8B** (YoY +12%)

▶ **Acquisition of PXiSE Energy Solutions LLC**
Steady progress with startup due to synergy effects

▶ **Number of orders for water business outside Japan**
FY21 results **14** orders

"Special feature" P. 41

▶ **Successful completion of the proof of concept for optimization of operations at US wastewater reclamation facility that produces potable water**
Project receives Transformational Innovation award from the Water Reuse Association

Tapia Water Reclamation Facility (California, USA)
(Photo credit: Las Virgenes Municipal Water District)

3 Ensure Profitability and Sound Growth

Profitability and growth in value provision

- Aggregate knowledge and improve efficiency with large projects
- Focus resources on product groups that deliver high value
- Generate profits from software and engineering

Main activities

- Improve efficiency in large projects through knowledge aggregation and horizontal deployment
- Shift resources from product maintenance to new products and technologies
- Strengthen cost competitiveness of projects
- Improve efficiency of the entire supply chain
- Further improve production efficiency

Progress and results Contribution in absorbing cost increases in a tough business environment. Further acceleration is necessary to improve profitability. △:Slightly behind expectations

- Launched and horizontally deployed CoE (Center of Excellence) function to aggregate experience in each region. Progress is on track.
- Reduced maintenance work in product development while addressing parts procurement difficulties. Steadily shifted resources to new product and technology development.
- Cost reduction efforts throughout the global supply chain contributed to absorbing the impact of parts price hikes.
- Deterioration of operation rates in the project execution sector. Need to optimize resource allocation.
- Production efficiency of our manufacturing operations has steadily improved.

▶ **Improve efficiency in product development by shifting resources.**
Maintenance man-hours*
FY21 results **-14%** vs FY19
FY23 target -50% vs FY19

▶ **Project delivery procurement cost reduction Approx. ¥0.9B**
- Procurement cost reduction and global standardization of business processes
- Improvement of global supply chain efficiency

▶ **CCC**
- FY20 149 days ➡ FY21 **142days (-7days)**

* Work related to the maintenance of existing products. Example: a design change due to the discontinuation of a part.

4 Optimize Internal Operations and Transform Mindsets

Strengthen the corporate base

- Strengthen strategic planning functions
- Strengthen internal DX and transform business models
- Cultivate a corporate and organizational culture that encourages entrepreneurial spirit
- Undertake skill transformation and improve engagement of human resources

Main activities

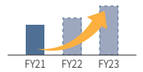
- Allocate resources based on management strategy
- Undertake skill transformation and improve engagement of human resources
- Develop Yokogawa into a DX use case
- Continuously forecast and uncover focus areas and themes

Progress and results Steadily carrying out the optimization of operations to ensure sustained growth ○:Going well

- To foster global cooperation and optimize operations, we are integrating and maintaining individual processes and building new systems. Acceleration of these efforts is needed to achieve long-term growth and improve profitability.
- Although efforts to convert the skills of our human resources and improve their engagement are progressing smoothly, more effort is necessary to promote HR system reforms and transform mindsets.

*1 The denominator is the number of sub-processes defined for all business processes (e.g., marketing, SCM, accounting, etc.), and the numerator is the number of digitized sub-processes operated in a standard global manner.
*2 Ratio of positive responses (4 or 5 on a scale of 1 to 5) for 7 questions related to the formation of sustainable engagement.

▶ Digital process ratio*1
FY21 results **49%**
FY23 target 63%



▶ Providing the proof of concept for IIoT services in minimum three days from customer request - Establishment of Agile Development Methodology and Culture Reform for DX to Improve Speed -

▶ Engagement score rate
GEES (Global Employee Engagement Survey) average of key factors*2 (all employees)
FY21 results **80pts**
FY23 target 81pts

▶ Japan Telework Association
22nd Telework Promotion Award, Award of Excellence

Review of Fiscal Year 2021 and Forecast for Fiscal Year 2022

Review of Fiscal Year 2021

In accordance with the mid-term business plan, "Accelerate Growth 2023," which started in the current fiscal year, orders increased by 18.2% (up 12.4% excluding the impact of the exchange rate), mainly because customers were highly motivated to invest following a full-scale recovery in economic activity from COVID-19, and the impact of foreign exchange rates. Net sales increased by 4.2% (down 0.9% excluding the impact of foreign exchange rate). Operating profit fell 2.9% year on year, mainly due to the reaction to the decrease in subsidies, an increase in new business-related investments, and the recording of an allowance for doubtful accounts associated with the intensifying situation between Russia and Ukraine. Ordinary profit increased 4.8% year on year. Profit attributable to owners of parent increased 10.7% year on year, due to an improvement in equity in earnings of affiliates and a decrease in tax expenses, despite an extraordinary loss related to the transfer of the aviation equipment business.

As a result, net income per share (EPS) growth was 10.7% per year and return on equity (ROE) was 6.6%. Operating cash flow was approximately ¥51.6 billion.

Michiko Nakajima

Head of Accounting & Treasury Headquarters

Forecast for Fiscal Year 2022

The Group's consolidated earnings forecasts for the coming fiscal year (fiscal year 2022) are projecting growth for orders and sales based on an increase in demand that is expected to accompany economic growth and a ramping up of industrial activity among major customers, industrial sectors and regions against the backdrop of a recovery in economic activity, which has been stalled due to the effects of COVID-19. Amid this, orders and sales are expected to decline due to a large-scale contraction of the Russia business as a result of the Russia-Ukraine situation. Looking ahead, the Group expects an increasing move toward alternative supply sources from Russian-produced energy and toward energy security. Orders are expected to recover to a certain degree but the Group expects much time will be required before such projects can turn into concrete business opportunities, and the recovery of sales of fiscal year 2022 will be limited. When these effects are also taken into account, the Group expects orders received and net sales to increase in the next fiscal year. In terms of operating profit, while we expect an impact from surging parts prices and logistics costs, we forecast a year-on-year increase in profit due mainly to increased revenues. Accordingly, increases are expected for ordinary profit, and profit attributable to owners of parent.

Review of Fiscal Year 2021 and Forecast for Fiscal Year 2022

(as of May 10, 2022)

	FY2020 Results (A)	FY2021 Results (B)	FY2022 Forecast (C)	Difference (B-A)	% change (B/A-1)	Difference (C-B)	% change(C/B-1)
Orders (Billions of yen)	355.8	420.5	439.0	+64.7	+18.2%	+18.5	+4.4%
Sales (Billions of yen)	374.2	389.9	407.0	+15.7	+4.2%	+17.1	+4.4%
Operating income (Billions of yen)	31.6	30.7	37.0	(0.9)	(2.9%)	+6.3	+20.6%
ROS (%)	8.4	7.9	9.1	(0.6)pt	—	+1.2pt	—
Ordinary income (Billions of yen)	34.1	35.8	38.0	+1.6	+4.8%	+2.2	+6.3%
Profit attributable to owners of parent (Billions of yen)	19.2	21.3	25.0	+2.1	+10.7%	+3.7	+17.5%
EPS (yen)	72.00	79.73	93.66	+7.73	+10.7%	+13.93	+17.5%
ROE (%)	6.5	6.6	—	+0.1pt	—	—	—
Exchange rate to 1 U.S. dollar (Yen)	106.01	112.94	120.00	+6.93	—	+7.06	—

The forecast for orders and sales includes the following revenue decline assumptions and their recovery, etc.

(Billion ¥)

	Revenue decline assumptions	Recovery, etc.
External environmental risk ・The impact of the Russia - Ukraine crisis ・Shanghai lockdown	Orders Approx. -13.0	Approx. +13.0
	Sales Approx. -13.0	Approx. + 9.0

Downside risk factors against forecasts

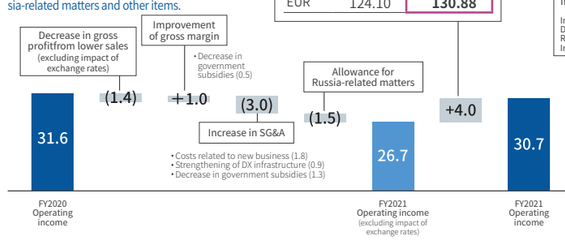
- Supply-demand congestion for semiconductors, etc.: Sales ↘
- Surging parts/resale product prices and logistics costs: Operating income ↘

Factors accounting for increase/decrease in operating income (result)

Operating income decreased due to a decrease in government subsidies, an increase in new business investment, the recording of an allowance for Russia-related matters and other items.

Exchange rates (¥)

	FY2020	FY2021
US$	106.01	112.94
EUR	124.10	130.88

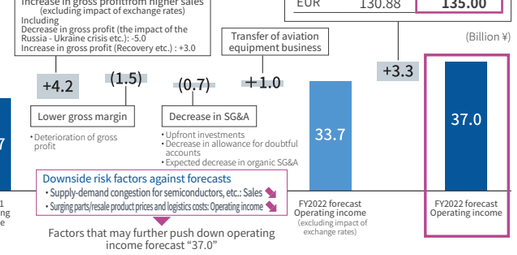


Factors accounting for increase/decrease in operating income (forecast)

Operating income expected to increase year-on-year mainly due to increased sales

Exchange rates (¥)

	FY2021	FY2022 Forecast
US$	112.94	120.00
EUR	130.88	135.00



The Russia-related allowance is an accounting provision based on a certain percentage of assumed risk for Russia-related trade receivables. At this point in time, no specific bad debts have been incurred.

Current Situation

In fiscal year 2021, while the impact of COVID-19, which has continued since 4Q of fiscal year 2019, is finally easing, the situation in Ukraine has worsened, and its impact has spread widely throughout the world, putting pressure on energy supplies. We are also aware that the future is very uncertain amidst the anticipation of an economic crisis and recession due to soaring energy and resource prices and other factors.

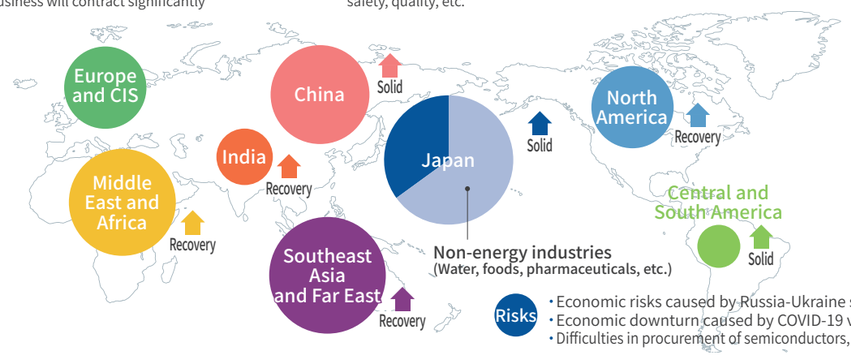
On the other hand, we also expect that countries will move toward alternative supplies of energy and resources. Customers will continue to be highly motivated to invest in our focus areas, such as renewable energy and productivity improvement.

Regions

Middle East: On track to full-scale recovery
China: High growth potential despite impact of Shanghai lockdown
Japan: Continues to be solid
Russia: As long as the Ukraine crisis continues, the business will contract significantly

Industries

Upstream: Energy prices soared. Investment for stable supply is positive.
Renewable: Favorable
Downstream, chemicals: Increased investment in new material/production capacity. Concerns about rising resource prices
Pharma, food, water: Strong investment to upgrade processes and improve productivity, safety, quality, etc.



Risks

- Economic risks caused by Russia-Ukraine situation
- Economic downturn caused by COVID-19 variants
- Difficulties in procurement of semiconductors, resin parts etc.

<Supplement> Supplementary Explanation of the Situation in Russia and Ukraine

Against the current situation in Russia and Ukraine, new business opportunities are anticipated in each region that moves toward alternative supply sources. In the short term, demand is expected to increase as existing facilities are expanded to increase production and projects in progress are accelerated. We will do our best to meet the demands of our customers and contribute to the stabilization of energy and resource supplies while at the same time recovering from the loss of business opportunities in the Russian region. New projects generally take several years in the planning stage, so we are looking to the next fiscal year and beyond for our business opportunities.

AG2023 target / Review of Fiscal Year 2021 and Forecast for Fiscal Year 2022

	AG2023 target	FY2021 results	FY2022 forecast
Order growth	8~10%/year	18.2%/year	11.1%/year*
Sales growth	4~6%/year	4.2%/year	4.3%/year*
ROS	10% (FY2023)	7.9%	9.1%
EPS growth	16~18%/year	10.7%/year	14.1%/year*
ROE	10% (FY2023)	6.6%	7.4%
Sales cash flow	¥140B or more (3 years cumulative)	¥51.6B	¥91.7B
	AG2023 exchange rate (1USD): ¥105	FY2021 average exchange rate (1USD): ¥112.94	FY2022 forecast exchange rate (1USD): ¥120

The business environment is becoming increasingly severe compared to the assumptions made when we formulated of AG2023, due to the current situation in Ukraine and the prolonged difficulty in procuring parts and materials. While increasing our business resilience, we will continue to accelerate our AG2023 efforts and focus on achieving our goals for fiscal year 2023.

* FY2020 to FY2022

Fiscal Year 2021 Results by Segment

<Industrial Automation and Control Business>

Orders increased ¥62.1 billion to ¥391.1 billion (up about ¥43.2 billion excluding the impact of foreign exchange rate), mainly because customers were highly motivated to invest following a full-scale recovery of economic activity from COVID-19, and the impact of foreign exchange rates. Net sales for the industrial automation and control business segment increased by ¥14.5 billion to ¥362.4 billion (down about ¥3.1 billion excluding the impact of foreign exchange rate), mainly due to foreign exchange. Operating profit increased ¥0.4 billion to ¥29.8 billion (down about ¥3.5 billion excluding the impact of foreign exchange rate), due mainly to the pullback from the decline in subsidies and the recording of a provision of allowance for doubtful accounts in relation to the growing severity of the Russia-Ukraine situation.

Orders by region were up from the previous year in most regions. Orders in the Middle East and Africa and North America, which COVID-19 significantly impacted in fiscal year 2020, recovered well. Orders in China also remained strong throughout the year.

Review of Fiscal Year 2021 and Forecast for Fiscal Year 2022

(Billion ¥)

Orders	FY2020 (A)	FY2021 (B)	FY2022 (C)	Difference (B-A)	Difference (C-B)
Japan	112.9	120.2	125.0	+7.3	+4.8
Asia	104.9	134.0	143.0	+29.1	+9.0
(Southeast Asia, Far East)	49.9	59.7	65.0	+9.8	+5.3
(China)	43.1	59.1	61.0	+16.0	+1.9
(India)	11.9	15.2	17.0	+3.3	+1.8
Europe and CIS	40.0	42.1	38.0	+2.1	(4.1)
Middle East and Africa	37.9	51.7	58.0	+13.8	+6.3
North America	22.2	31.8	36.0	+9.6	+4.2
Central and South America	11.0	11.3	13.0	+0.3	+1.7
Outside Japan	216.0	270.9	288.0	+54.9	+17.1
Consolidated	329.0	391.1	413.0	+62.1	+21.9
Exchange rate USD1$=	¥106.01	¥112.94	¥120.00	+6.93	+7.06

Sales	FY2020 (A)	FY2021 (B)	FY2022 (C)	Difference (B-A)	Difference (C-B)
Japan	109.3	109.4	117.5	+0.1	+8.1
Asia	113.6	125.7	133.0	+12.1	+7.3
(Southeast Asia, Far East)	56.4	56.7	60.0	+0.3	+3.3
(China)	44.8	54.6	57.0	+9.8	+2.4
(India)	12.4	14.4	16.0	+2.0	+1.6
Europe and CIS	41.9	43.2	37.0	+1.3	(6.2)
Middle East and Africa	42.0	43.2	51.0	+1.2	+7.8
North America	31.6	30.2	31.0	(1.4)	+0.8
Central and South America	9.5	10.7	12.0	+1.2	+1.3
Outside Japan	238.6	253.0	264.0	+14.4	+11.0
Consolidated	347.8	362.4	381.5	+14.6	+19.1
Exchange rate USD1$=	¥106.01	¥112.94	¥120.00	+6.93	+7.06

The FY2020 figures have been changed based on the new segmentation.

Orders by industry are shown in the Energy & Sustainability, Materials, and Life sub-segments.

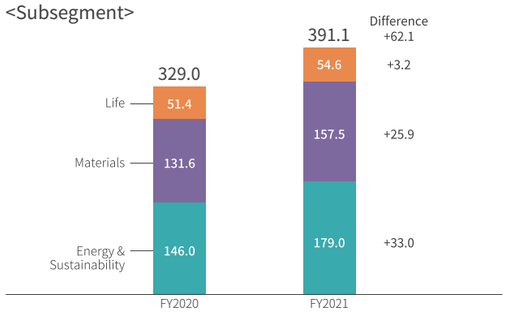
The Energy & Sustainability segment increased ¥33 billion YoY (+23%). Excluding the impact of foreign exchange rates, sales grew by 16.3%. Downstream, which has been active since the beginning of the year, increased ¥17.1 billion YoY (+28%). Excluding the impact of foreign exchange rates, sales grew by 21%. Although we were a little concerned about the slow start of Upstream, it has recovered to the same level as the previous year for the entire year.

The Materials segment increased ¥25.9 billion YoY (+20%). Excluding the impact of foreign exchange, the growth was 15%. In addition to significant growth in Chemical in Japan and outside Japan, semiconductor-related customers continued to invest actively.

The Life segment increased by ¥3.2 billion (+6%). Excluding the impact of foreign exchange, the growth was 4.4%. The growth rate is relatively low due to a smaller decline in fiscal year 2020 from the impact of COVID-19 compared to other sub-segments. In overseas markets such as China, the Middle East, and India, we have received large-scale orders in supplying sewage. Food and pharmaceutical-related businesses continue to be strong.

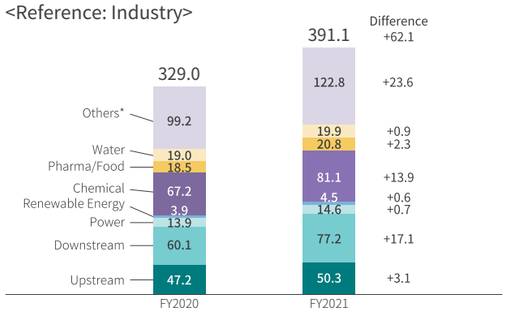
Fiscal Year 2021 Orders by Subsegment

<Subsegment>



*The FY2020 figures have been changed based on the new segmentation.

<Reference: Industry>



*Electrical & electronics, iron & steel, pulp & paper, etc.

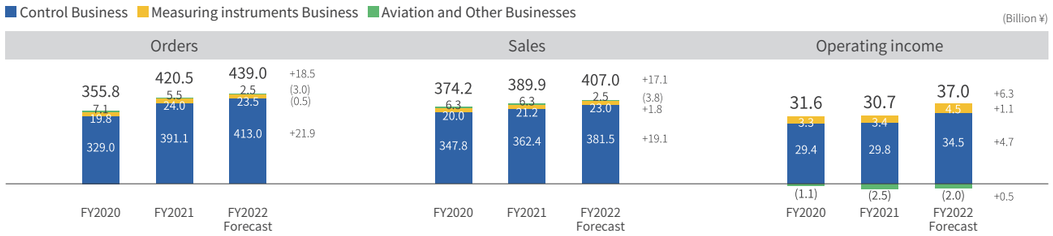
<Measuring instruments Business>

In the measuring instruments business, net sales increased ¥1.2 billion year on year to ¥21.2 billion, mainly due to foreign exchange fluctuations, but operating profit increased ¥0.1 billion year on year to ¥3.4 billion mainly due to changes in the model mix.

<Aviation and Other Businesses>

In the aviation and other businesses, net sales were ¥6.3 billion, about the same as the previous year, while the operating loss increased ¥1.4 billion year on year to ¥2.5 billion, mainly due to an increase in selling, general and administrative expenses for new businesses.

Segment-by-Segment Trends for Orders, Net Sales, and Operating Income

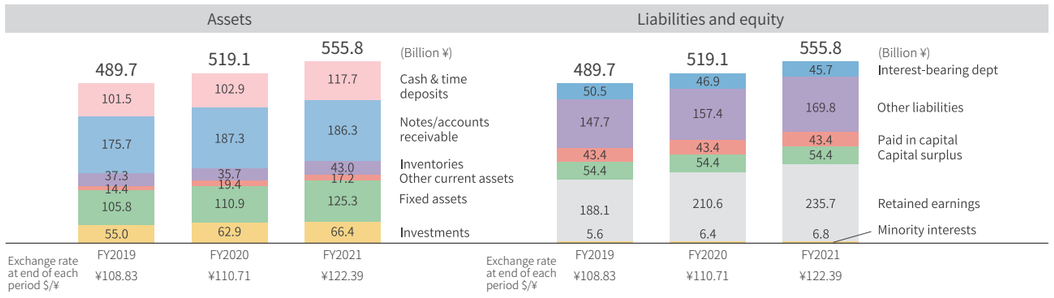


*Control/Measuring instruments: The FY20 figures have been changed based on the new segmentation introduced in FY21. Impact of changes to business segmentation (Measurement → Control): Orders +¥5.9 billion, sales +¥5.7 billion, operating income -¥2.1 billion

New Businesses and Others: Due to the transfer of the aviation equipment business, it will be changed to "New Businesses and Others" from FY2022.

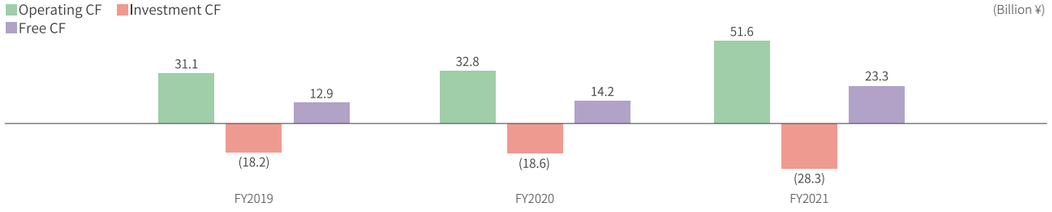
Balance Sheet

Total assets at the end of fiscal year 2021 were up ¥36.7 billion year on year to ¥555.8 billion, mainly due to increases in cash and deposits and goodwill. In addition, total liabilities increased ¥11.1 billion year on year to ¥215.4 billion, due mainly to increases in contract liabilities and accounts payable - other. Net assets at the end of fiscal year 2021 increased ¥25.5 billion year on year to ¥340.3 billion, due mainly to the recognition of profit attributable to owners of parent and an increase in foreign currency translation adjustment. As a result, the shareholders' equity ratio was 60.0%, up 0.6 percentage points from the end of the previous fiscal year.



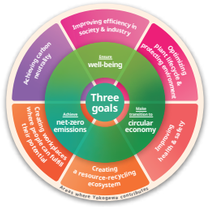
Cash Flow

The balance of cash and cash equivalents at the end of fiscal year 2021 increased ¥14.3 billion year on year to ¥115.5 billion. The cash flow from operating activities in the fiscal year under review was a net inflow of ¥51.6 billion (up ¥18.8 billion from the previous fiscal year), reflecting the recording of profit before income taxes, depreciation, and a decrease in trade receivables. The cash flow from investing activities was a net outflow of ¥28.3 billion (up ¥9.7 billion from the previous fiscal year), mainly reflecting the purchase of property, plant and equipment, intangible assets, and shares of subsidiaries resulting in a change in the scope of consolidation. The cash flow from financing activities was a net outflow of ¥16.2 billion (down ¥0.9 billion from the previous fiscal year), mainly due to dividends paid.



Sustainability Indicators and Targets

We have established long-term indicators to measure the degree of contribution to society (social impact indicators) and medium-term indicators to measure the growth of businesses that contribute to society (business activity indicators) under AG2023. We aim to achieve social impact indicators through activities in line with the Business Activity Indicators. For each of the business activity indicators, the person responsible for execution at the executive level is responsible for incorporating the activities to achieve the target into the members of each organization, and through this PDCA cycle, contribution and growth will be accelerated.



Social Impact Indicators

The following table shows the indicators and targets for 2030, from a social impact point of view, for six contribution areas.

Contribution area	SDGs	Indicator	FY30 (FY40) target	FY21 actual	
Achieving carbon neutrality		CO_2 emissions control amount through customers (accum. from FY18)	1 billion t-CO_2 (50% or more from renewable energy and new technologies)	0.33 billion t-CO_2 (0.22 billion t- from renewable energy)	The contribution to wind power generation grew significantly.
		GHG emissions (Scope1,2) (base year FY19)	50% reduction by FY30 100% reduction by FY40	10.5% reduction	Renewable energy procurement is expanded.
		GHG emissions (Scope3) (base year FY19)	30% reduction by FY30	12.7% reduction	The sales volume of hardware products decreased.
Improving efficiency in society & industry		Economic value created by improving customer productivity efficiency	¥2 trillion	¥160 billion	We are expanding our production and energy efficiency business.
Optimizing plant lifecycle & protecting environment		Number of plants/factories where Yokogawa has contributed to sustainable operations	20,000 plants	5,322 factories	Life cycle support contributes to sustainable operations.
Improving health & safety		Total number of people whose health & safety have been enhanced through solutions provided by Yokogawa's customers	100 million people	37.17 million people	Expanding our water environment solution business overseas
Creating a resource-recycling ecosystem		Status of the new businesses launched that contribute to the resource recycling system	Establishment of two or more new resource recycling system business	Yokogawa Bio Frontier Inc. is developing a biomass material business, building a resource-recycling system.	
Creating workplaces where people can fulfill their potential		Engagement to enhance employee well-being	At a level comparable to other leading companies	Engagement survey score 80%	By implementing measures based on survey results, scores improved in all categories.
		Achievements in human resource development and capacity development for transformation	Advancing employee's future skill set	We are promoting human resource development that leads to business growth, such as DX human resource development initiatives.	
		Achievement level of diversity and inclusion	Proportion of women in managerial positions 20%	12.60%	We are working to expand the ratio based on local conditions.
			Enhanced diversity at senior decision-making levels	Examining the definition of diversity needed for business growth, and looking at possibly setting a target.	

*Products and services purchased (Category 1) and using of sold products (Category 11) are covered.

Business Activity Indicators

The following table shows the business activity indicators and targets for 2023. Their achievement will contribute to the achievement of the targets that have been set for the social impact indicators.

Contribution area	Focus area*1		Indicator	FY23 target	FY21 actual
Achieving carbon neutrality	Supporting power generation by renewable energy	■ ◆	CO_2 emissions control amount through customers (accum. from FY18)	500 million t-CO_2	330 million t-CO_2
	Supporting distribution, storage, and utilization of renewable energy	■ ■ ◆	Sales growth rate of measurement instrument to renewable energy customers (base year FY20)	2.2 times	1.7 times
			Growth rate of number of units shipped of battery electrode thickness gauge (base year FY20)	1.7 times	1.6 times
	(within Yokogawa) GHG reduction at Yokogawa sites and in supply chain	◎	GHG emissions (Scope1,2) (base year FY19)	10% reduction	10.5% reduction
			GHG emissions (Scope3*2) (base year FY19)	10% reduction	12.7% reduction
Improving efficiency in society & industry	Smart manufacturing business, consultation, ERP, MES, EMS	■ ■	Order intake growth rate of production/energy efficiency business (base year FY20)	1.3 times	1.1 times
	Value chain optimization for pharmaceutical and food customers (MES, LIMS, EQMS)	■	Order intake growth rate of pharmaceutical and food value chain optimization business (base year FY20)	1.3 times	1times
	(within Yokogawa) Operational optimization	◎	Reduction of business operation hours by automation (base year FY18)	300,000 hours reduction	249,249 hours reduction
Optimizing plant lifecycle & protecting environment	Supporting long-term optimal operation solutions of the plant	■ ■	Number of life cycle support contracted plants	6,000 plants	5,322 plants
			Order growth rate of number of wireless asset health monitoring sensor units (base year FY20)	3.2 times	1.1 times
			Number of equipment maintenance management system contract licenses	8,500 licenses	7,360 licenses
	Supporting reduction of environmental footprint of the plant	■ ■ ■	Order intake growth rate of process analyzer (base year FY20)	1.3 times	1.1 times
	(within Yokogawa) Reduction of Yokogawa's environmental footprint (water, biodiversity)	◎	Water withdrawal amount at Yokogawa sites (base year FY19)	4% reduction	17% reduction
Improving health & safety	Supporting safety and security of plant and workers	■ ■	Number of safety instrumented systems provided	157 systems	158 systems
			Number of plant operator training systems provided	30 systems	19 systems
	Life science business	■	Sales growth rate of drug discovery development support products (base year FY20)	2.5 times	1 times
	Supporting lifeline, water and sewage businesses	■	Number of solutions provided for water environment improvement (excluding Japan)	90 solutions	87 solutions
	(within Yokogawa) Occupational health and safety of workers at Yokogawa, respect for human rights	◎	ISO45001 certification acquisition record	Acquisition at major companies (12 companies)	Acquisition at major companies (9 companies)
Creating a resource-recycling ecosystem	Contributing to functional chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses	■ ★	Order intake growth rate for specialty & fine chemical industry (base year FY20)	1.6 times	1.2 times
Creating workplaces where people can fulfill their potential	(within Yokogawa) Employee well-being & engagement	◎	Engagement survey score	81%	80%
	(within Yokogawa) People capability development for change	◎	Training hour per person	40 hour per year per person	28 hour *3
	(within Yokogawa) Promotion of diversity & inclusion	◎	Female manager ratio	12.5%	12.60%
			Employment rate of disabled persons (Japan)	2.50%	2.46%

*1 Symbols indicating "business segments" and " foundation for business" corresponding to focus areas
■: Energy & Sustainability、■: Materials、■: Life、◆: Measuring instruments、★: New businesses and other、◎: Foundation for Business
*2 Products and services purchased (Category 1) and using of sold products (Category 11) are covered.
*3 Yokogawa Electric Corporation

Special Feature Responding to Climate Change

Climate change has become an urgent issue that the world must come together to address. Yokogawa has set forth Net-zero emissions as the shape of society it aims to bring about by 2050, and "achieving carbon neutrality" is one of the six areas of contribution set out in AG2023. Recognizing the reduction of GHG emissions and the shift to cheap, reliable and sustainable energy as key issues, we not only reduce GHG emissions from our own operations, but also contribute to the spread of renewable energy and the efficiency of energy use through our operations.

Support for TCFD

In an effort to proactively address the challenges of climate change and prepare for the future, in February 2019 Yokogawa has expressed its support for the recommendations made by the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board (FSB) to promote the disclosure of climate-related financial information.

Governance

The Board of Directors establishes a basic policy for responding to climate change and a basic policy for developing risk and opportunity management systems, and monitors and supervises the effective operation of these systems and the appropriate response to sustainability issues. We also consider climate-related impacts when discussing business strategies and plans.

The management team, whose top decision-making body is the Management Board, considers the impact of climate change in terms of both risks and opportunities when developing business strategies and plans. In fiscal year 2022, we established the Sustainability Committee, which is chaired by the president and serves as an advisory body to the Management Board, to conduct materiality analysis covering various issues related to climate change and GHG emissions, as well as to discuss the risks and opportunities of climate change. We have set and are promoting climate change targets as sustainability targets for AG2023, including carbon neutrality for business sites in 2040. These situations are regularly reported to the Board of Directors.

Strategy

Yokogawa operates with manufacturing customers in industries such as energy and chemicals that have a significant impact on GHG emissions. Amid dramatic changes in the business environment, customers are shifting to low-carbon businesses including renewable energy and producing raw materials with a low environmental impact, such as biomaterials, and this is expanding our business opportunities.

Under the long-term business framework, we aim to achieve growth through the provision of shared social values, such as measures to address climate change, and under AG2023, we are working to expand our business by considering the transformation of our customers' business strategies in light of the growth of the renewable energy-related market and the issue of climate change as a major business opportunity. We help our customers to reduce there GHG emissions by providing solutions that improve the overall efficiency and achieve stable plant operations and save energy.

In fiscal year 2022, we delved into and organized risks and opportunities related to climate change by business segment and risk type.

Major opportunities for climate change

Business segments	key opportunities	Direction of response
Energy & Sustainability Business	Energy management that enables optimal operation of the entire energy supply chain, including renewable energy	・Expand the range of solutions provided ・Promote partnerships with customers and related organizations ・Accelerate business development using M&A and government support schemes
	Leveraging knowledge and experience in various industries to help customers decarbonize	
Materials Business	Providing GHG reduction and resource recycling solutions from the customer's site to the management level and throughout the supply chain	・Expand solutions portfolio ・Strengthen ability to provide solutions globally
Life Business	Supporting productivity improvements across the value chain against the backdrop of energy reduction and efficiency needs in the pharmaceutical and food industries	・Accelerate overseas business development and new product development ・Continue M&A and alliance activities
	Providing solutions in the water sector against the backdrop of the increasing need for a stable water supply and quality improvement	・Promote digital transformation through genetic analysis and measurement technology developed through scientific instruments
Measuring Instruments Business	Helping power suppliers switch from fossil fuels to renewable energy	・Further enhance high-precision broadband power measurement technology ・Offer more solutions for the renewable energy market

Key risks of climate change

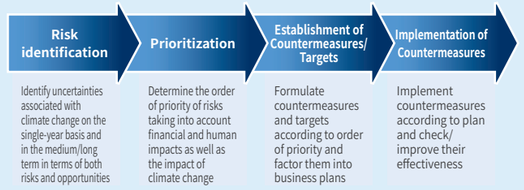
Type	Key risks	Direction of response
Transition Risk	Higher costs due to the introduction of carbon taxes and changes in legislation	・Undertake planning and initiatives to achieve GHG reduction targets ・Execute ICP
	Loss of business opportunities due to delays in developing technologies suitable for a decarbonized society and in responding to changes in the market environment	・Expand the solution portfolio using domain knowledge and DX ・Enhance the level of environmental friendliness of products ・Promote M&A and alliances to acquire technology
Physical Risks	Business impacts of social disruption caused by climate disasters, as well as business damage and supply chain impacts	・Collect information and working with external organizations to prevent, avoid, and reduce impacts ・Thoroughly manage suppliers and decentralization of suppliers ・Continuously update the Business Continuity Plan (BCP)

Risk Management System

In order to achieve effective risk management within the Group, the Risk Management Committee, chaired by the President and Representative Director with overall responsibility for risk management, has been established. In addition, when risks become apparent and a crisis occurs that could have a significant impact on the management of the Group, the Crisis Management Committee, chaired by the President and Chief Executive Officer, deals with the situation.

Risk is defined as uncertainty that affects the Group's corporate value in areas such as the external environment, including climate change, strategy, quality, the environment, health and safety, crisis management and corporate ethics, and is classified and managed in terms of business opportunities and compliance and crisis events under the basic policy of integrally managing internal and external uncertainties relating to the business to maintain and increase the corporate value of the Yokogawa Group.

Macroeconomic trends and large-scale disasters such as floods caused by climate change are assessed as common risks by all organizations, and the results are factored into the selection of priority management risks along with the assessment of individual risks. Each organization assesses the risks associated with single-year and medium- to long-term climate change, and implements measures such as risk reduction.

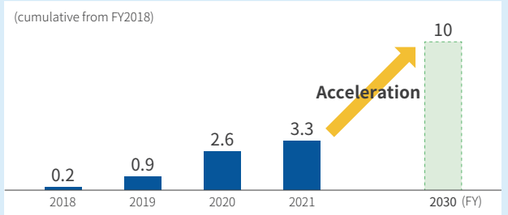


Indicators, Targets and Performance

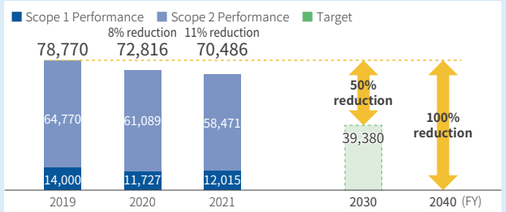
We set levels of CO_2 emissions control based on 1 billion t-CO_2 of customer emissions (fiscal year 2018 to fiscal year 2030) as an indicator in business. We compare CO_2 emissions from our customers' renewable energy generation with averages from fossil fuel generation, and record the difference as results.

Based on the methodology of the GHG protocol, Scope 1, Scope 2 and Scope 3 targets are set as indicators for business sites, and emissions are calculated. In Scope 1 and 2, we aim to reduce emissions 50% from fiscal year 2019 levels by fiscal year 2030, and to make our business sites carbon neutral by 2040. For Scope 3 (categories 1 and 11), we aim to reduce emissions 30% by fiscal year 2030 compared to fiscal year 2019 levels. These targets are in line with the Parisian Agreement's goal of limiting global warming to 1.5 degrees Celsius above pre-industrial levels of GHG emissions, and as of August 2022, our company is in the process of applying for SBT (Science Based Targets) approval.

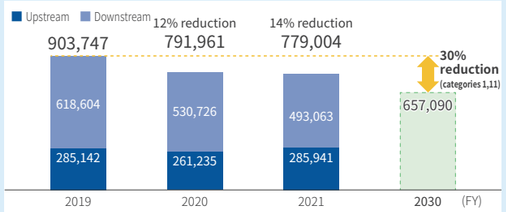
CO_2 emissions control amount through customers (million t-CO_2)



GHG emissions (Scope1,2) (t-CO_2e)



Supply chain GHG emissions (Scope3) (t-CO_2e)



In fiscal year 2021, our customer business had avoided CO_2 emissions by a cumulative total of 330 million tons since fiscal year 2018.

GHG emissions (Scopes 1 and 2) were reduced by 11% from the fiscal 2019 level, as a result of efforts to reduce energy use and upgrade equipment with lower GHG emissions, in addition to curbing the impact of COVID-19.

We also reduced our supply chain greenhouse gas emissions (Scope 3) by 14% compared to fiscal year 2019.

We will accelerate our efforts to achieve these goals.

Introduction of Internal Carbon Pricing (ICP)

In order to promote economically rational GHG reduction measures, we began introducing ICP in fiscal year 2022. For the overall Group, we set carbon prices in the first year targeting the procurement of renewable energy power, which will contribute significantly to the reduction of Scope 2. ICP policies and carbon prices are discussed by the Sustainability Committee and determined by the Management Board. Going forward, we will gradually apply ICP to Scope 1 and Scope 3, as well as to business planning.

For further information, please see our Sustainability Report
https://www.yokogawa.com/about/sustainability/report/

Review of Digital Transformation Strategy

Digital Transformation Certification

Message from the Head of the Digital Strategy Headquarters

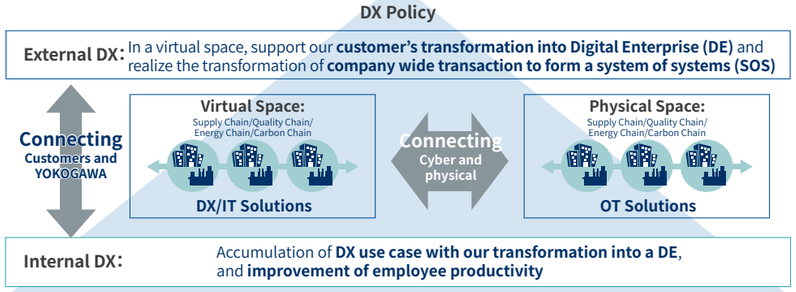
Yukihiro Funyu
Head of Digital Strategy Headquarters
Head of DX-Platform Center, Digital Solutions Headquarters

Yokogawa's DX activities started in April 2018 under TF2020, the previous mid-term business plan, and we have since promoted internal DX activities to improve employee productivity and external DX activities to expand the provision of digital services that add customer value. During those first three years, we strived to globalize and optimize our IT infrastructure, security measures, applications, and data (DX1.0). Under AG2023, the new mid-term business plan, we are implementing DX to improve customer, partner, and employee experience (DX2.0). For external DX, we have been actively developing cloud applications based on our operational technology (OT) that enable us to shift to a recurring business model. In addition to moving conventional applications to the cloud and shifting to the recurring model, we have also released new IIoT, AI/ML, and OT security services to Yokogawa Cloud, our application platform. As a result of these DX activities, in April 2021 Yokogawa was designated a Digital Transformation Certified Company by the Ministry of Economy, Trade and Industry (METI), and in June 2022 we were listed as a DX Featured Company in the DX Survey 2022 organized by METI and the Tokyo Stock Exchange Inc. (TSE). We will continue to accelerate our efforts to implement DX in the Yokogawa Group and become a use-case for manufacturing DX.

DX Policy

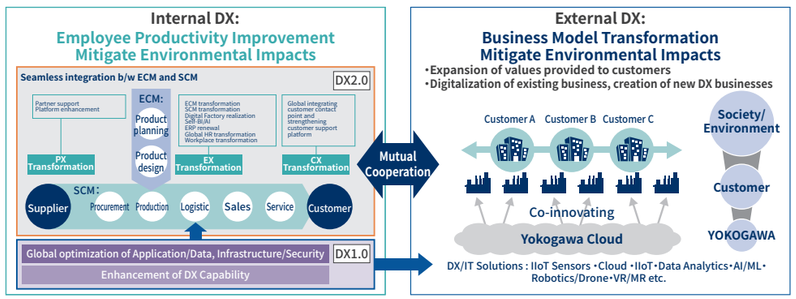
To realize Yokogawa's Purpose, we are promoting DX activities in two areas: Internal DX, which focuses on improving employee productivity, and External DX, which supports customers' transition to a digital enterprise and System of Systems.

Yokogawa's Purpose: Utilizing our ability to measure and connect, we fulfill our responsibility for the future of our planet.



DX Strategy (FY2021 to FY2023)

For Internal DX, we are implementing DX to improve the experience from the three perspectives of customers, partners, and employees based on the global IT infrastructure developed in the DX1.0 implementation phase. Meanwhile, for External DX, our goal is to connect digitally with customers by leveraging our large installed base and providing attractive cloud applications on the Yokogawa Cloud, our application platform.



PX: Partner Experience, EX:Employee Experience, CX: Customer Experience, ECM: Engineering Chain Management, SCM: Supply Chain Management

Goals and Results

DX-related Order Ratio	FY20	2.0%	
	FY21	2.8%	
	FY23	**4.0%**	
Digital Process Ratio	FY20	Approx. 40%	
	FY21	42%	
	FY23	**63%**	
IT Infra Environmental Impact Reduction Ratio	FY18	100%	
	FY21	74%	
	FY23	**65%**	
Cloud Ratio	FY20	61%	
	FY21	61%	
	FY23	**64%**	
Agile Project Ratio	FY20	19%	
	FY21	54%	
	FY23	**35%**	
DX Human Resources Ratio	FY20	20%	
	FY21	31%	
	FY23	**50%**	

*DX-related order ratio: Ratio of DX-related project orders to total orders
*Digital process ratio: Ratio of the number of processes utilizing global digitized platforms to the number of all processes defined for each business process
*IT Infra environmental impact reduction ratio: Ratio of power consumption reduced by the shift to cloud computing, based on FY2018
*Cloud ratio: Ratio of the number of cloud servers to the total number of servers
*Agile project ratio: Ratio of IT projects utilizing an agile approach to the total number of IT projects
*DX Human Resources Ratio: Ratio of the number of talent with digital skills to the number of All talent

Progress of DX-Related KPIs in Fiscal Year 2021

Fiscal year 2021 was the first year of our new mid-term business plan, AG2023, and the newly established DX strategy. The DX-related order ratio, an essential indicator of External DX, improved significantly. The IT infrastructure environmental impact reduction ratio and the agile project ratio made significant progress thanks to the penetration of the cloud and agile culture. On the other hand, the digital process ratio, the cloud ratio, and the DX human resources ratio made less progress than we expected. To improve the three items where progress has been slow, we are taking the following measures: For the digital process ratio, we are introducing several global platforms in fiscal year 2022. For the cloud ratio, we have already made considerable progress with DX1.0 and as a result of the steady progress in the introduction of the cloud environment, we are just one step away from achieving our goal. For the DX human resources ratio, we expected significant improvement in fiscal year 2022 through the DX talent training programs we started in Fiscal Year 2021.

Introduction of New DX Services

In June 2022, we launched OpreX Asset Health Insights, a cloud-based asset management and monitoring service that collects, refines, and aggregates operational data from distributed assets using IoT sensors. Asset Health Insights works on Yokogawa Cloud and features artificial intelligence (AI) and machine learning (ML) analytics.

In March 2022, Yokogawa and ENEOS Material Corporation (formerly JSR Corporation elastomer business unit) achieved autonomous control of a chemical plant by AI for 35 days, a world first. Moreover, in May 2022, Yokogawa and NTT DOCOMO, Inc. successfully conducted a proof-of-concept test (PoC) of remote-control technology for industrial processing. The PoC test uses an autonomous control AI in a cloud environment, the Factorial Kernel Dynamic Policy Programming (FKDPP) algorithm developed by Yokogawa and the Nara Institute of Science and Technology, via the fifth generation(5G) mobile communications network provided by NTT DOCOMO Inc.

These have enabled us to make tangible progress toward IA2IA/Smart Manufacturing.

Progress in Strategic Alliances with DX/IT Companies

AG2023, our new mid-term business plan is committed to promoting OT/IT convergence. Toward OT/IT convergence, we collaborate with DX/IT partners to enhance our IT capabilities while leveraging our OT capabilities, which is one of our strengths. In October 2021, we announced a business partnership with NTT Communications Corporation for the joint development and provision of shared-use OT cloud services. In the same month, we announced an investment in Web Synergies, an IT/OT solutions provider. In June 2022, we announced an investment in Waylay, a leading enterprise software company in Belgium. We will continue to collaborate actively with DX/IT companies toward OT/IT convergence.

First Selected by the Ministry of Economy, Trade and Industry and Tokyo Stock Exchange as one of the "DX Featured Companies 2022"

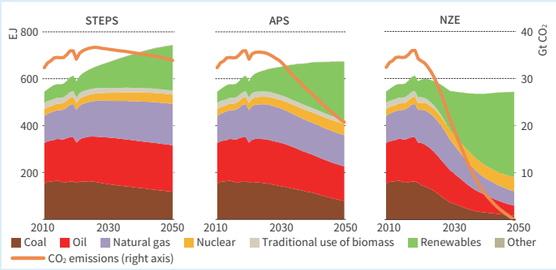
"Digital Transformation Certified Companies" are selected by the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange Inc. (TSE) as part of the "DX stocks" selection process. "DX stocks" are selected from among TSE-listed companies as those that improve corporate value by taking advantage of digital technologies. In addition, companies with outstanding initiatives are selected as "Digital Transformation Certified Companies." In 2022, fifteen companies were selected, including Yokogawa.

See page 42 for autonomous control by AI, a world first, and Yokogawa Digital Corp., which supports DX in manufacturing.

Special Feature Creating Business Opportunities / Solving Customer Challenges in the Energy Transition

International Energy Agency (IEA) Executive Director Fatih Birol says that to reach net zero emissions by 2050, we need more than triple investment in clean energy projects and infrastructure over the next ten years.

Total Primary Energy Supply by Fuel and Scenario



STEPS: Stated Policies Scenario, which reflects current policy settings and is announced by governments around the world.
APS: Announced Pledges Scenario, which assumes all climate commitments made by governments around the world, including those not yet implemented.
NZE: Net Zero Emissions by 2050 Scenario

Source: IEA World Energy Outlook 2021

- STEPS Scenario: almost all of the net growth in energy demand to 2050 is met by low-emissions sources, but annual emissions remain unchanged, with global average temperatures continuing to rise to reach 2.6°C above pre-industrial levels in 2100.
- APS Scenario: Demand for fossil fuels peaks by 2025, and global CO_2 emissions fall by 40% by 2050. All sectors see a decline, with the electricity sector delivering by far the largest. The global average temperature rise in 2100 is held at around 2.1°C. Even under this scenario, it would be difficult to achieve net zero CO_2 emissions or the Paris Agreement.

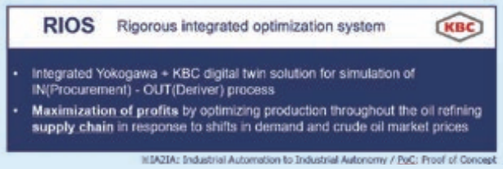
Further reductions in CO_2 emissions over the next ten years and beyond 2030 are needed to close the gap between the current commitments and the 1.5 °C scenario

Source: JETRO Biz News (October 14, 2021)

Yokogawa's Initiatives for Solution Business

Customers in the energy-related industry are addressing the energy transition to realize a carbon-neutral society while fulfilling their product supply responsibilities to the market. As a trusted partner, Yokogawa provides solutions to meet that challenge together with our customers.

■ Use of Fossil Fuels Promotion of Efficient



We successfully implemented proof-of-concept (PoC) of the Rigorous Integrated Optimization System "RIOS," which maximizes profits by optimizing production throughout the oil refining supply chain.

RIOS is a comprehensive digital twin solution from YOKOGAWA and KBC to optimize the entire oil refining production process by simulating fluctuating demand and crude oil prices. This enables us to maximize our customers' profits and is one of the challenges for Yokogawa in establishing a recurring business model of performance-based compensation.

■ Low-Emission Energy Natural gas including LNG

In pursuit of economic growth and energy transition, natural gas is becoming increasingly important, with the European Union approving a policy (July 2022) that positions natural gas as a green energy source.

Leveraging Yokogawa's many references throughout the entire LNG value chain, including Liquefaction, LNG Carrier, Regasification, Storage, and Delivery, we will provide both the CAPEX business and the OPEX business with solutions for improving productivity, safety, and asset monitoring.

■ Renewable Energy Strengthen initiatives related to the hydrogen supply chain

Toward the coming hydrogen society, we have established an in-house industry-wide project team to identify Yokogawa's core values in the hydrogen supply chain, including hydrogen production and delivery.

Special Feature Yokogawa's Renewable Energy Business

Our energy-related customers are accelerating their transformation into comprehensive energy companies and expanding their investments in low-carbon businesses. Yokogawa is also accelerating our energy transition.

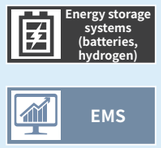
Go Iwata Energy & Sustainability Business Headquarters
Power & Water Business Center

Yokogawa's Focus on Renewable Energy

Global demand for solar and wind power is expected to increase further. Yokogawa has a strong track record in biomass, geothermal, and CSP power projects, and these are fields where our industrial automation products and accumulated knowledge are assets. To expand our business in the high-growth solar and wind power fields, we will widen our focus beyond the current range of IA solutions to cover the management of business operations, including asset and energy management, data-based planning, and asset lifecycle optimization.

*1 WTE: Waste to energy

Yokogawa's Contribution Field



In renewable energy sectors such as solar and wind, the output varies greatly depending on the time of day, weather conditions, and seasons, so the ability to accurately predict and manage these factors is essential. In terms of capacity, renewable energy facilities are much smaller than thermal and nuclear power plants, so a larger number of these facilities is required. It is also important to control supply and demand. To ensure a stable supply of power from such facilities, we provide not only power generation products and solutions but also energy management systems (EMS*), battery energy storage systems (BESS), and hydrogen energy storage systems.

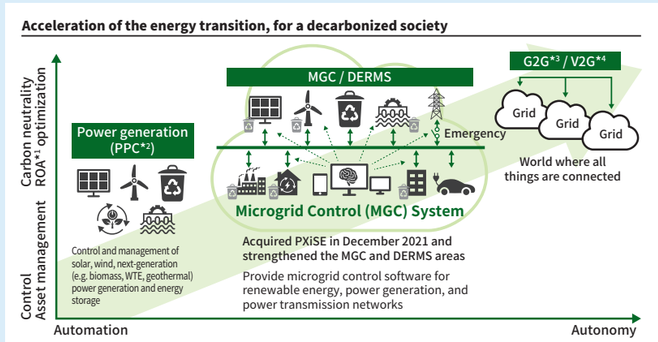
*2 VRE: Variable renewable energy *3 EMS: Energy Management System

Partnerships to Grow Our Business

Renewable energy covers a wide variety of fields, so we expand our business by tapping the knowledge of outside experts and incorporating that into the solutions we provide.

As more power generation facilities and energy storage systems are installed in offices and homes, conventional unidirectional energy supply will become increasingly bidirectional. To roll out distributed energy resource management systems (DERMS) and microgrid control (MGC) systems that can manage and control large numbers of facilities and intricately interconnected power grids, Yokogawa acquired PXiSE Energy Solutions, a company with related technologies, in December 2021.

Expanding the renewable energy market will accelerate the move to "system of systems," where multiple discrete facilities and systems are inter-connected. By entering the MGC and DERMS markets, Yokogawa will position itself to make a greater contribution to an increasingly interconnected world.



*1 Return on assets *2 Power plant controls *3 Grid-to-Grid *4 Vehicle-to-Grid

Case Study

In a World First, Using AI to Autonomously Control a Chemical Plant for 35 Consecutive Days

- A Great Step Toward Realizing Customers' Industrial Autonomy -

ENEOS Materials Corporation (formerly JSR Corporation's elastomer business unit) and Yokogawa have succeeded in using reinforcement learning AI to autonomously control a process at an ENEOS Materials chemical plant for 35 days, a world first.

Hiroaki Kanokogi
President & CEO, Yokogawa Digital Corporation
DX-Platform Center, Digital Solutions Headquarters, Yokogawa Electric Corporation

What Yokogawa Achieved

This test confirmed that reinforcement learning AI can be safely applied in an actual plant, and demonstrated that this technology can control operations that have been beyond the capabilities of existing control methods and have up to now necessitated the manual operation of control valves based on the judgments of plant personnel. The initiative described here was selected for the 2020 Projects for the Promotion of Advanced Industrial Safety subsidy program of the Japanese Ministry of Economy, Trade and Industry.

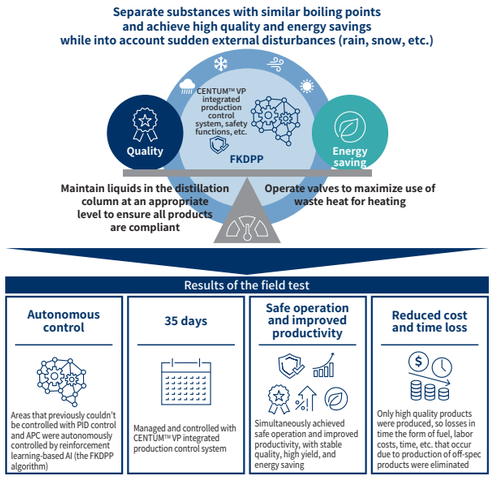
In this field test, the AI solution successfully dealt with the complex conditions needed to ensure product quality and maintain liquids in the distillation column at an appropriate level while making maximum possible use of waste heat as a heat source. In so doing it stabilized quality, achieved high yield*1, and saved energy. While rain, snow, and other weather conditions were significant factors that could disrupt the control state by causing sudden changes in the atmospheric temperature, the products that were produced met rigorous standards and have since been shipped. Furthermore, as only good quality products were created, fuel, labor, time, and other losses that occur when off-spec products are produced were all eliminated.

Distillation columns at the ENEOS Materials corporation chemical plant

*1 Yield: The volume of the target substance that is actually obtained from raw materials through the refinement process

AI "FKDPP" at Yokogawa and Nara Institute of Science and Technology

The AI used in this control experiment, the Factorial Kernel Dynamic Policy Programming (FKDPP) protocol, was jointly developed by Yokogawa and the Nara Institute of Science and Technology (NAIST) in 2018. It can be used in areas where automation previously was not possible with conventional control methods and its strengths include being able to deal with conflicting targets such as the need for both high quality and energy savings.



Toward Realizing Customers' Industrial Autonomy

The present reality is that many aspects of plant control involve complexities that require the knowhow of skilled operators. A big challenge is how to make the transition to autonomous control while maintaining a high level of safety, and the results of this successful field test provide clues for a solution.

Yokogawa will continue these efforts with its partners to co-create solutions that benefit its customers.

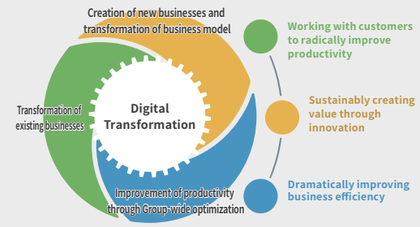
Yokogawa Digital Corporation Established to Support DX in Manufacturing

In July 2022, Yokogawa Digital Corporation was established to support DX in manufacturing to achieve global total optimization, providing integrated services from management consulting to cloud system implementation, operation and maintenance.

With the COVID-19 pandemic, responding to supply chain issues, contributing to SDGs, and practicing ESG management have all become necessary, and companies must optimize their entire business activities from management to the field, including the supply chain to enhance competitiveness and contribute to the realization of a sustainable society. To achieve this, DX, including the use of AI, is essential. Yokogawa will use its knowledge and know-how in both the OT and IT fields to support its customers' DX efforts, including the practical application of advanced technologies such as the examples above, and will work to realize integrated global management of their entire businesses.

Reference

Progress of Mid-Term Business Plan

	Transformation 2017 "TF2017" 2015~2017	Transformation 2020 "TF2020" 2018~2020
Vision	Establishing a foundation for growth by transforming our business structure	Creating opportunity and consolidating the foundation for growth
Business environment (initially)	• Expansion of energy demand in line with growth of emerging economies • Technology innovations in oil and gas development and in manufacturing processes • ICT advancement and penetration into industrial base • Oil price volatility • Concerns over intensifying competition	• **Market downturn, intensifying competition** Economic slowdown beyond expectation including stagnant crude oil prices and decelerating growth in emerging countries • **Declining investment by our customers** CAPEX stagnation ⇔ OPEX firm growth • **Our existing businesses facing an uphill struggle** High dependency on energy-related business, leveling-off sales and volume • **Reforming growth model** Opportunities for growth brought by innovations in digital technology, SDGs, and other changes in our external environment
Strategy	**Focusing on customers**: • Develop business by pursuing strategic partnerships with customers • Expand our business with our current customer base **Creating new value**: • ICT advances are leading to new business opportunities • Co-create value across companies and industries by improving efficiency and achieving overall optimization **Becoming a highly efficient global company**: • Globally optimize all functions and operations • Be more profitable than our competitors	
KPIs and targets		
Issues	• Drastically improve profitability to build a structure that is resistant to fluctuations in trade volume, and accelerate transformation. • In addition to the transformations set out in TF2017, drastic business restructuring is needed for mid-to long-term improvement in corporate value in a changing business environment.	• Responding to changing customer needs "leading customer business transformation" Provide solutions that utilize digital technologies such as DX amid expanding needs for solutions with the themes of productivity improvement, remote control and safety. • Cost structure reform and cost efficiency improvement Continue to work on the measures and reap the results. Break away from the worker-proportional business style. • Transformation of human resources Shift resources from existing fields to innovation fields and strengthen the capabilities of the shifted human resources amid the increasing importance of innovative solutions due to the development of digital technology and changing customer needs.

	Targets	Results
ROE	11% or more	8.1%
ROA	6% or more	4.8%
Net sales	¥440 billion	¥406.6 billion
Operating income	¥45 billion	¥32.7 billion
ROS	10.2%	8.0%
EPS	¥100 or more	¥80.27
Operating CF	¥100 billion	¥103.1 billion

• Expanded and grew business based on a strong customer base, and improved profitability, our top priority.
• Broadened the range of value proposition, primarily in the industries where we are strong, and improved the balance sheet.

	Targets	Results
Growth in orders	3-5%/year	(3.9)%/year
Growth in net sales		(2.7)%/year
Growth in EPS	7-9%/year	(3.9)%/year
ROS	10% or more (FY2020)	8.4%
ROE	10% or more (FY2020)	6.5%
Organic FCF	¥85 billion or more (cumulative over three years)	¥68.8 billion

• The targets were not achieved due to the dramatic changes caused by the COVID-19 pandemic.
• Expanded the range of value proposition, mainly in the industries we specialize in, and continuously improved the balance sheet.

Chapter 4

Management Capital

We are working to strengthen our management capital to increase corporate value and maximize shareholder value.
By making maximum, optimal use of each of the six kinds of capital, we will establish our own superiority and increase our competitive advantage in the market.

This fiscal year, we have organized our operating capital in a table format. On that basis, we explain our human capital and our intellectual capital, together with our capital policy and financial strategy in the aspect of financial capital, all of which are of particular importance in our dialogue with shareholders and investors.

Strengthening management capital to achieve AG2023

	Features	Approaches to Enhancing Corporate Value and Maximizing Shareholder Value	Highlights of Initiatives in FY2021
Human capital	● Number of consolidated employees: 17,258 (10,909 outside Japan and 6,349 in Japan as of March 31, 2022) ● Global Employee Engagement Survey ● Occupational Health and Safety	● Implementation of the 2021 Global Employee Engagement Survey ● Development of offices, subsidiaries and affiliates based on ISO 45001, the international standard for occupational health and safety management systems	● Engagement survey score 80% (FY2023 target: 81%) ● Expand to 9 major subsidiaries and affiliates by FY2021 (Target 12 major sites for FY2023) For details, see P. 88
Intellectual capital	● R&D Investment/R&D Investment to net sales ratio ¥28.5 billion/7.3% (FY2021) ● M&A, Alliance 9 (released deals only) ● Development Centers outside Japan: 10 countries	● Investments to increase and maximize corporate value over the medium to long term	● Prioritize investment in the creation of new businesses/new fields (Life, renewable energy, etc.)
Manufacturing capital	● Quality First ● Manufacturing site: 18 sites in 13 countries (as of March 31, 2022) ● Joint VOF * activities of the four Group companies *VOF: Value of Our Factories	● Implementing customer-focused quality management ● Uniform quality worldwide ● Review and increase the value of our factories	● Implementation of Yokogawa Group's Quality Management "Quality Assurance (QA), Quality Improvement (QI), Quality Mind (Qm)" For details, see P. 89 ● Conducted approximately 30 tours (remote + video) at a factory for customers in response to the pandemic
Natural capital	● Energy usage ● Greenhouse gas (GHG) emissions ● Water consumption ● Waste emissions ● Renewable energy usage	● Aim for a 1% reduction in the Group's intensity unit per of sales (Year-on-Year) ● Reducing GHG Emissions through Initiatives to Achieve Carbon Neutrality by FY2040 ● Assess water consumption and strengthen measures for efficient use of water resources ● Promotion of the introduction of renewable energy	● More than 4% reduction in intensity per unit of sales (compared to FY2020) For details, see P. 94 ● Scope 1, 2: 11% reduction (compared to FY2019) Scope 3: 14% reduction (compared to FY2019) For details, see P. 35-37, P. 94 ● Reduce water intake by 17% (compared to FY2019) ● Start of full-scale expansion. Approx. 15 times (compared to FY2020) For details, see P. 94
Social capital	● Global service network Service centers: More than 180, Service engineers: Approx. 2,000 engineers ● Meetings with president and CEO: 10 times (about 20) Meetings with IR staff: Approx. 300 Business briefings/IR DAY: 1 time ● Community-based management ● Donations and community investments	● Customer base: A close, trust-based and long-term relationship with customers built throughout the lifecycle of their plant facilities ● Dialogue with investors and analysts: Explain financial results and management policies and strategies for a better understanding ● Yokogawa Festival, support for local residents in times of disaster (Storing food, using rainwater for domestic usage) ● Cash contributions and in-kind giving, participation in the community by outside organizations, support for universities and research institutes, etc.	● Making fair, timely, and appropriate disclosures of important information on management policies, business strategies, and financial results, thereby maintaining and strengthening relationships based on trust with all stakeholders, including shareholders and investors For more information, please see P. 98 ● For the second consecutive year, Yokogawa Festival was canceled in FY2021 in consideration of the safety and health of local residents and other stakeholders. ● Donations and community investments: ¥231 million in FY2021
Financial Capital	● ROE 10% or more (FY2023) ● Operating cash flow ¥140 billion or more (3 year cumulative)	● Ensure the implementation of the four basic strategies of AG2023 to increase order volume and sales growth, increase ROS and increase business asset turnover. ● Maintain a financial base to support growth, invest in growth and allocate optimal cash flow to shareholder returns.	● Order growth: 18.2%/year, Sales growth: 4.2%/year, ROS: 7.9%, EPS growth: 10.7%/year, ROE: 6.6% For details, see P. 31 ● Operating cash flow: ¥51.6 billion, Growth investment budget: ¥11.2 billion, Return to shareholders: ¥9.1 billion (Dividend payout ratio: 42.6%)

Human Capital

Human Resources Strategy

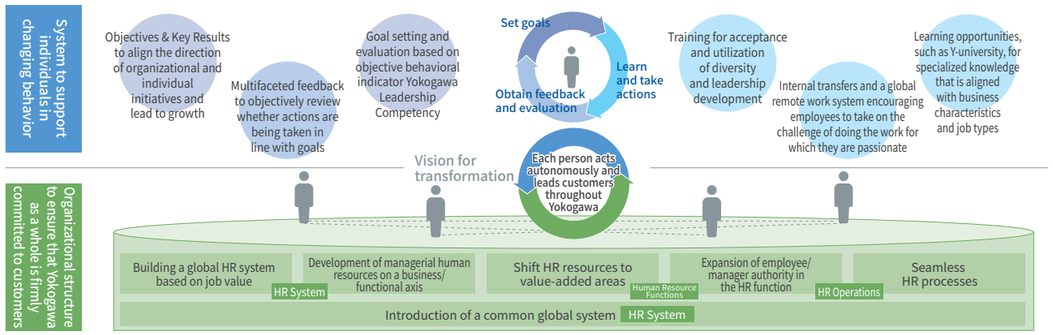
Mikio Matsui
Head of Human Resources and General Affairs Headquarters

Yokogawa aims to realize the aspirations expressed in Yokogawa's Purpose and achieve the growth that will put us on track to becoming a trillion-yen company by fiscal year 2030 through the provision of shared value to society. The driving force behind this is the growth of each and every one of our employees. We will create an environment in which our employees can resolutely tackle the changes in the business environment that are exceeding all expectations, adopt whatever mindset is required, and act on their own initiative to improve individual capabilities and skills.

Under the AG2023 plan, we are thoroughly implementing a global human resources strategy to optimize our internal operations and transform mindsets, as part of which we are cultivating a corporate culture and an organizational climate that encourages people to take on new challenges. A key to expansion into new businesses and fields is to secure human resources with the required capabilities at a global level. We will visualize information on the quality and number of personnel, and recruit, train, and optimally deploy employees. Through recruitment and M&A, we will bring on board personnel who can be immediately effective, promote a change in mindset among our employees, and enhance the training environment for reskilling the workforce. At the same time, the Global HR Transformation Project will integrate personnel systems, processes, and HR databases to establish a foundation for the optimal allocation of human resources. By creating an environment in which human capital is enhanced by such means as improving employee capabilities and engagement, we will maximize the efficiency of our global team. And through our practice of human capital management, our aim as one globally unified company is to continually provide shared value to society.

Global HR Transformation Project

This project will realize Yokogawa's vision through an organization that enables cross-border collaboration and optimization, and a system that allows each individual to grow and understand what is required of them in the future.



Improvement of Employee Engagement

Increasing employee engagement is essential for Yokogawa to enhance corporate value and achieve sustainable growth. When employees are passionate about their work and contribute to the achievement of the organization's goals, the capability of the organization is enhanced, and the value provided to stakeholders is higher. While sharing Yokogawa's Purpose, vision, and shared values, we will realize employees who are proud to be a part of the organization, appreciate and admire each other, have a spirit of mutual respect, and contribute to the organization in an autonomous manner.

Major Initiatives and Achievements

- **Implementation of global employee engagement survey, analysis of results, and improvement activities**
  (FY2021: Engagement Survey Score 80% / FY2023 Target: 81%)
- **Yokogawa Group Awards, an in-house awards system for the Yokogawa Group, is implemented every year.**
  Recognizing and praising people and teams embodying the company's strategy and direction (AG2023/Three goals/Core Values) as role models and good practices.
  (110 employees received 13 awards in FY2021)
- **The "Co-!n System" has been in operation at the Group in Japan since October 2021.**
  This is Yokogawa's unique system that allows employees to give each other "thanks and praise" with tokens. In the first eight months of operation, 40,000 "thanks and praise" were received, and the "Co-!n" system visualizes the various experiences of employees and contributes to cultivating a culture of mutual recognitions.

Promoting Diversity, Equity & Inclusion (DE&I)

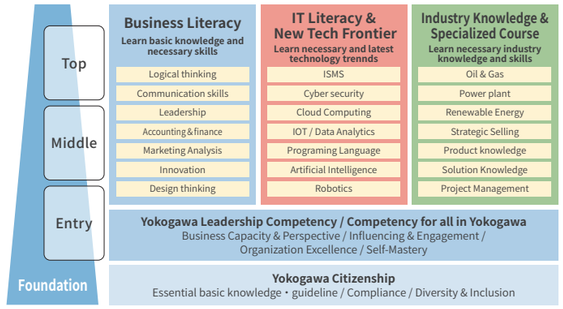
Yokogawa values diversity and the creation of an inclusive and fair corporate culture. We mutually recognize the various differences that each individual has and accept them as individuality. We aim to realize a work environment where everyone can work safely and securely in their own way, and to build a sustainable organization where each employee can maximize his or her abilities and contribute to business. We actively recruit, develop, and appoint human resources with diverse experiences, knowledge, sensitivities, perspectives, cultures, backgrounds, and values, regardless of race, nationality, gender, religion, age, social status, or disability. And utilizing digital technology to achieve flexible work styles, with communication and constructive collaboration based on mutual respect, we will promote innovation and co-creation of new value with our customers, partners, and suppliers, and contribute to the realization of a prosperous human society for future generations.

Major Initiatives and Achievements

- **Implemented DE&I Mindset Training (FY2020: Over 1,000 leaders at the local level, FY2021: All executives)**
  Gained a better understanding of the importance of DE&I promotion and how unconscious bias can affect behavior.
- **Conducted audits of human resources management systems globally, including DE&I as one of the policies. (FY2021: conducted at six business sites)**
- **Conducted e-learning based on the" Yokogawa Group Human Rights Policy" in multiple languages. (More than 12,000 employees took the course in FY2021.)**
- **Promotion of Active Roles for People with Disabilities**
  Employees with disabilities are active in various fields such as engineering, manufacturing, sales, and clerical work, making the most of their respective skills and experience. Active recruitment activities have been conducted continuously for many years; as of June 1, 2022, the employment rate in the domestic Group was 2.46%.
- **Promotion of Female Employees**
  Established a dedicated organization to promote diversity in April 2015. Yokogawa Electric Corporation is working to achieve a ratio of 9.3% of female managers on a non-consolidated basis and 12.5% on a global basis by FY2023. In FY2021, the ratio was 8.6% on a non-consolidated basis and 12.6% globally. In April 2021, two female executive officers were internally promoted.
  In addition, Yokogawa Electric has created a development plan for each female leadership candidate. Activities such as monitoring progress are being actively developed. Furthermore, career development training was conducted for female employees.
  The president and three female managers participated in a panel discussion on "Career and Leadership" to support the participating female employees.

Toward the Corporate Culture of Continuous Growth for Both Employees and the Company

In October 2018, we opened Yokogawa University, the corporate university, aiming to continue to create great value for our customers and society in a rapidly changing world. An environment is provided for everyone to voluntarily continue to improve their expertise and skills in a wide range of fields, while transforming their mindsets in response to change. We aim to transform into a company capable of sustainable growth as an organization by enabling motivated human resources to learn quickly and realizing a learning company culture where people learn from each other. As a matter of urgency, we are focusing on the development of human resources to support new businesses and fields, including the strengthening of leadership and the cultivation of DX human resources.



YOKOGAWA University Learning Categories

Major Initiatives and Achievements

- **The school will further expand the hard/soft contents connected to the achievement of AG2023 goals based on the "Yokogawa Leadership Competency."**
  (Approximately 120 contents at the time of the school's opening in October 2018. ➡ Expanded to approximately 2,700 contents by the end of March 2022)
- **Launched and is currently working on the "Future Co-creation Initiative," a cross-organizational project under the direct control of the president for the purpose of cultivating the next generation of leaders.**

See p.48-49

Special Feature

Future Co-creation Initiative

Create a Brighter Future Through Serendipity and Open Dialogue with Like-minded Allies

Nobuyuki Tamaki
Project Leader

What Is the Future Co-creation Initiative for?

We rolled out a cross-organizational virtual team directly under the president to adapt to the turbulent environment and an uncertain future. We are committed to advocating Yokogawa's Purpose, building a co-creative network, creating values to deal with social issues, and developing next-generation leaders. Our initiative won a prize in the Corporate HR category of the HR Award 2021, which is hosted by the Nihon no Jinji-bu, the largest HR network in Japan, and under the auspices of the Ministry of Health, Labor, and Welfare.

Next-Generation Leaders Lead the Way as Scenario Ambassadors

Yokogawa's twenty-three millennials in their 20s to 40s are nominated as Scenario Ambassadors. They are the young people who engage in dialogue with all stakeholders, using Yokogawa Future Scenarios to encourage future success, with an uplifting vision that transcends organizational and industry boundaries.

Multi-stakeholder Engagement

Customers | Business Partners | Global Environment | Local Community | Shareholders / Investors

Future Generations | Company Executives | Employees | Alumni

Long-term Value Co-creation

Co-creating a better future for our planet together with stakeholders based on the Future Scenarios and Communityship

Shaping a Collaborative Network with Like-minded Allies

- Sharing future worldviews with more than 90 executives and experts from corporations and academia
- Engage in a wide variety of events and webinars on themes such as sustainability management and digital transformation

Creating a Forum of Open Dialogue and Serendipity

- Shaping an industry-government-academia community to co-create the future
- Acknowledging common social issues and exploring business opportunities
- Engaging in "4Revs," a global co-creative ecosystem focusing on young innovators, entrepreneurs, and intrapreneurs

Exploring Future Management and Organization

- Enhancing the alignment of individuals and an organization with a futuristic mindset
- The transformation of corporate culture led by millennials
- Promoting an explorative co-creation project with an individual corporation

Nurturing Co-creative Talent

- Outside-in & backcasting ideas
- Ability to ask Critical Questions to fuel co-creative dialogue
- Connecting individuals and organizations through a purpose-driven approach

The Future Scenarios in 2035 Created by Yokogawa's Scenario Planning

The future scenarios reinvented by young employees using scenario planning techniques are used as a tool to navigate dialogue about the future that transcends different industries and generations. The scenarios are applied to human capital development, business strategy, and R&D strategy. With perpetually inquisitive minds, we will constantly search for new worldviews and continuously refine our scenarios.

Please visit our website for more details.

URL: https://www.yokogawa.com/future-scenario-2035/

Rollout of the Future Co-creation Community Green Phoenix Project

We have founded an industry-government-academia learning community (attended by 30 corporate executives) jointly with Waseda University's Institute of Governance & Sustainability. We regularly hold workshops to explore how to address common social issues and management challenges such as sustainability, digital transformation, and well-being.

Message from Professor Joel Malen, Research Director of Waseda University's Institute of Governance & Sustainability.

Keeping up with the business challenges and opportunities opened up by the unprecedented changes taking place around the world today can be a daunting task. However, one fundamental tool for managing uncertainty and complexity is the consideration and integration of multiple informed perspectives on the relevant issues. The Green Phoenix Project provides a forum for creating precisely such opportunities. In the past year we have deliberated on topics ranging from emerging mega trends to the possible shape of the circular economy, in the process developing penetrating new insights into possibilities for the future.

Workstyle Reform and Job Satisfaction Reform

The environment and values surrounding employees are constantly changing according to life stages and other factors. In order to create an environment enabling each and every employee with diverse backgrounds to work comfortably, take on challenges, and grow, we are implementing a variety of measures to support independent career development, including the opening of Yokogawa University, and also working on reforming work styles and job satisfaction with the aim of co-creating new value through improving productivity and enhancing satisfaction/feeling of growth. Additionally, as a workstyle in the new normal era, we are changing from the conventional way of working, in which employees are required to come to a workplace, to a new way of working, in which employees autonomously choose a place for efficient output in accordance with the nature of the work, objectives, and lifestyles. This is our global policy, and we are promoting the transformation to a new way of working, focusing on a teleworking style.

Global

Major Initiatives and Achievements

- **New Goal Management System OKR (Objectives & Key Results)**
  Established a system to cascade the objective of "what is to be achieved" from the company's top management to all employees. This allows employees to feel that the results of their individual work are connected to the achievement of the Group's overall goals. The system was introduced in stages from April 2020 and rolled out to the entire Group.
- **Global Open Entry System**
  To support the proactive career development of Group employees, we have established the system that allows them to apply for open positions within the Group from any country in the world. The system was renewed in July 2020, and in FY2021, applications were received for a total of 244 positions, with 80 approved.
- **International Remote Work Guidelines (May 2022)**
  Established to promote international remote work and flexibility to meet business needs while optimizing global resources. This supports the efforts of employees by pushing for diversity, equity & inclusion in the organization.

Japan

Major Initiatives and Achievements

- **Cross Job Challenge: In-house multiple job system (November 2021)**
  Established a system that allows employees to voluntarily take on PJT and other work in other divisions while continuing to work in their current jobs. This accelerated employees' autonomous growth and co-innovation.
- **Remote Work System (April 2021)**
  Established a system to enable location-free working; as of June 2022, approximately 40 employees were working from outside the commuting area.
- **Workplace Transformation**
  Based on the premise of combining telework and office work, the internal office was transformed by creating spaces for various uses, incorporating countermeasures to prevent COVID-19 infection, and devising flexible ways to ensure that employees can use the office safely and securely.
  Various working environment options were also added, including the introduction of "shared offices" as a third place and the establishment of a "learning center" .

- **Obtained "Platinum Kurumin" Certification**
  In February 2021, the Tokyo Metropolitan Labor Bureau Director-General certified the company as an excellent childcare support company.

- **Obtained "Great Place to Work" Certification.**
  Certified as a "Great Place to Work" by Great Place to Work® Institute Japan in November 2021.

- **The company received the Excellence Award (Telework Practice Category) at the 22nd Telework Promotion Awards**
  Recognized by the Japan Telework Association in FY2021 for the transformation to a new work style focusing on telework.

Special Feature Yokogawa's Branding

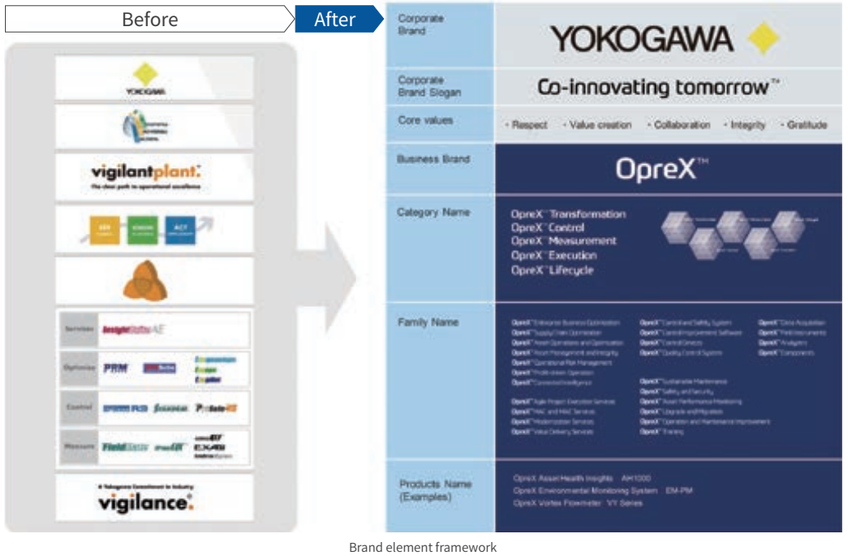
Message from Tsuyoshi Abe, Head of Marketing Headquarters

Tsuyoshi Abe, Ph.D.
Head of Marketing Headquarters

This is now an era in which investors take a great interest in non-financial metrics. It is said that IR information includes financial and non-financial information, and I think that human capital, intellectual capital, and brand are the representative types of non-financial information. Of these three, the Marketing Headquarters is responsible for intellectual capital and brand improvement. Based on our solid brand vision and concept, we will express our corporate initiatives through attractive designs, which is to say, we will focus our efforts on branding and earning the trust of customers, investors, and all stakeholders. As a company, we value our independence regarding what we think, believe, and communicate, and that will be a driving force for the advancement of society and industry. This is because, for any company, brand = a commitment. To that end, if a brand regains its independence and it is clearly recognized what the brand is meant to accomplish, and if it retains its independence while business is developed in line with the circumstances in society, then I believe that the brand will definitely continue to provide value to society. The Marketing Headquarters also oversees the R&D department and the international standardization department. This is because executives of leading global companies still value technology above all else, seeing it as the wellspring of innovation. Thus, corporate R&D activities are ever more relevant. From the open innovation point of view, Yokogawa must have superior technology to be able to carry out partnerships with the world's leading companies and academic institutions. An additional factor is that company executives have been paying closer attention in recent years to regulatory matters, and this is due to the increasing importance of rulemaking in this VUCA world of rising uncertainty. Given the general trend in which "second-tier companies develop the technologies and first-tier companies make the rules," it will be very important to have a common set of rules for all companies and regions so that companies can compete fairly to secure an advantage. Yokogawa will strategically manage all these activities with a marketing mindset.

Yokogawa's Brand Value Enhancement Activities

Over the past few years, Yokogawa has been working to increase its brand value. In particular, we have reorganized our brands based on a brand architecture and renewed our design content. The main action was to organize and systematize our brands and identity to enhance our corporate identity. For the corporate brand, we created a slogan, and launched a



Brand element framework

Yokogawa brand site on our intranet. For our product and service brand, we created an IA business brand and developed naming roots. As for design elements and communications, we also issued communication design guidelines and revamped our website.

These branding efforts were highly evaluated by outside parties, as indicated by our receipt of an award from Interbrand, a global branding company, at the Japan Branding Awards 2018, their first such event.

A Scientific Brand Approach

In the 1990s, companies began to recognize and focus on the importance of non-financial brand value. To begin with, brands are a marketing resource, and if fully utilized, they can contribute significantly to a business. Companies with strong customer and stakeholder support are the first to use their brands as a marketing resource and contribute to their businesses, addressing issues such as falling sales, declining support, and a lack of talent. Recently, it has been revealed that the companies ranked as Best Global Brands (BGB) by Interbrand have outperformed market indexes such as the S&P 500, and this has got the attention of institutional investors.

The brand value quantified in Interbrand's BGB ranking is calculated as the present value of future revenues generated by a brand based on analyses of financial performance, brand role, and brand strength. The greater a brand's strength, the lower the risk of future damage to brand value and the lower the discount rate.

Brands have long been held to have qualitative characteristics. For the quantification of qualitative information to define brand value, only the portion of future profits that can be attributed to the brand is translated into a monetary amount. This quantifies the relative influence of a brand on factors affecting the purchase of a product or choice of a service. To quantitatively evaluate its own brand value, Yokogawa has adopted Interbrand's brand valuation index, and aims to quantitatively improve its brand value. We calculated our brand value in 2016 and 2021 and found that brand value in 2021 was up 35% from 2016. Furthermore, brand value as a percentage of corporate value was 2.5%, a slight increase from 2016 that nonetheless was relatively high if compared to other Japanese companies in our industry. On the other hand, for our overseas competitors, brand value as a percentage of corporate value is over 5%, so a further strengthening of our activities is needed.

In the past, investors have tended to focus on quantitative financial information such as financial results that can be clearly presented in numeric form, but recent changes in the business environment and in capitalism itself have driven a growing interest in non-financial information (qualitative information) such as corporate purpose, a company's vision, business policies, and ESG, none of which can be represented in numeric form.

In fiscal year 2021, Yokogawa announced the Yokogawa's Purpose statement together with the Accelerate Growth 2023 mid-term business plan. This is because in recent years purpose, which is said to be the raison d'etre of a brand, has become a resource that connects the brand with various internal and external stakeholders. In addition, purpose enables the company to connect not only with its employees and customers, but also with all stakeholders who pay attention to what the brand is saying, creating the opportunities necessary for sustained growth. Brands that are able to realize their purpose in this world will have the most value. So, it goes without saying that whether a brand has a social motive that evokes an empathetic response will be key to the growth of that brand.

Yokogawa will continue to promote purpose driven branding to enhance its brand value, one of its non-financial information capital assets.

Intellectual Capital

Innovation (Research & Development)

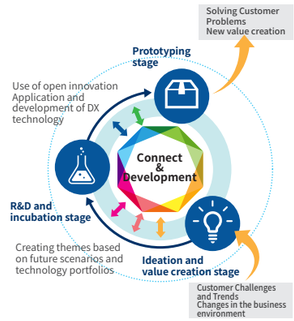
Yokogawa's research & development (R&D) includes product development and advanced development activities that resolve issues quickly in each industry segment based on customer trends and an awareness of the current situation. It also includes innovation activities whose goal is to quickly provide new value while looking ahead to the future through co-creation with customers and partners. The business headquarters is mainly responsible for the former, while the latter is primarily the task of the Innovation Center.

The mission of the Innovation Center is twofold:

1 Contribute to customers' value creation (co-creation) through the interconnection of internal and external organizations, including customers' organizations.
2 Devise innovative scenarios and incorporate them in research and development activities to nurture future businesses.

R&D structure at Yokogawa

Connect & Development



Through its innovation activities, Yokogawa is creating sustainable value for customers based on a broader perspective and a deeper understanding of customer issues. The innovation creation process consists of the three stages shown on the left. In the ideation and value creation stage, future scenarios are developed from the challenges faced by customers, customer trends, and changes in the business environment. These scenarios are then incorporated into R&D themes.

In the R&D and incubation stage, we will leverage open innovation, intellectual property, and technology marketing to build concrete services and product images, and verify the value and feasibility of research themes. We will also apply DX technology to create new value.

In the prototyping stage, we listen to customers, returning to them many times throughout the proof of concept (PoC) process to quickly and efficiently improve the completeness of the solution and create new value.

These three stages of our innovation activities enable us to identify and resolve customer issues.

Yokogawa's R&D Strategy

The basic concept of Yokogawa's R&D activities is how to produce and utilize materials with specific functions, and how to develop and provide effective means for those functions.

The Innovation Center conducts R&D activities on three themes. Energy & Sustainability Innovation will contribute to the process automation industry by deepening and enhancing industry automation, which has been our core business.

Life Innovation and Material Innovation will not be an extension of Yokogawa's existing business, but a new field where we will take on new challenges.

Open Innovation Activities

Yokogawa is vigorously promoting open innovation, the use of external ideas and resources (e.g., advanced technologies, expertise, human resources), and collaboration with other parties for innovation. We are aiming to maximize the value provided to our customers by collaborating with other organizations. In pursuit of the best partners, we collaborate with universities and research institutions inside and outside Japan and utilize venture capital matching services. These measures allow us to greatly expand our opportunities to promote co-innovation with leading startups and unicorns and quickly acquire leading-edge technologies and the most up-to-date information to accelerate the development of new businesses. Specifically, we will leverage open innovation to focus on the transformation of existing businesses through digital transformation and the development of new markets related to biotechnology, life sciences, water, the ocean, and space.

International Standardization Activities

International standards are very important for business strategy because they determine whether a product or solution can be deployed with global advantage. On the other hand, it is also an important factor in research and development strategies because it determines whether a technology for which upfront investment is made will be supported by the market.

In collaboration with its R&D and intellectual property strategies, Yokogawa is actively engaged in international standardization activities in various fields and is a member of many international standardization organizations, including IEC and ISO. Yokogawa prioritizes the enhancement of value for its customers and focuses on international standards that establish requirements for interoperability in telecommunication technologies and software. The Company's policy is to disclose its intellectual property if necessary or license it through licensing agreements.

Special Feature

SDGs and Space in Yokogawa
- Yokogawa develops space by leveraging its solutions to the SDGs. -

Exterior view of the International Space Station "KIBO"
(Source: JAXA/NASA)

■ Yokogawa's Involvement with Space

Yokogawa's involvement in space projects dates back to the launch of a rocket at the Institute of Industrial Science of the University of Tokyo in 1961 and to the delivery of an instrument for measuring the ionosphere for a NASA rocket in 1962. Since then, as a measurement equipment vendor, the company has delivered many measuring instruments to space development agencies and companies, and has a track record of delivering onboard equipment for the domestic rockets N-II, H-I, H-II, and H-II A/B.

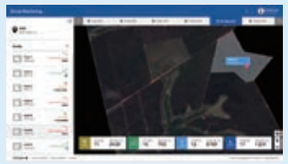
■ Yokogawa's Technology Contributes to Measuring Ability in Space

Yokogawa CSU-W1 confocal scanner unit has arrived at the International Space Station (ISS). This CSU-W1 is a core component of Chiyoda Corporation's COSMIC confocal microscope system, which will be installed in "KIBO," the ISS's Japanese Experiment Module, and is used in life science experiments. The system was transported to the ISS by the Japan Aerospace Exploration Agency's (JAXA) "KOUNOTORI" H-II transfer vehicle, which arrived at the ISS in May 2020. In addition, the "Distribution Measurement of the High and Low Temperature Region and Pseudo Real-time Measurement by Random Access with Brillouin Optical Correlation Domain Measurements" proposed for the Space Exploration Innovation Hub Center of JAXA in October 2021 was adopted and is now a joint research project. We will use the knowledge we have gained from our company's fiber optic distributed temperature sensor "DTSX" and develop this knowledge through research at the Innovation Center, aiming to contribute to the maintenance of equipment in extreme conditions such as space.

■ Space Business from the Perspective of SDGs

Yokogawa has set "Three goals" for sustainability that we want to achieve, in order to realize a sustainable society by 2050. One new area that we are exploring in business opportunities in order to achieve these goals is space.

We believe that the utilization of the Earth Observation DATA (Remote Sensing DATA) obtained by satellites will be a key factor in promoting DX and are conducting value verification experiments. One example is forest environmental monitoring. The forests and plantations that are subject to management are often vast, which poses the challenge of high costs for the labor-intensive work. In response, we conduct research activities to support operational improvement and make social contributions from the perspective of the SDGs through the effective and efficient remote visualization and standardization of growth levels and assessment to minimize damage from pests.



■ Activities to Accelerate Space Business

Hidehito Shiratsu	Yukihiro Uchida	Saho Fukuma	Takuya Azuma
Space Business Development Office	Marketing Headquarters Innovation Center	Space Business Development Office	Life Business Headquarters Development Center

The Innovation Center and several business units are crossing boundaries and working together in a company-wide effort to rapidly develop the space business, an area of exploration.

In 2022, we established the Space Business Development Office to act as a conductor. In order to utilize our ability to measure and connect to fulfill our responsibilities for the future of our planet using space as a stage, we will accelerate our efforts to resolve issues by mobilizing internal/external resources.

A roundtable discussion was held by members working on the space business. Please also refer to our company website for the content of the discussion.

https://www.yokogawa.com/about/research-development/inv_center/roundtable/yokogawa-x-space-part1/

Intellectual Property

Yokogawa regards intellectual property(IP) as a key asset in maintaining the high added value of our products and solution services, and in providing value to all our customers. The Intellectual Property Department is located within the Marketing Headquarters and is organized to work closely with R&D, brands, design, M&A and alliances, and other divisions. We are also developing and implementing a new IP strategy considering the rapidly changing business environment and AG2023 as IT/OT convergence advances. In addition to renewing the IP infrastructure that supports this IP strategy and promoting DX, we are working to strengthen our human resources. In addition, we have revised our internal regulations in order to establish an organization to implement a unified IP strategy for the Groups.

■ Identifying Key Issues in IP Activities

Yokogawa had been conducting IP activities mainly in its core IA business. In recent years, there has been a paradigm shift in the IA field, such as the convergence of IT/OT, and it is expected that companies in non-IA industries such as the IT industry will become competitors in the future. Furthermore, to promote IA2IA, it is necessary to expand the Yokogawa's value offerings in the IT/OT convergence field. In addition, it is necessary to establish a business structure centered on the common social issues that are the focus of AG2023. Therefore, we are formulating and implementing a new IP strategy, rather than continuing our previous IP activities.

❶ Paradigm shift in IA field
❷ Expanding Yokogawa's value offerings
❸ Establish a business structure based on common social issues

→ **New IP Strategy**

■ Formulation and Implementation of IP Strategy

Building IP Portfolios in Priority Areas

To promote IA2IA and prepare for the risk of entry by non-IA companies, the creation and acquisition of intellectual property in the IT/OT convergence field will be important. Therefore, by focusing on promising technologies and selecting multiple focus areas in the IT/OT technology field, we are constructing a flexible IP portfolio in response to market changes.

IP Creation by the Company

We are changing the traditional product-out business approach and promoting IP applications focused on promising technologies and the above priority areas. In addition, the IP department is involved from the early stages of R&D, and collaborates with the invention department on the construction of the IP portfolio and plans for its utilization.

Acquisition of Intellectual Property from Third Parties

In order to maintain and enhance the competitive advantage of our business, we are strengthening our global IP portfolio to support new business development through M&A and the purchase of IP, as well as the creation of IP through in-house research and development.

M&A and alliance track record under AG2023 activities (selected from deals released since May 2021)

▶ Alliance	Aug. 2021	Fluence Analytics, Inc. (America) Automatic continuous online monitoring of polymerization system
▶ Alliance	Sep. 2021	CyberneX (Japan) Measuring brainwaves with a high-performance earphone-type device
▶ Alliance	Oct. 2021	Web Synergies (S) Pte. Ltd (Singapore) IT/OT solutions
▶ Alliance	Oct. 2021	NTT Communications Corporation (Japan) Development and provision of a shared-use OT cloud service
▶ M&A	Nov. 2021	Insilico Biotechnology AG (Germany) Bioprocesses digital twin technologies
▶ M&A	Dec. 2021	PXiSE Energy Solutions, LLC (USA) Managing renewables and distributed energy resources (DERs)
▶ Alliance	Dec. 2021	Research Institute for Glycoengineering, Inc. (Japan) Synthesis of glycans affecting cell metabolism and functional changes
▶ M&A	May 2022	Dublix Technology ApS (Denmark) Optimization technologies for waste-to-energy and biomass power plants
▶ Alliance	Jun. 2022	Wayway NV (Belgium) Enterprise information technology and operational technology (IT/OT) digital unification

Prevention and Reduction of IP Risks

In view of the potential IP risks associated with IT/OT convergence, Yokogawa has joined the LOT Network*1 to promote co-innovation and the prevention and reduction of IP risks through PAE*2.

*1 LOT Network: A nonprofit organization that protects its member companies from PAEs through patent licensing agreements between them. Yokogawa joined in December 2020
*2 PAE (Patent Assertion Entity): An organization or company that acquires patent rights from third parties and whose business is to generate revenue through the exercise of rights.

■ Structure and Governance of IP Activities

In order to implement the IP strategy, Yokogawa is building the following IP activity structure and governance:

Positioning of the IP Department

The IP Department is located within the Marketing Headquarters and is organized to work closely with R&D, brands, design, M&A and alliances, and other divisions. The IP department is working closely with these units to establish a structure that enables the prompt acquisition and dissemination of information on market trends and management strategies. As a result, it has become possible to make strategic recommendations on market information, future technological trends and business forecasts based on IP information.

Development of IP Infrastructure and IP DX

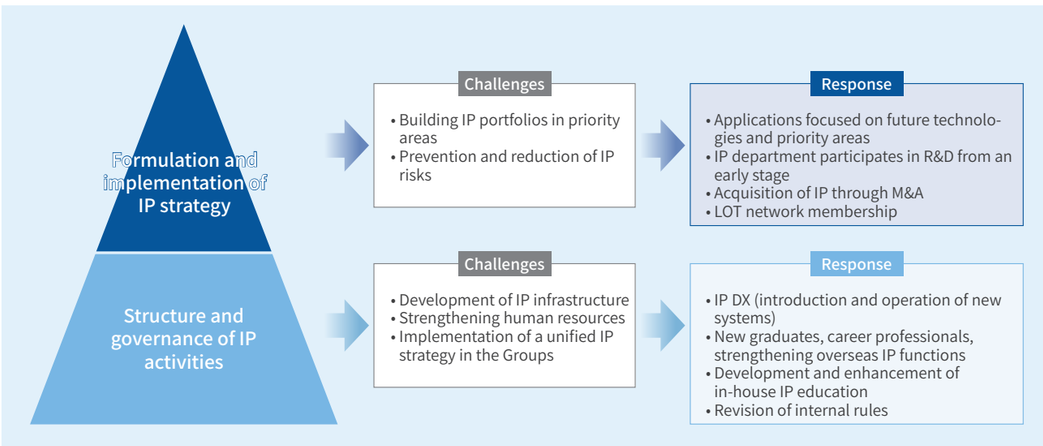
We are in the process of revamping our IP system, which is the cornerstone of our IP infrastructure. With the introduction and operation of the new system, it is now possible to use a common platform not only with IP stakeholders in Japan (IP divisions, inventors, etc.), but also with IP stakeholders and external resources worldwide (patent offices, law firms, translation companies, etc.), creating an environment that enables the rapid and high-quality development of IP activities globally.

Strengthening Human Resources

In line with the expansion of the IP department's operations, we are strengthening our workforce by hiring new graduates and career professionals. We have also hired local experts (lawyers, patent attorneys, etc.) in the U.S., Europe, Singapore, and India, and established and expanded IP functions to serve as bases, thereby strengthening our IP functions on a global basis. In addition, we are working to improve and strengthen in-house IP education to revitalize IP activities and develop human resources.

Revision of Internal Rules

Amidst various changes, such as an increase in M&A and a review of our business structure, we revised our internal regulations to implement a unified IP strategy for the Group. Specifically, Yokogawa has consolidated its IP rights at its head office and clarified that the IP department at head office has the authority to oversee the Group's IP activities.



Capital Policy and Financial Strategy in Financial Capital

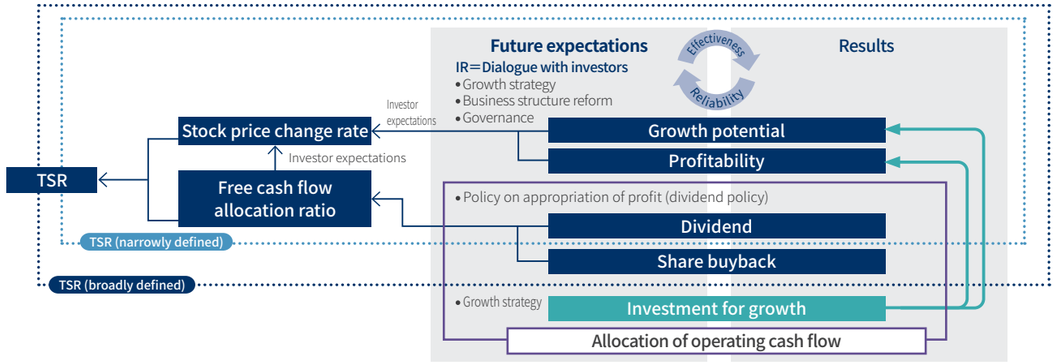
Thoughts on Investment for Growth and Returns to Shareholders

We will strive to maximize shareholder value from a medium- to long-term perspective by achieving a total shareholder return (TSR) that exceeds the cost of shareholders equity.

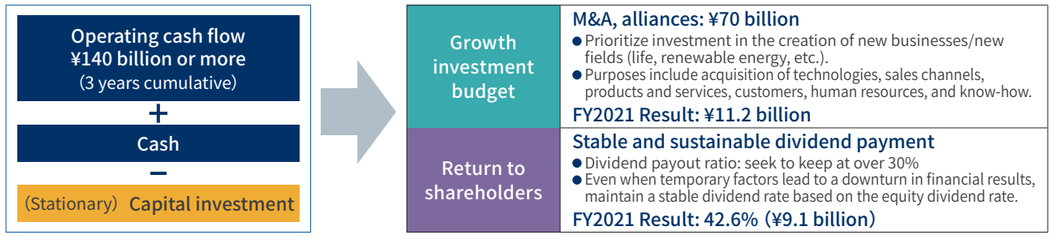
Through investment for growth, we will strive to increase our growth potential and profitability, further increase our cash flow, achieve sustainable growth, and increase corporate value over the medium to long term. We will also actively provide returns to shareholders on the premise that we will maintain a certain financial base.

Furthermore, by actively engaging in dialogue with stakeholders, including capital markets, through IR activities, we will strive to deepen common understanding and foster trust.

Michiko Nakajima
Head of Accounting & Treasury Headquarters



The TSR in fiscal year 2021 was below the weighted average cost of capital (WACC). Based on the basic strategies of AG2023, we will accelerate business growth to improve ROIC, and eventually also ROE.



Precondition: keep shareholder capital at a level that can maintain an A rating

To achieve sustainable improvement in corporate value and total shareholder returns, Yokogawa will strengthen its capability to generate future cumulative cash flow through its business to invest in growth and deliver returns to shareholders.

- The company will set aside a total of ¥70 billion for capital investments for growth (strategic investments) over the three-year period. It will maintain an optimal capital structure that takes into account overall risks, increases or decreases in equity, and predicted increases in risk associated with risk investments.
- Under the dividend policy (basic policy on allocation of profits) the company will seek to allocate profits preferentially to investments that maximize corporate value over the mid- to long-term, but will also strive to improve shareholder return through the proactive payment of dividends, while ensuring it retains a certain financial base. Yokogawa will continue to return a certain percentage of profit each period based on the target dividend payout ratio, and maintain a stable dividend based on the equity dividend rate.

We will aim to keep the dividend payout ratio at 30% or higher, but based on the thinking laid out above, we will set it at a level in order to maintain long-term expectations for the company in the capital markets.

■ Major Results of Strategic Investments in Fiscal Year 2021

We acquired Insilico Biotechnology AG for building total bioprocess solutions that support biopharmaceutical development through to manufacturing, and PXiSE Energy Solutions, LLC for entering the MGC and DERMS fields that integrate conventional power systems and distributed energy resources and optimize the entire system. We have made carefully selected investments, mainly in the Life Business and renewable energy sectors, and we believe that we are making good progress in general. To maximize shareholder value from a mid- to long-term perspective, we will continue to maintain a financial base that supports growth, invest in growth, and allocate cash flow optimally to shareholder returns.

Please refer to p.56 on case study: Acquired Insilico Biotechnology AG. Please also refer to p.41 about PXiSE Energy Solutions, LLC.

Case Study

Acquired Insilico Biotechnology AG, Developer of Innovative Bioprocess Digital Twin Technology

In November 2021, Yokogawa acquired Insilico Biotechnology AG, which develops and provides bioprocess software and services for the bioprocessing field.

In February 2022, the company changed its name to Yokogawa Insilico Biotechnology and began operations.

Current status of Biopharmaceuticals

Demand for biopharmaceuticals is growing as they have fewer side effects and can be used to treat rare and intractable conditions. The genetic engineering and cell cultivation techniques used in their production are more costly than the chemical synthesis techniques used to produce general-purpose pharmaceuticals. Furthermore, the complex cell cultivation process required to efficiently and stably obtain proteins poses significant challenges with mass production.

Solving Issues with Digital Twin Technology

Yokogawa Insilico Biotechnology employs a hybrid digital twin technology that combines a unique mechanistic model of an intracellular metabolic mechanism with a data-driven model constructed from process data using machine learning. This drastically speeds up the prediction and development of complex bioprocesses and enables the construction of metabolism models for bacteria and other cellular organisms.

It can be used in food and chemical production and enables the real-time analysis of process data, allowing for the early detection of process abnormalities.

Contributing to the Commercialization of Bioprocessing

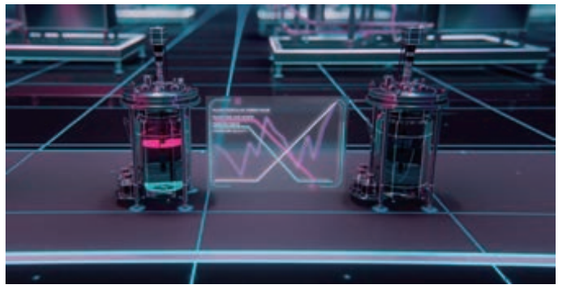
The combination of Yokogawa Insilico Biotechnology's innovative technology with Yokogawa's pharmaceutical production solutions, global sales and service networks, and engineering capabilities will accelerate digital transformation in the bioprocessing industry and contribute to the commercialization of bioprocesses.

Yokogawa Insilico Biotechnology

Established: 2001 Number of employees: 29
Location: Stuttgart, Germany
CEO: Klaus Mauch
Business: Development and provision of bioprocess software and services through the use of digital twin technology

What is a Bioprocess?

A process that uses biological reactions in microorganisms, animals, and plants to produce materials that cannot be produced using conventional chemical synthesis techniques.



Our Thoughts on the Criteria for M&A and Withdrawing from Businesses

After screening for strategic consistency, we make comprehensive judgments based on quantitative indicators such as net present value (NPV) and internal rate of return (IRR), depending on the type of investment. With respect to investments in and withdrawals from new and existing businesses, we take into account factors such as the nature of the business and regional characteristics. Following extensive discussions by management, the decision is made on the condition that the IRR exceeds the hurdle rate.

Chapter 5

Business Strategy

Our ability to measure and connect is for our customers. We seek to solve global issues through acquired technologies in the areas of measurement, control, and information.

Industrial Automation and Control Business

Energy & Sustainability Business

Given the expected surge in global energy demand, the renewable energy market is primed for growth. Yokogawa's energy and sustainability business promotes safe and efficient energy use by interacting with the entire value chain—from the production, supply, and use of energy to disposal and recycling. The business segment aims to protect the environment by achieving a sustainable, carbon-neutral society.

Materials Business

Among the requirements in this segment are efficient energy use, recycling, and the use of raw materials that have a low environmental impact. Drawing on its expertise in ecological solutions and digital technologies, Yokogawa is striving for a world that maintains a balance between comfort and sustainability. Our materials business is critical to achieving a circular economy that can exist in harmony with the environment.

Life Business

The growing global population is putting a strain on the production and supply of food and water. Demand for pharmaceuticals is also rising steeply. Yokogawa's life business supports the supply of medicines and food and water so that people everywhere can live safely and enjoy good health.

Measuring Instruments Business

Often considered to be the mother tools of modern industry, measuring instruments have been an integral part of Yokogawa's business since the company's inception. We provide a total solution, including software and services, to customers in three priority fields (decarbonization, telecommunications, and well-being) where technological innovation is progressing, utilizing our precision measurement technology for power, voltage, current, light, and pressure.

Aviation and Other Businesses

(New Businesses and Others since Fiscal Year 2022)

Setting its sights on easing the use of the industrial internet of things (IIoT), Yokogawa provides the necessary hardware, software, and cloud solutions. In the materials market, the company has launched a biomass materials business to provide environmentally friendly bio-based materials.

Industrial Automation and Control Business

Energy & Sustainability Business

We contribute to well-being and quality of life of all with the clean energy generated by our technology.

We contribute to a resilient and sustainable society by supporting safe and optimal operations throughout the entire value chain of production, supply, utilization, disposal, and recycling for diversifying energy.

Koji Nakaoka
Head of Energy & Sustainability Business Headquarters

Focused Industries and Key Measures

Upstream / Downstream

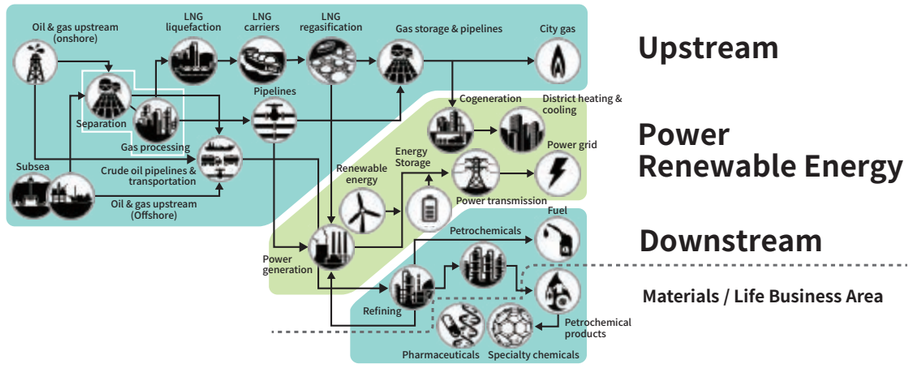
- Improve customer profits through efficient operations and throughput improvement solutions using DX technology.
- Introduce "Quick Effect" solutions with customer collaborations such as PoC(*1) and business alliances.
- Expand the OPEX business based on large installed base
- Strengthen solution development capabilities and share best practices with regional subsidiaries.

Power / Renewable Energy

- Expand the business portfolio in the MGC*2/DERMS*3 business through M&A, alliances, and capital participation, including the acquisition of asset performance management.
- Expand the scope of business by leveraging solutions and active inquiries from acquired companies.
- Accelerate research on hydrogen business opportunities by an in-house cross-sectional task force.

Business Area

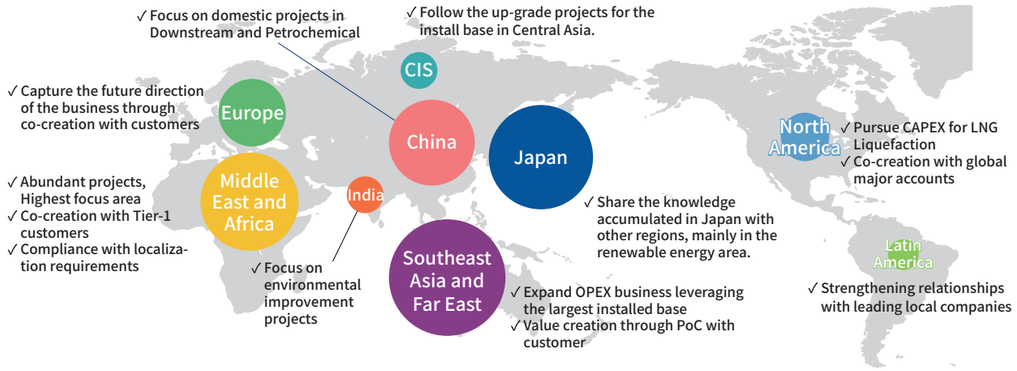
Our business domain encompasses the entire energy supply chain, from the drilling for oil and gas to power transmission and distribution.



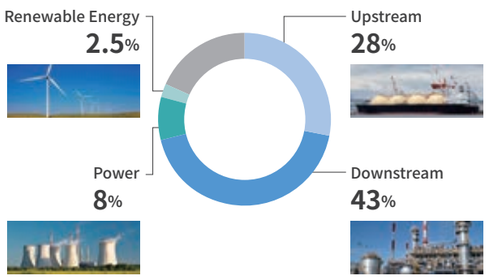
	Upstream / Downstream	Power / Renewable Energy
Customer Trends	• Increased investment due to energy supply shift from Russia (especially gas) • Acceleration of business restructuring and consolidation along with energy transition • Increase in number of cross-industry consortia for CCUS, hydrogen, ammonia, etc. • Increased investment in DX, including operational efficiency improvements, unmanned/remote operations • Concerns about project postponements or suspension due to worsening breakeven point caused by inflation (construction material and wages)	• Diversification of renewable energy. Diversification of focus applications by region and customer • Revitalization of investments in nuclear power and coal-fired power plants to make up for power shortages
Competition Environment	• Severe price competition involving local suppliers • Booming marketing and sales activities on carbon neutral-related markets	• Entry of new players from outside the traditional IA domain, such as consulting firms, IT giants and local system integrators, etc. • Portfolio expansion by proactive M&A
Strengths, Opportunities	• Large installed base and long-term customer relationships of trust • Consulting and executing capabilities to optimize customer operations • Total system integration capabilities for mega projects including multi-vendor delivery • Improving engineering efficiency through global standardization	• Rich experience in, and knowledge of, geothermal, waste-to-energy, and biomass • Various references in optimal energy management in Japan • Acquisition of technologies for power transmission and distribution • Acquisition of technologies for optimizing biomass power generation

*1 PoC: Proof of Concept
*2 MGC: Micro Grid Control
*3 DERMS: Distributed Energy Resource Management System

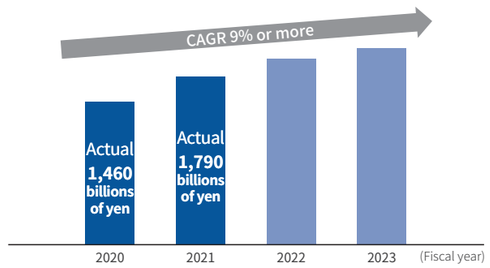
Business Development and Regional Strategy



Industry Split (Orders Received in Fiscal Year 2021)



Orders Growth (Image Diagram)

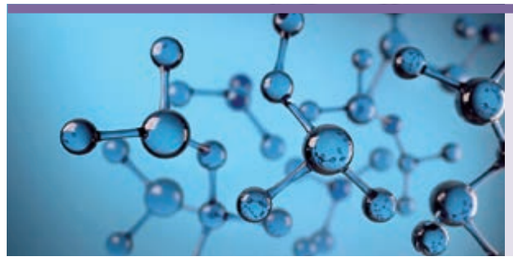


Fiscal Year 2021 Review and Future Growth Strategy

Orders received in fiscal year 2021 grew substantially, to ¥179 billion (+22.6%), thanks to a recovery in investment that offset the impact of the COVID-19 pandemic. However, in fiscal year 2022, we observed a business impact due to the Russia - Ukraine issue, which led to the cancellation of some large projects. To achieve the AG2023 targets, we will make our best effort.

Our action plans in our focus industries are as follows. Customers in the Upstream and Downstream sectors are challenging energy transitions and carbon neutrality. Examples include hydrogen, ammonia, and CCUS, as well as their commercialization. In the Energy & Sustainability Business, under the "co-creation" concept, we continue to provide PoCs and further solutions to meet customers' challenges. In addition, customers are eager to implement DX, including IIoT, to improve profitability and realize secure operations. We are also working on these projects with a cross-sectional team and accumulating know-how through all possible opportunities.

In the Power / Renewable energy business area, we continue to pursue M&A opportunities for further growth. In December 2021, we acquired PXiSE, a U.S. company with technologies for power transmission and distribution and battery optimization, to strengthen our power grid management business. In May 2022, we acquired Dublix, a Danish company with technologies for efficiency improvement in the biomass power plant. We have been receiving many inquiries for both companies, and we will devote more resources to them, combining existing solutions, to grow them as our core business in the renewable energy field.



Materials Business

We contribute to the realization of a circular economy enabling coexistence with the environment.

We contribute to the realization of a circular economy society that is comfortable, convenient, and harmonized with the environment through the speedy implementation of four key strategies, addressing customers' issues such as productivity improvement, reduction of their environmental footprint, and efficient use of resources.

Takeshi Taniguchi

Head of Materials Business Headquarters

Four Key Strategies

1. Mindset Transformation (MX)
2. Industry Strategy - Selection and Concentration-
3. Expansion in a new domain
4. Regional strategy

Focused Industries and Key Measures

Chemical-Related
- Strengthening batch processes solutions
- Expansion of solution business
- Initiatives for carbon management

Mining & Metals
- Environmental and safety solutions
- Remote operation and operational improvement (with DX, Cloud)
- Consulting and alliances

Mobility and Semiconductors
- Manufacturing support for EV supply chain (functional chemicals, batteries, semiconductors)

Business Area

We defined two main business areas in a wide range of raw materials industries.

The "PA area" is mainly chemical-related and mining and metals, our traditional core business. The "New area" is mainly FA, such as mobility and Electrical/Electronics/semiconductor supply chains, and the environmental business, including carbon management, where further growth is expected.

Vast amount of know-how (Domain Knowledge) — Process Automation

Focused industry — Chemical-Related

Functional chemical
- Engineering plastic
- Synthetic fiber
- Paint
- Adhesive
- Film

Intermediate chemical
- General-purpose resin
- Synthetic detergent
- Fertilizer and pesticide

Mining & Metals
- Copper
- Aluminum
- Magnesium
- Rare metal

Others
- Pulp & paper, Iron & steel, Cement, Rubber, Fiber, etc.

+ alpha

New insight — New

Factory Automation
- Mobility
- Electrical Electronics Semiconductor

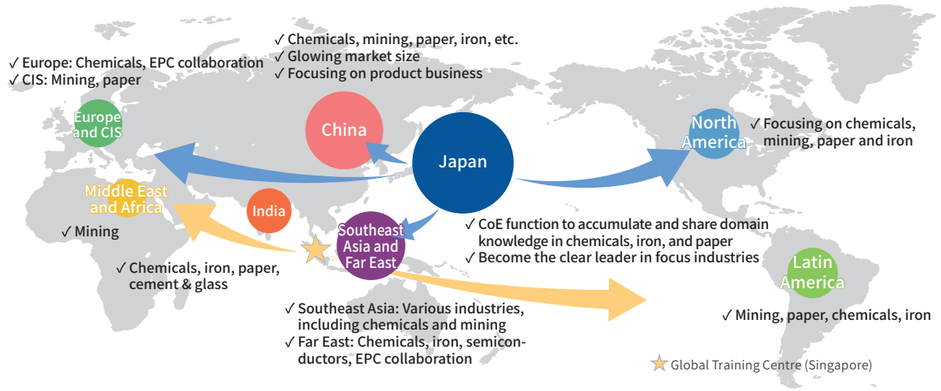
supply chain

Environmental Business
- Carbon management
- Biomass material
- Material recycling

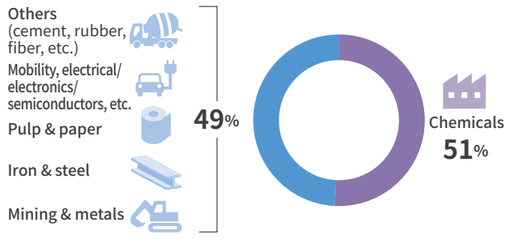
	Chemical-Related	Mining & Metals
Customer Trends	• High-mix, low-volume production • Growing global demand for semiconductors and efforts to ensure stable supply • Development needs for new materials for EV and for low environmental impact materials • Promoting the efficient use of energy, such as reducing CO_2 emissions toward carbon neutrality	• Increasing needs for optimal and autonomous operations across the mining process • Addressing environmental (decarbonization), safety, advanced control, advanced maintenance, remote operation, etc.
Competition Environment	• Continuous flow process players are mainly DCS vendors. Batch process players are not only DCS but also PLC vendors. Since there are many players, expertise can be a competitive advantage	• Heavy electric companies have been playing a leading role
Strengths, Opportunities	• High market share and large installed base of DCS in basic chemicals • Abundant experience and know-how accumulated through long-term partnerships with world-leading Japanese customers	• Scope for business development for Yokogawa. Expected future opportunities. • Our expertise in safety and reliability technologies in the PA field meets customers' needs • Experience and know-how accumulated through long-term partnerships with customers in Australia, South America, and Africa

Business Development and Regional Strategy

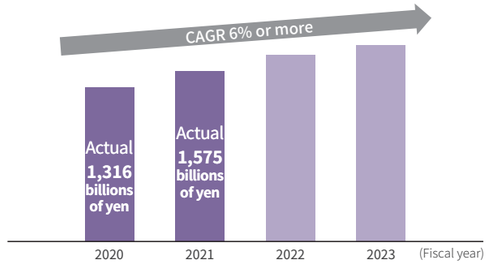
Leveraging "Japanese know-how" and "global service network," developing regional businesses based on regional characteristics (by industry, by business, and by customer.)



Industry Split (Orders Received in Fiscal year 2021)



Orders Growth (Image diagram)



Fiscal Year 2021 Review and Future Growth Strategy

Looking back on the first year of the Materials Business subsegment, which was established in April 2021, we saw visible progress during the year.

Orders received in fiscal year 2021 were strong, mainly in Japan, at ¥157.5 billion (+ 19.7%). Although we faced drastic changes in the world, we were able to make steady progress toward the AG2023 goals.

Our business opportunities are expanding in the chemical industry under the acceleration of the movement of carbon neutrality and a circular economy. In the functional chemicals area, demand for new raw materials for EV batteries is rising along with efforts to reduce CO_2 emissions. In addition, with increased demand for semiconductors, speedy development and stable supply become customer challenges.

In this context, we recognize that some of our activities have contributed to our business growth, such as setting up a training center in Singapore and improving our capability of the co-innovation approach.

We also launched a Carbon Management Solutions website as an initiative in new areas. The response has been greater than expected, and we have received inquiries from customers in various industries, who are eager to reduce GHG emissions. We are working together on decarbonization with customers.

We expect demand for semiconductors, EVs, and other products to remain strong in fiscal year 2022. Therefore, we will further accelerate our four key strategies, such as strengthening batch processes solutions in the functional chemical field, toward our business goals and realizing a circular economy society.

Carbon Management Solutions Website

https://www.yokogawa.com/solutions/solutions/carbon-management-solution/?nid=yreport

Life Business

The life business provides solutions that support people's lives and protect their health and safety.

We contribute to the supply of pharmaceuticals that save people's lives and health, and safe food and water everyone can eat and drink with peace of mind.

We will lead the world in advancing "Bio Industrial Autonomy (BIA)" and contribute to a future embracing global harmony.

Hiroshi Nakao
Head of Life Business Headquarters

Focused Industries and Key Measures

Life Sciences

- Expansion of imaging equipment functions
- Expansion of lab automation business
- Providing remote analysis services
- Research and develop technologies for next-generation microscopes
- Expansion testing and diagnosis support business

Pharmaceuticals, Food, Bio

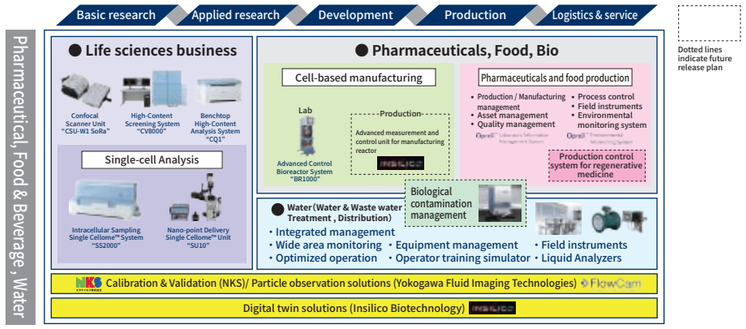
- Realization of next-generation smart factories
- Expansion of production control system for regenerative medicine
- Unmanned or labor-saving operations through Robotics
- Providing Bioprocess DX (BDX) Solutions
- Providing microbial contamination management solutions

Water

- Automation of water and sewage facilities
- Emerging countries ODA (Official Development Assistance)
- Solutions with water circulation cloud infrastructure
- Reclaimed water
- Water distribution management, including leakage management

Business Area

The Life Business contributes to the well-being of all people by improving the productivity of the customers' entire value-chain from basic research to logistics and services in the life science, pharmaceuticals, food, bioprocesses, and water industries.

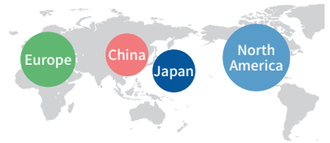


	Life Sciences	Pharmaceuticals, Food, Bio	Water
Customer Trends	• Increase in personalized medicine studies • Increasing needs for sophistication and automation in the laboratory experiment • Accelerating open innovation • Growing demand in the live cell imaging field	• Progress in biotechnology • Advances in technologies such as genome analysis /manipulation and cell processing • Implementation of automation and autonomy through smartification and digitization • Increasing the penetration rate of digital twins	• Increasing water demand due to population growth • Active development of water sources for stable supply • Increased investment in monitoring, control, and DATA fields • Provide diversified solutions to meet regional and country-specific needs
	• Enhance portfolio and product lineup through M&A and alliances • New entry from IT and software companies		
Competitive Environment	• Severe competition with industry giants	• Aggressive entry from the IA industry	• Many competitors exist in each region and country
Strengths, Opportunities	• Unique and innovative technologies and advanced development capabilities in live cell imaging • Knowledge and expertise in the cell field	• Wide variety of solutions to support from on-site to the management level • Global sales and service network and extensive implementation track record • Measurement and control technologies for the biomaterial manufacturing process • Digital twin technology	• Extensive track record of deliveries in the Japanese water and sewage market • Total project execution capability for integration includes electric instrumentation

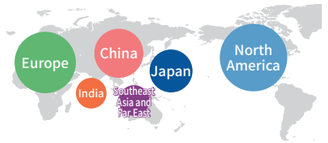
Business Development and Regional Strategy

- Center of Excellence (CoE), sharing the experience and know-how accumulated in Japan with other regions.
- Expand business in larger markets such as North America, Europe, and Asia

Life Sciences

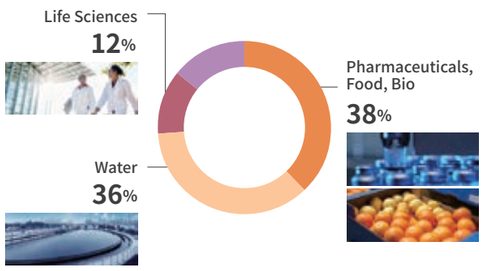


Pharmaceuticals, Food, Bio

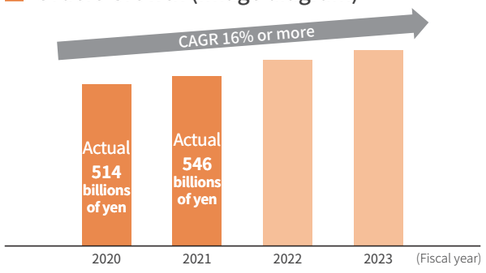


Water

Industry Split (Orders Received in Fiscal year 2021)



Orders Growth (Image diagram)



Fiscal Year 2021 Review and Future Growth Strategy

Orders received in fiscal year 2021 were ¥54.6 billion, up ¥3.2 billion from the previous year and up 4.4%, excluding the impact of the foreign exchange rate.

In the Pharmaceuticals and Food Business, orders were strong at ¥20.8 billion, 12% increase over fiscal year 2020, due to strong MES and productivity improvement businesses. We continue to develop human resources for a value creation approach for the pharmaceutical and food business to expand overseas. In the Water Business, we won a water supply management system order from the national water company of Senegal and an integrated water facility management system from Ethiopia's Addis Ababa Water and Sewerage Authority. We are also actively taking on the challenge of creating new value through initiatives such as seawater desalination projects and the proof of concept for optimizing operations at a wastewater reclamation facility producing potable water.

In the Life Business, we also launched new products and actively engaged in M&A and alliance activities. In November, we acquired Insilico Biotechnology, a developer of the innovative bioprocess Digital Twin Technology. In December, we also launched the Single Cellome System SS2000 for subcellular sampling. We will continue developing new products while improving the functionality of existing products.

In the pharmaceutical, food, and water industries, we see a strong willingness to invest in process sophistication, including productivity, safety, and quality improvements. We will continue to expand overseas in areas where we have traditionally been strong in Japan. As a result, we are seeing a steady increase in inquiries from overseas customers. We will continue to achieve AG2023 by driving growth in the biotechnology business, including M&A and alliances, and advancing the solid development of existing businesses.

Measuring Instruments Business / Aviation and Other Businesses

Measuring Instruments Business

As "The Precision Makers*" in pursuit of accuracy and precision, we provide cutting-edge measurement solutions.

*The Precision Makers: It is what we are, in pursuit of precision measurements.

Together with our customers and as their trusted partner, we will measure the future of the Earth for the realization of sustainable technology innovation.

Masaharu Yamazaki
President, Yokogawa Test & Measurement Corporation

Key Strategies

- Decarbonization Business
  - ✓ Develop high-precision measurement solutions for electric energy conversion technology
  - ✓ Develop a data solution business based on an integrated measurement software platform
- Communication Business
  - ✓ Focus on the advanced optical device/equipment and fiber optic markets
  - ✓ Provide optical and electrical measurement technologies and software solutions
- Well-being Business
  - ✓ Expand into the medical devices and other markets with pressure source and measurement solutions
- Measurement Solutions Service Business
  - ✓ Establish an interactive communication platform service to improve the customer experience

Business Environment and Business Opportunities

New business opportunities come to us from global environmental initiatives and from the acceleration of social changes and DX triggered by COVID-19.

- In Decarbonization, investment in the new energy and battery markets continues to be strong.
- In Communication, investment in next-generation photonics-electronics convergence elements and Beyond 5G is active.
- In Well-being, further increased attention to improving health, safety, and quality of life in society.

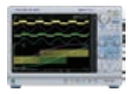
We aim to achieve further business growth by focusing on the above three business areas and the measurement solutions service business in a total of four business areas.

Fsical Year 2021 Review and Future Growth Strategy

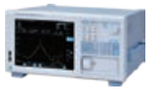
Increased global environment-related investments were only slightly affected by the COVID-19 pandemic in the fiscal year 2021 result. We expect this trend to continue for the time being. We will transform ourselves into a "life cycle measurement solution provider" and contribute to the realization of an affluent society by creating synergistic innovations with leading customers while achieving ambitious business goals.

Providing measurement solutions with a wide range of products to customers in various industries

WT5000 precision power analyzer


DL950 scopecoder

AQ7280 OTDR (optical pulse tester)


AQ6380 optical spectrum analyzer

CA500 multi-function process calibrator

MT300 digital manometer

IS800 integrated software platform

Pick-Up

The information and telecommunications network, an essential social infrastructure, is becoming faster with higher capacity (Beyond 5G) due to the expanded use of 5G and DATA centers. At the same time, a significant increase in power consumption has become a challenge.

Research for the next generation all-photonics networks is accelerating to realize low-power consumption, high-quality and capacity, and to reduce delays with photonics-based transmission from the network to the terminal.

We released AQ6380, an optical spectrum analyzer featuring the highest performance, which allows accurate visualization of the optical modulated spectrum.

In addition, by linking our electrical and optical instruments, we provide high-speed and comprehensive measurement solutions for next-generation photonics-electronics convergence elements.

We support our customers' R&D and product development with cutting-edge technology, contributing to the realization of next-generation communications networks.

Aviation and Other Businesses

(New Businesses and Others since Fiscal Year 2022)

We will make an effort to achieve solid growth and earnings improvement in new businesses.

On April 1, 2022, Yokogawa Electric Corporation and its subsidiary Yokogawa Manufacturing Co., Ltd. transferred the aviation equipment business to Oki Electric Industry Co., Ltd.. In fiscal year 2021, the aviation equipment business reported sales of ¥4.9 billion and an operating income of -¥1 billion.

Meanwhile, in new bio-related businesses, Yokogawa Bio Frontier Inc. is leading strategic efforts to commercialize its businesses quickly.

Yokogawa Bio Frontier Inc.

Yokogawa Bio Frontier Inc. was established in March 2021 to develop, produce, and deliver biomass materials to the world beyond our conventional business of providing solutions for the manufacturing industry.

Launch of High-Performance Nanocellulose Material S-CNF (June 2021)

The company commenced sales of 100% plant-derived sulfated cellulose nanofiber (S-CNF™) and began providing samples. In addition to having the same characteristics as standard cellulose nanofiber, S-CNF in a gel form can be dried to produce a powdered substance that has approximately 1/100th the volume and weight of the gel. This powder costs significantly less to transport and store, and its physical properties can be restored by blending it with water. By adjusting the blending ratio, the physical properties of the cellulose nanofiber can be altered to suit specific applications.

Started sales of Panacea, a Microalgae-Based Bio-Stimulant, Contains Elements Necessary for a Plant to Live and Grow (June 2021)

Panacea™, developed by Alga Energy of Spain, and other bio-stimulants* were launched in Japan. Products made from microalgae play a role in maintaining the health of crops by allowing plants to produce their maximum possible output.

*Agricultural bio-stimulant. Substances or microorganisms that improve the natural vitality of a plant, and its resistance to environmental stresses such as cold and heat, promote growth and improve quality.

amnimo Inc.

amnimo, launched in May 2018, contributes to realizing IoT and AI convergence by providing easy-to-use, highly reliable IoT devices and software services. amnimo flexibly combines its own IoT devices, cloud applications, and partner components to support customers' process transformation and contribute to their value creation.

Chapter 6

Corporate Governance

Key Points in Corporate Governance

The system ensures greater objectivity and transparency.

1. Since 2007, the Board of Directors has included multiple Outside Directors. Currently, there are five Outside Directors ensuring management objectivity and transparency.
2. The Nomination Advisory Committee and Compensation Advisory Committee shall comprise a majority of Outside Directors.
3. An independent Outside Director shall be the chairperson of the Nomination Advisory Committee and Compensation Advisory Committee.

Structure

Men / Women / Foreign national

	Inside	Outside
Board of Directors	(Chairperson)	
Audit & Supervisory Board		
Nomination Advisory Committee		(Chairperson)
Compensation Advisory Committee		(Chairperson)

Continued Enhancement of Corporate Governance

Until FY20 Continuous enhancement → From FY21 Continuing enhancement

	2005	2010	2015	2021
Outside directors	●1 director ●2 directors ●3 directors		●4 directors	●5 directors, accounting for a majority of the Board of Directors
Voluntary advisory bodies			●Established a Nomination and Compensation Committee	●Established a Nomination Advisory Committee and Compensation Advisory Committee
Compensation system	●Abolished retirement bonuses for Directors		●Introduced a restricted stock compensation plan (RS)	●Introduced a performance-linked stock compensation plan (performance share unit plan: PSU)
Systems and policies	●Revised the Articles of Incorporation to reduce the number of Directors (25→15) Introduced a one-year tenure system for Directors ●Introduced takeover defense measures		●Discontinued (abolished) takeover defense measures ●Established the Company's independence standards ●Established the Yokogawa Corporate Governance Guidelines	●Abolished the positions of Senior Advisor, Advisor, and Honorary Corporate Associate ●Amendment of the Articles of Incorporation regarding an electronic provision system for informational materials for the General Meeting of Shareholders
Other			●Conducted an outside evaluation of the Board of Directors* ●Appointed a woman as an outside Audit & Supervisory Board Member Appointed foreign nationals as officers ●Appointed an Outside Director as chairman of the Board ●Appointed a foreign national as a Director	●Appointment of a female Outside Director (planned) Appointment of female officers

- Using and improving existing systems and frameworks
- Diversifying the Board of Directors, and enhancing information disclosure
- Creating global human resource system and appraisal/compensation system for Group
- Enhancing Group governance
- Strengthening internal control and risk management systems

* Once every three years. Self-evaluation in other years

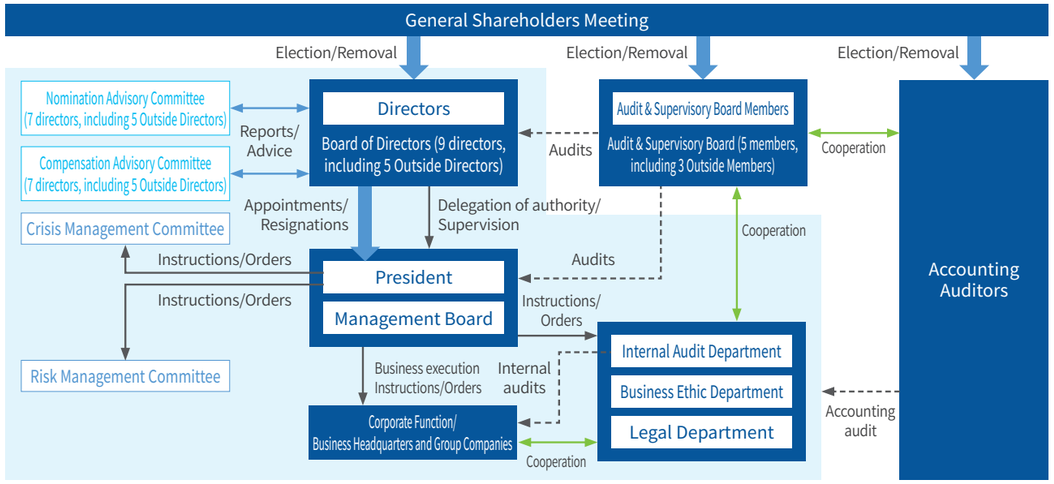
The Group will strive to increase the speed and transparency of decision-making, enhance corporate value, and earn the trust of all stakeholders.

■ Basic Views on Corporate Governance

The Yokogawa Group has established a corporate philosophy, the Yokogawa Philosophy, and Standards of Business Conduct for all members, and strives to ensure the appropriateness of all relationships with stakeholders, grow sustainably and increase corporate value over the medium and long terms. In addition, based on the philosophy that "a company is a public entity in society," the Group positions the earning of the trust of all stakeholders, including shareholders, customers, business partners, employees, and society, via sound and sustainable growth, as its basic corporate management mission. To maximize its corporate value, the Group believes that efforts such as thorough compliance, appropriate risk management, and information disclosure to ensure a constructive dialogue with shareholders and other stakeholders are important. The Group formulates these Yokogawa Corporate Governance Guidelines to serve as its basic policy for the continued improvement of corporate governance in line with the above views. The transparency of the actions of the Board of Directors and the speed of their decision-making is improved through deliberations between Directors who are well versed in the Company's business and Outside Directors who maintain a high degree of independence. In addition, Audit & Supervisory Board Members, including outside Audit & Supervisory Board Members, shall work to enhance the auditing of management through the strict auditing of the legality and rationality of the work carried out by directors and the validity of their decision-making processes.
The Board of Directors is evaluated every year to enhance the appropriateness of the Directors' execution of their duties and to improve efficiency through the objective evaluation and analysis of the effectiveness of the Board of Directors.

■ Corporate Governance System

The company, structured as a company with an audit & supervisory board, shall invite independent outside directors and independent outside Audit & Supervisory Board Members who are independent of the current management to enhance the capabilities of the Board of Directors, which supervises the Directors' execution of their duties, and the Audit & Supervisory Board, which supervises the Board of Directors. In addition, the Company shall position both the Nomination Advisory Committee and the Compensation Advisory Committee as voluntary advisory bodies sharing their opinions when consulted by the Board of Directors regarding the nomination of directors and the determination of their compensation, thereby supporting the Board of Directors and the Audit & Supervisory Board and further strengthening corporate governance. In addition, Audit & Supervisory Board Members, including independent Outside Audit & Supervisory Board Members, shall work to enhance the auditing of management through strict audits of the legality and rationality of the work carried out by the directors and the validity of their decision making processes.

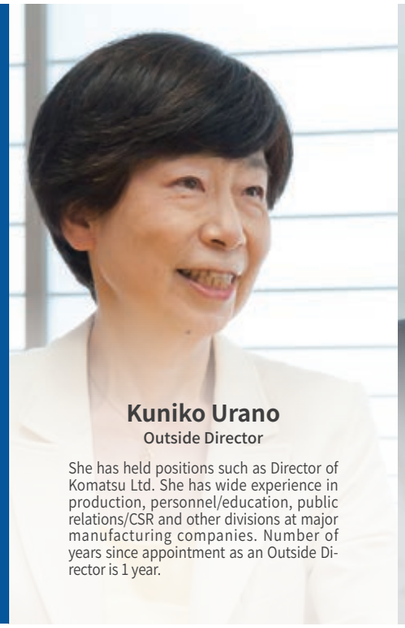


For more detailed and specific information about Corporate Governance, please refer to our website.

Japanese https://www.yokogawa.co.jp/about/ir/governance-ja/ English https://www.yokogawa.com/about/ir/governance/

Round-Table Discussion with Outside Directors

What will be needed for an effective and transparent Board of Directors and future innovation is a sense of speed and visualization.

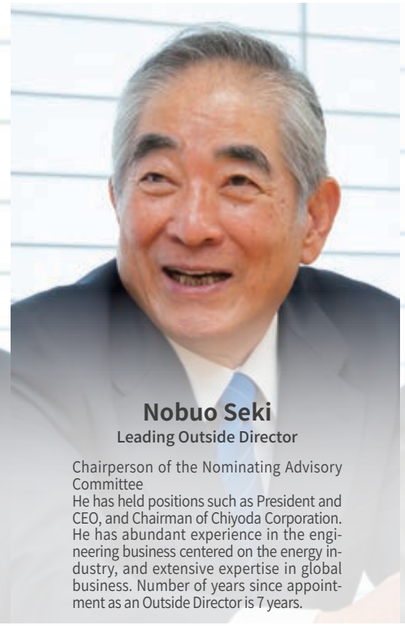


Kuniko Urano
Outside Director

She has held positions such as Director of Komatsu Ltd. She has wide experience in production, personnel/education, public relations/CSR and other divisions at major manufacturing companies. Number of years since appointment as an Outside Director is 1 year.

Shiro Sugata
Outside Director

Chairperson of the Compensation Advisory Committee
He has held positions such as President and CEO of Ushio Inc. He has abundant experience in the development and marketing of industrial instruments, and extensive expertise in global business. Number of years since appointment as an Outside Director is 6 years.



Nobuo Seki
Leading Outside Director

Chairperson of the Nominating Advisory Committee
He has held positions such as President and CEO, and Chairman of Chiyoda Corporation. He has abundant experience in the engineering business centered on the energy industry, and extensive expertise in global business. Number of years since appointment as an Outside Director is 7 years.

Akira Uchida
Outside Director

He has held positions such as Senior Vice President (Member of the Board) of Toray Industries, Inc. He has wide experience in the corporate administration field centered on the Finance and Controller's Division. Number of years since appointment as an Outside Director is 3 years.

Takuya Hirano
Outside Director

He has held positions such as President of Microsoft Japan Co., Ltd and Vice President of Microsoft Corporation. He has a wide range of practical experience in business divisions at a major global IT company and has a wealth of experience as a manager, such as the president of the Japanese subsidiary of the company. He was newly elected in June 2022.

A round-table discussion was held in which outside directors Nobuo Seki, Shiro Sugata, Akira Uchida, Kuniko Urano, and Takuya Hirano objectively discussed the functions of the Board of Directors and what Yokogawa should do to accomplish a transformation in the face of a rapidly changing business environment. Through this frank and direct exchange of views, the importance of leveraging the advantages that Yokogawa has cultivated over the years stood out.

Moderator: Regarding the roles and functions of the Board of Directors and the status of discussions, please tell us your frank opinions on the current situation, what issues you see, and what can be done to improve things.

Continuous innovation at the foundation of the mid-term business plan
Strengthening the functions of the Board of Directors through cooperation between outside directors and outside members of the Audit & Supervisory Board

Nobuo Seki: My seven years as an outside director can be summed up with the one phrase "constant transformation." During this period, three mid-term business plans have been formulated and implemented, namely, Transformation 2017, Transformation 2020, and Accelerate Growth 2023 (AG2023). I believe that the underlying theme of all these plans has been transformation, and I think everyone shares this assessment.

Also, I feel that sufficient improvements to corporate governance have been made over the past seven years, and I do not hesitate to say that Yokogawa can be regarded an exemplary company in this respect.

Looking ahead, we will have to pay close attention to whether the ongoing efforts to implement the four basic strategies can achieve the transformation needed to

realize the ambitious target of becoming a trillion-yen company by fiscal year 2030.

Shiro Sugata: The Board of Directors has been highly evaluated for its effectiveness and transparency. While I am in total agreement about our transparency, I believe that the effectiveness of the Board of Directors and its outside directors will only be recognized once plans are achieved as intended.

I think that another role of outside directors is that we are responsible for expressing our views on the appropriateness of new mid- and long-term plans, new businesses, acquisition projects, and large-scale development projects, and also for monitoring the progress of these undertakings. I have the impression that the company members of the Board, including the company president, are prepared to accept input from the outside directors, and that they can as needed revise their plans and put them into action.

Akira Uchida: As for effectiveness in governance, there may be diverging opinions on this, but I think it is very good that the Audit & Supervisory Board members have provided valuable comments not only on legal matters but also on the appropriateness of strategies and the like. This is one of the reasons why the Board of Directors has become more dynamic. I believe that the way in which the Audit & Supervisory Board members and outside directors work together to coordinate their statements has led to the strengthening of the functions of the Board of Directors.

In my message that appeared in last year's integrated report, I emphasized the importance of integrating corporate strategy and sustainability strategy. The company has been making a steady effort with ESG management, including the identification of priority issues (materiality), and this year a sustainability committee was established. By closely tracking the progress that is achieved and following up on any issues, I believe that this committee will ensure steady progress is made in the implementation of the company's sustainability strategy. At the same time, the company has identified six areas* in which it will contribute through its business activities toward the year 2030. However, the company has not yet established a method for determining the financial impact of the contributions made in these six areas. By creating a system that can accurately do this, we believe that the company will be able to integrate its sustainability and corporate strategy and that this will contribute to its corporate value.

*Achieving carbon neutrality, improving efficiency in society & industry, optimizing the plant lifecycle & protecting the environment, improving health & safety, creating a resource recycling ecosystem, and creating workplaces where people can fulfill their potential

Kuniko Urano: The outside directors all bring their own point of view to discussions based on differences in their area of expertise and work experience, and so I have the impression that the Board of Directors is suitably diverse.

I also feel that the setting of the agenda is very creative. Rather than focusing on detailed short-term items, the

agenda is set to focus discussion on topics from a medium- to long-term perspective, and I have the impression that this is worked out in a very ingenuous way. I also feel that the company's executive officers are taking a very earnest and bold approach in everything that they do.

As an outside director, I am mindful of the need to check what progress is being made in the attainment of individual goals, but more than that, I think we need to closely follow changes in society and base our statements on that. When unexpected things happen in the business environment, we should constantly reflect on what changes Yokogawa needs to make, what should be kept the same, and what risks and opportunities there are for each course of action.

Takuya Hirano: I just took office as an outside director earlier this year, and I feel that the Board of Directors has an open atmosphere and that it is very easy to speak out. The members all respect each other. There is a professional friendliness, and at the same time I feel that the environment allows one to convey opinions and feedback without hesitation, and to engage in discussion. Also, it is clear everyone strongly believes that we must make changes.

Speed and visualization required
In-depth discussions on institutional design changes

Mr. Hirano: I would like to say a few words about Yokogawa's future transformation. It overlaps with the contribution that I will personally have to make from here on, but I think speed and visualization are the keywords. I believe that visualization is needed to manage the changes that will be necessary to achieve the AG2023 goals and that this must be matched by speed in execution. To speed things up, I think that visualization and operational efficiency (including in managerial accounting), the clarification of decision making, and governance in the global business will all become increasingly important.

Mr. Sugata: Speed is a very important point. I would like to propose specific measures for this purpose. For instance, there may be issues to consider that relate to institutional design, such as the shift from being a company that is structured based on a board of corporate auditors to being a company that is structured based on a nominating committee. This point was raised during last year's evaluation of the Board of Directors, and it was impressive that, unlike the other outside directors, many internal directors endorsed this. Behind this I think there is the strong desire to leave business decision making to the company's executive officers. Apart from the pros or cons of making changes in our institutional design, I believe from this point of view that it is necessary to consider and implement measures that will speed up management, including reviewing the decision-making authority and boldly delegating authority.

Mr. Uchida: As one more way of looking at the changes in institutional design, after considering different examples, I have a very good impression of Yokogawa's current governance system. However, once a company is structured based on a nominating committee or some similar body, it does not mean that everything will speed up and get better, and sometimes effectiveness does not increase at all. To increase the speed of management, it is not enough just to change the institutional design. I think it is important to delegate considerable authority and establish a clear chain of command.

Mr. Seki: I agree with taking a deeper look at institutional design. Regarding the third-party evaluation by the Nomination Advisory Committee, discussions are proceeding in the same direction regarding the transition to a company that is structured based on a nominating committee etc., and I feel that the situation is changing. As Mr. Sugata says, there is still room for discussion, so I think we need to make sure not to cause confusion here.

Also, regarding the visualization that Mr. Hirano mentioned, SG&A expenses are an example of a subject that comes up for discussion during performance evaluations and the like, and the method for their management may be too elaborate, so explanations of their increase or decrease are inconsistent and difficult to understand. I think that proper visualization will make it easier to perform a correct evaluation.

Mr. Uchida: Just to add a comment about the visualization of SG&A expenses, we know that the SG&A ratio is the reason why profitability is lower than that of competitors, but we are not seeing significant improvement. I think we can make further improvements by strengthening Group management, such as by separating and managing variable and fixed costs, and by making it possible to see them in chronological order.

In terms of speed, I feel that it will be more effective to improve the willingness to take risks and the ability to get things done. For example, I believe that Yokogawa must accelerate the reorganization of the control business into the Energy & Sustainability, Materials, and Life business segments that it set out and executed in the long-term business framework.

Also, recently, President Nara has been saying that it's time for the entire Group to move ahead based on global corporate strategy. I think that perception is correct. To execute that, Yokogawa's headquarters must have the ability to rapidly unite and bring together all global operations, something that is not yet completely within its grasp as an organization. Yokogawa's corporate culture may have something to do with that. It also relates to the institutional design discussion mentioned earlier, but I think priority should be given to simplifying the company's organization and clarifying its command and control, while retaining all the good aspects of its corporate culture.

Mr. Seki: I agree with Mr. Uchida's point about the necessity of being able to get things done. Changes in the institutional design that give executive officers greater responsibility will put them under more pressure and lead to changes in attitudes that could have an impact on profitability and productivity. The officers have also mentioned the benefits of such changes in the institutional design. However, it is necessary to consider whether this can be realized only through institutional design changes, and to discuss these matters in greater depth based on a shared recognition of what our essential objectives are.

Acceleration of the reorganization of the control business into three business segments also seems to require improvements to the system so that the people at the top of each segment can properly fulfill their P&L responsibility. I think there is room for improvement in strengthening responsibility and authority.

Ms. Urano: Visualization and speed are two sides of the same coin. Regarding visualization, Mr. Uchida pointed out that the system should be made simpler, and that there is room for improvement, especially with regards to the financial area. I have been thinking the same for a long time.

Going forward, Yokogawa will increasingly engage with customers in a variety of fields and domains, as well as globally. In addition, each department will need to deal directly with customers. In this case, decentralized management may be required. That is why I think it is necessary to simplify and make systems easier to understand, so that both visualization and speed can be realized.

Mr. Hirano: I have experience working in a foreign company, and so in managerial matters I do think it's important to maintain a global perspective. Efforts to drive change tend to become inward-looking. At such times, it is important for the Board of Directors to have a broad worldview as it carries out its discussions, i.e. regarding competitor trends and the company's responses with a global perspective.

I believe that speed and visualization will both be very important as Yokogawa implements its plans for transformation with a global perspective.

Mr. Seki: We have heard various opinions on Yokogawa's transformation, and the outside directors and outside members of the Audit & Supervisory Board have met to hold candid discussions on this topic. I have also informed the company's executives, including the executive officers, about the issues that have been pointed out today.

Would it be better to strengthen command and control, to simplify systems, to avoid confusion by not trying to implement too many measures at once, or to simply better clarify our priorities? Yokogawa's top management is seriously considering these matters and is moving ahead with next steps, and I believe that we are making progress.

Challenges for fostering innovation and developing human resources
Concentration and enhancement of technology development functions

Mr. Seki: In relation to transformation, I would like to hear your opinions on topics such as human resources and the fostering of innovation. For example, putting in place the systems needed for DX and IT utilization, and developing excellent human resources are management issues of the utmost importance, and many measures have already been set into motion to accomplish this. One of my concerns is that we may need to put a little more effort into developing the technologies that will spur innovation. I would like to hear everyone's thoughts on this.

Mr. Uchida: Yokogawa operates in manufacturing, so it is important for the company to be involved in developing new technologies. One concern I have is regarding how the R&D function (the Innovation Center) sits within the Marketing Headquarters, and the question of just how effective it is.

Currently, each business and region has a technology development function that is developing its own unique technologies, and this is too dispersed. Because the Innovation Center does not supervise this as a whole, there is the view that our actions to bring about innovation are too scattered. Because lateral collaboration, the movement of people, and the fusion of technologies are important in R&D, I believe that integration, rather than decentralization,

can increase the power of innovation. At a time when it is becoming more important for the company headquarters to strengthen centralized management, I think it would be better to make the Innovation Center independent from the Marketing Headquarters and give it the role of unifying the research and technology development functions for the entire Group. I am sure that this decentralized approach to technology development is working well at present and am not talking about changing it immediately, but I have shared my thoughts on this with Yokogawa's executives.

Mr. Sugata: In response to the point about whether we should decentralize or integrate technology research, I will just point out that Yokogawa has been operating as a decentralized organization for many years, but is now globally transitioning to a business structure that is centered on three industry segments. As Mr. Uchida pointed out earlier, it has been a year and a half since we started this transition, but I feel that there are some things that cannot be done overnight. This isn't something where we can just push forward by issuing orders. Because of differences in management methods and in the history of the employees working in each region, I know that this isn't easy.

I do think, however, that it is necessary for each and every employee to be strongly aware of the fact that the entire Group is moving in this direction and to take whatever actions are needed to make this happen.

Ms. Urano: I believe that we are now at a time where, more than ever before, serious thought must be given to how to make the most effective use of human capital. The areas where Yokogawa will compete, whether that be IoT/DX or the global business arena, are all highly competitive and demanding. For the company to succeed, each of its approximately 20,000 employees must fully realize their potential. Of course, there is the idea of securing human resources through M&A, but that is only one option. To come out ahead in this competition, each individual must have a positive mindset and improve their abilities. To achieve this, it is necessary to carefully reevaluate the company's human capital, such as what kind of people and how many people there are, and what their strengths are. This also is visualization. Rather than creating detailed rules and systems, it is important to consider and implement optimal policies that take both the quantity and quality of human capital into consideration. Yokogawa's level of success in growing as a company will depend on how it utilizes its resources.

While discussions like this tend to focus narrowly on the question of whether a particular business unit has enough people or not, I think it's important for the management at the company headquarters to take a careful look at these matters and develop an optimal overall strategy.

Mr. Hirano: There are many things that need to be focused on to promote the transformation of the company, but I would like to express my thoughts on four points that deserve particular attention.

The first is, as Ms. Urano says, to consider how to empower employees. That is directly related to mindset. The second thing is to get closer than ever to customers. This is not just doing whatever a customer wants, it is about thinking up and proposing new ways of doing things. Third, to accomplish the above we need to change our internal processes and operations. The fourth and most difficult thing is to design new products, services, and business models.

We must transform each of these four domains. To accomplish this I think we will need to adopt new ideas and consider new ways to empower people while respecting the conventional approaches. When people talk about mindset, that is often just passed off to HR to handle, but I think that not just personnel systems, but also firm leadership and the ability to establish an appropriate evaluation system, will be necessary.

Moderator: **Lastly, please tell us how you would like to contribute to the enhancement of corporate value, and how you would like to use and demonstrate your experience and skills to fulfill your roles and responsibilities.**

Insights of outside directors on what is needed to improve corporate value
The decision to take risks when selecting investments

Mr. Seki: I recognize that my role as the leading outside director this fiscal year is to coordinate between the outside directors and executive officers, to build relationships with the members of the Audit & Supervisory Board, to discuss issues just between the outside directors and the outside Audit & Supervisory Board members, and to convey the results of those discussions to the management team. As the coordinator for the team of outside directors, I intend to work with the chairperson of the Board of Directors, discuss fundamental matters in a logical manner, and through these activities support the company.

I've been through a lot in my long career, and I have also had my share of failures. With the knowledge and insights that I have gained through learning experiences with contracts and so on, I hope to make a contribution in areas such as Project Lotus, a cross-organizational project led by employees (in their 20s, 30s, and 40s) that was launched to plan and create scenarios for the year 2035. This is an important mid- to long-term management initiative. Even though it may go beyond the role of an outside director, I hope to take part in the exchange of ideas and offer my support with such bottom-up initiatives.

Mr. Sugata: I believe that outside directors serve as a check and as a catalyst for the Board of Directors. Outside directors do not drive or promote the business; rather, our position is one in which we are to view from the sidelines and confirm all aspects of Yokogawa's business, whether good or bad. And I think our statements should bring things to the attention of the executive officers and spur action. I also believe that the role of outside directors should be to try and improve benefits for all stakeholders, including, of course, the company's shareholders. While keeping the needs of all stakeholders in mind and considering what things the company must do, I hope that we can be of assistance in making sure that the right decisions are taken.

Mr. Uchida: I sometimes think that Yokogawa could be a little more aggressive when it comes to taking risks with investments.

For example, in its investment decisions, the company sets theoretical hurdle rates, and takes overseas risks and new business risks into consideration when evaluating risk premiums, and that thinking is correct. However, I do think that there are situations where the hurdle rate could be reduced slightly based on long-term, strategic considerations. As an outside director, I would like to encourage such risk-taking.

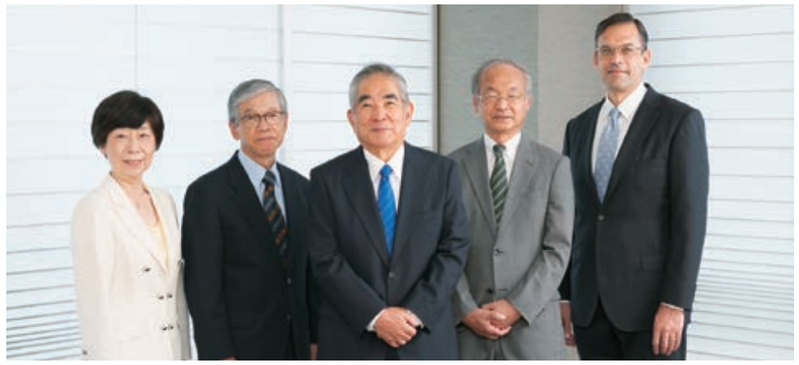
Ms. Urano: People who are inside a company sometimes don't understand all its merits. When it comes to my attention, I intend to point out what aspects of its culture the company must not lose. For example, Yokogawa is a company with many people who have been hired in mid-career, and some of them are in important positions. They tend to be more flexible in adopting the positive aspects of both Yokogawa and other companies. This can be a great advantage for our future growth and a very important base for alliances with other companies and M&A.

I also recognize that one of my roles is to contribute in the areas of gender and diversity. As I enter my second year in this role, I will seek to further address gender and diversity issues.

Mr. Hirano: I came from an IT company. One definition of IT companies is that they are organizations that keep changing. I have been involved in DX for a long time, which is one of the topics we mentioned earlier. And now, IT is part of our society's infrastructure, just like the electricity, water, rail, and transportation systems that we all rely on.

When we refer to IT companies, we have traditionally thought of software companies, but it is no exaggeration to say that all companies are IT companies nowadays. Yokogawa too must take this perspective. Based on this view that IT is a form of infrastructure that will never cease to change, I want to contribute to Yokogawa as an IT company.

I've also seen the use of both best practices and worst practices at foreign companies, and hope to help improve the Yokogawa's corporate value by sharing this knowledge.



Corporate Governance

Nomination Advisory Committee

The Nomination Advisory Committee shall provide recommendations to the Board of Directors regarding subjects such as the nomination of candidate Directors and Audit & Supervisory Board Members, the evaluation, appointment or dismissal of the President and Chief Executive Officer, the appointment or dismissal of executive officers, proposals for the dismissal of Directors and Audit & Supervisory Board Members and the criteria (qualities, achievements, etc.) required of candidates for directors, Audit & Supervisory Board Members and executive officers, following deliberations in accordance with the standards and procedures prescribed to ensure optimal placement for the Group's sustainable growth and corporate governance from the perspective of all stakeholders.

Chairperson of the Nominating Advisory Committee
Nobuo Seki

My name is Nobuo Seki, and this year I am the chairperson of the Nomination Advisory Committee. The committee is well positioned to carry out its roles, and is structured in such a way as to facilitate the conduct of discussions. Furthermore, the secretariat's office has been strengthened to provide me in my role as an outside director effective support that ensures the timely consideration of important internal information.

The focus this fiscal year has been to deepen discussions on the ideal form of the Board of Directors, while referring to the results of last fiscal year's outside evaluation of the Board of Directors, and to further strengthen the governance structure and improve management efficiency. As an example, institutional design is an important subject for consideration. We will also continue to discuss the composition and diversity of the Board of Directors in response to changes in the business environment, share our understanding of the situation with the Board of Directors, and steadily implement succession-related activities for the CEO, the chairman of the Board of Directors, and internal and external officers. In order to ensure that the company achieves the goals set out in the long-term business framework and the mid-term business plan, we place great importance on supporting the ongoing transformation of our business and management. As such, I and the other members of the committee will strive to operate the committee in a highly effective manner while confirming the appropriateness of discussions and results.

Activity Report

Deliberations were held 14 times in total, and the following matters were discussed:

- Nomination of candidates for Directors and candidates for Audit & Supervisory Board Members
- Evaluation of the President and Chief Executive Officer
- Election of Vice Presidents
- A review of the criteria (qualities, achievements, etc.) required of candidates for Directors, Audit & Supervisory Board Members and Vice Presidents

Composition

as of June 22, 2022

Outside directors	Nobuo Seki ◎
Outside directors	Shiro Sugata
Outside directors	Akira Uchida
Outside directors	Kuniko Urano
Outside directors	Takuya Hirano
Chairman	Takashi Nishijima
President and CEO	Hitoshi Nara

◎ Chairperson

■ Skill Matrix

In light of future initiatives aimed at increasing corporate value over the medium to long term, we discussed the diversity in gender, nationality and other areas, as well as the diversity in experience, skills and expertise that are highly needed in our Company and reviewed the expertise and experience that directors and Audit & Supervisory Board Members are expected to possess.

■ Expertise and Experience of Directors and Audit & Supervisory Board Members

		Corporate management	Internationality Global experience	Treasury / Finance	Technology / Development	IT / Digital	Sales / Marketing	Human resource Human resources development	Legal Risk management	Sustainability ESG
Directors	Takashi Nishijima	●	●		●		●			
	Hitoshi Nara	●	●				●			
	Junichi Anabuki			●					●	●
	Yu Dai	●	●		●	●				
Outside Directors	Nobuo Seki	●	●		●				●	
	Shiro Sugata	●	●		●		●			
	Akira Uchida		●	●						●
	Kuniko Urano							●		●
	Takuya Hirano		●			●	●			
Audit & Supervisory Board Member	Kouji Maemura						●	●		
	Hajime Watanabe		●	●					●	
Outside Members, Audit & Supervisory Board	Yasuko Takayama								●	●
	Makoto Ohsawa		●	●						
	Masaru Ono		●						●	●

■Reasons for Setting the Expertise and Experience

Corporate Management: In order to achieve the transformation set out in the long-term business framework and in the mid-term business plan AG2023 amid major changes in the business environment, such as structural changes in the energy industry and advances in digital technology innovation, a wealth of experience and knowledge in the field of corporate management in general is required, including leading the transformation as head of the corporate headquarters of a major company.

Internationality, global experience: A wealth of experience and knowledge in global business and overseas culture and environments is required to develop and implement mid- to long-term growth strategies for the Company, which operates globally (Ratio of overseas sales: approximately 70%, Ratio of overseas employees: approximately 65%), and to properly supervise global management.

Treasury / Finance: Solid experience and knowledge in the fields of treasury and finance are required to build a strong financial base to support the sustainable growth in the Company and to develop a financial strategy to promote aggressive investment in growth, including M&A and alliances, and to realize appropriate shareholder returns.

Technology / Development: To further evolve and develop the Company's strengths in technology and development in the fields of measurement, control and information to achieve growth through innovative solutions incorporating new technologies, it is necessary to have solid experience and knowledge in the fields of innovation, technology, development, quality and the environment.

IT / Digital: Achieving new solutions through integration, autonomy and digitization and creating new value through OT/IT convergence and the System of Systems connecting multiple systems require extensive experience and knowledge in the fields of business operations and business model transformation using advanced IT and digital technologies.

Sales / Marketing: To achieve growth by solving customers' real problems through innovative solutions, it is essential to transform business models and to plan and develop new solutions that meet market needs, as well as to develop a strategy to expand orders and sales, which require extensive experience and knowledge in the sales and marketing fields.

Human resource, Human resources development: As the importance of human capital management increases, in order to transform the company into what it aims to be in the medium to long term, it is important for the Company to develop and implement human resources strategies, such as securing, developing, and utilizing management personnel, DX personnel, and consultant personnel, in conjunction with management strategies, which require solid experience and knowledge in the fields of human resource and human resources development.

Legal, Risk management: Achieving sustainable corporate value growth requires risk management that can accurately and quickly address rapidly changing and diversifying risk factors in a rapidly changing business environment and requires solid experience and knowledge in the fields of risk management, compliance and law.

Sustainability ESG: Under Yokogawa's Purpose of "Utilizing our ability to measure and connect, we fulfill our responsibilities for the future of our planet," to sustainably increase corporate value, it is necessary to achieve both growth through ESG-focused management and the creation of social and environmental value, and it is necessary to have extensive experience and knowledge in the fields of sustainability and ESG.

■ Reasons for Election as Outside Directors and Outside Audit & Supervisory Board Members and Attendance

They meet the requirements of an independent officer pursuant to Article 436, Paragraph 2 of the Securities Listing Regulations of the Tokyo Stock Exchange, and the standards of independence in the Company. The Company nominated them as independent officers.

Name	Reasons for Election and Status of Attendance in Fiscal Year 2021
Outside Director Nobuo Seki	Mr. Nobuo Seki properly supervises management as an Outside Director. He was appointed as an Outside Director so that he can achieve greater operational fairness, objectivity, and transparency with respect to supervising management of the Company based on his wide knowledge as a corporate manager, his abundant experience in the engineering business centered on the energy industry, and his extensive expertise in global business. Attendance at meetings of the Board of Directors: present at 14 of the 14 meetings
Outside Director Shiro Sugata	Mr. Shiro Sugata properly supervises management as an Outside Director. He was appointed as an Outside Director so that he can achieve greater operational fairness, objectivity, and transparency with respect to supervising the management of the Company based on his wide knowledge as a corporate manager, his abundant experience in the development and marketing of industrial instruments, and his extensive expertise in global business. Attendance at meetings of the Board of Directors: present at 14 of the 14 meetings
Outside Director Akira Uchida	Mr. Akira Uchida properly supervises management as an Outside Director. He was appointed as an Outside Director so that he can achieve greater operational fairness, objectivity, and transparency with respect to supervising the management of the Company based on his wide knowledge as a corporate manager and extensive experience in the corporate administration field centered on the Finance and Controller's Division. Attendance at meetings of the Board of Directors: present at 14 of the 14 meetings
Outside Director Kuniko Urano	Ms. Kuniko Urano properly supervises management as an Outside Director. She was appointed as an Outside Director so that she can contribute to greater operational fairness, objectivity, and transparency with respect to supervising the management of the Company based on her wide knowledge as a corporate manager and extensive experience in the divisions of production, personnel/education, public relations/CSR, etc., in major manufacturing companies. Attendance at meetings of the Board of Directors: present at 11 of the 11 meetings
Outside Director (New) Takuya Hirano	Mr. Takuya Hirano has a wide range of practical experience in business divisions at a major global IT company and has a wealth of experience as a manager, such as serving as the president of the Japanese subsidiary of the company. He was appointed as an Outside Director so that he can contribute to greater operational fairness, objectivity, and transparency with respect to supervising management of the Company based on this experience.
Outside Audit & Supervisory Board Member Yasuko Takayama	Ms. Yasuko Takayama worked for a major company in the consumer market where she gained extensive practical experience, including responsibility for CSR, and acting as a full-time audit and supervisory board member. She also has a wealth of experience as an outside executive at various companies. Accordingly, she was appointed as an Outside Audit & Supervisory Board Member because she is expected to execute effective auditing that reflects this experience. Attendance at meetings of the Board of Directors: present at 14 of the 14 meetings, Attendance at meetings of the Audit & Supervisory Board: present at 17 of the 17 meetings
Outside Audit & Supervisory Board Member Makoto Ohsawa	Mr. Makoto Ohsawa has wide knowledge based on his perspective as an experienced corporate manager and his extensive range of business activities, and also has a wealth of experience acting as an outside executive at various companies. Accordingly, he was appointed as an Outside Audit & Supervisory Board Member because he is expected to execute effective auditing that reflects such experience. Attendance at meetings of the Board of Directors: present at 14 of the 14 meetings, Attendance at meetings of the Audit & Supervisory Board: present at 17 of the 17 meetings
Outside Audit & Supervisory Board Member Masaru Ono	Mr. Masaru Ono is a lawyer with wide knowledge of the corporate legal affairs and finance fields. Accordingly, he was appointed as an Outside Audit & Supervisory Board Member because he is expected to execute effective auditing that reflects such extensive knowledge from his extensive range of business activities in economic and educational circles. Attendance of board of directors meetings: present at 14 of the 14 meetings Attendance at meetings of the Audit & Supervisory Board: present at 17 of the 17 meetings

* For Outside Director Kuniko Urano, we have described her attendance at meetings of the Board of Directors convened since she assumed the position on June 23, 2021.

Compensation Advisory Committee

The Compensation Advisory Committee shall provide recommendations to the Board of Directors, in accordance with the standards and procedures, to ensure that the compensation system and the compensation of directors and officers promotes the appropriate aggressive attitude toward the Group's growth, enables the hiring and retention of excellent human talent, and fosters a common perspective held by all stakeholders.

Chairperson of the Compensation Advisory Committee
Shiro Sugata

My name is Shiro Sugata, and this fiscal year I am the chairperson of the Compensation Advisory Committee. The role of this committee is to present appropriate and reasonable executive compensation proposals to the Board of Directors. For this purpose, we obtain a variety of information, such as the status of similar companies, and determine systems and standards that take into consideration duties, responsibilities, performance, and motivation. The recent trend is to lower the ratio of basic compensation and increase the ratio of variable compensation based on short- and medium- to long-term performance. The higher the position, the greater the proportion accounted for by variable compensation. One issue here is the time lag between decisions and actions and results. Executives may benefit from the good performance of their predecessors, or they may forgo short-term results in favor of improving their medium- to long-term performance. Therefore, while calculating executive compensation solely on the basis of result figures is strongly supported from the perspective of transparency and persuasiveness, a qualitative evaluation is also an important factor. In addition, with the globalization of our business and increasing diversity, we now have executives of different nationalities who are working from locations all around the world, and there is the issue of how to align our company's system with the different compensation levels in each country. Recently, there has also been a movement to reflect sustainability efforts and achievements in compensation. While considering all these factors, the ultimate goal of the committee's activities is to benefit all stakeholders.

Activity Reports

The Compensation Advisory Committee held a total of six deliberations, which included the following matters:

- Performance-linked compensation paid in July 2021
- Determination of performance indicators and formulas for performance-linked compensation paid in July 2022
- Confirmation of executive compensation levels by comparison with benchmark companies to verify the appropriateness of current levels of executive compensation, and following the results, increasing the base amount of fixed compensation and performance-linked compensation and reviewing the role of the executive

Composition

as of June 22, 2022

Outside directors	Nobuo Seki
Outside directors	Shiro Sugata ◎
Outside directors	Akira Uchida
Outside directors	Kuniko Urano
Outside directors	Takuya Hirano
Chairman	Takashi Nishijima
President and CEO	Hitoshi Nara

◎ Chairperson

■ Basic Policy for the Compensation, etc. of Directors

The basic policy on the compensation of Directors shall be as follows:

(a) A plan that promotes the sustainable, medium- and long-term improvement of corporate value
(b) A plan that reflects the medium- to long-term management strategy and strongly motivates the achievement of medium- to long-term management objectives
(c) A plan that prevents a bias toward short-term thinking
(d) A plan and monetary amount that secures and maintains excellent human resources
(e) A plan that is transparent, fair and rational for all stakeholders, decided through an appropriate process to ensure these factors

■ Policy for Determining the Compensation, etc. of Officers

1) Compensation of Directors

The amount of compensation of Directors shall be determined individually within the limits approved at the General Meeting of Shareholders.*1 Compensation for Audit & Supervisory Board Members shall also be determined through discussion among the Audit & Supervisory Board members within the limits approved at the General Meeting of Shareholders. *2

*1 At the 142nd Ordinary General Meeting of Shareholders held on June 26, 2018, it was resolved that the maximum amount of compensation for Directors would be 1.6 billion yen per business year (excluding salaries for employees).
*2 At the 128th ordinary general meeting of shareholders held on June 25, 2004, it was resolved that the maximum amount of compensation for Corporate Auditors would be no more than 150 million yen per fiscal year.

2) Composition, Roles and Responsibilities of the Compensation Advisory Committee

The Compensation Advisory Committee, comprising at least three Directors, the majority of whom are Outside Directors, shall be established as an advisory body to the Board of Directors with the aim of enhancing the objectivity and transparency of the process for determining the compensation of Directors and Executive Officers.

i) Members of the Compensation Advisory Committee
The committee comprises three or more Directors, the majority of whom are outside directors.

ii) Roles and Responsibilities of the Compensation Advisory Committee
The Compensation Advisory Committee, in consultation with the Board of Directors, deliberates on the compensation system and decision-making policies regarding Directors and Executive Officers, and reports to the Board of Directors. In addition, the Compensation Advisory Committee, in accordance with the compensation system, determines the details of compensation for individual Directors and Executive Officers.

iii) Measures to ensure that the Committee's Powers are Properly Exercised
The members of the Compensation Advisory Committee, which comprises a majority of independent Outside Directors, will elect a Chairperson, and the amounts of individual officers' compensation are determined based on the compensation system approved by the Board of Directors, thereby ensuring decisions that conform with the aforementioned purpose.

■ Composition of Officers' Compensation

Compensation for internal Directors and executive officers consists of (a) basic compensation, which is a fixed component, and (b) a performance-linked component ((b)-1 annual incentive and (b)-2 medium-to long-term incentive).

Directors and executive officers, excluding Outside Directors, Audit & Supervisory Board Members and non-executive Directors are given performance-linked compensation. This is because variable compensation such as performance-linked compensation is not appropriate for Outside Directors and Audit & Supervisory Board Members, who maintain positions independent from the performance of duties, and as such only fixed compensation is paid to them. This is the same for nonexecutive Directors.

The levels of the compensation of executives are set through a comparison with companies in the same industry and of the same scale, both domestically and internationally, based on the results of surveys conducted by external organizations, and the Company's financial condition.

Compensation levels for each position are based on the 50th percentile level of peer companies. From the viewpoint of flexible management in response to changes in the environment and the acquisition and retention of talented management personnel, compensation levels shall generally between the 25th and 75th percentile.
Compensation for personnel hired overseas may be determined individually based on a compensation benchmark analysis that takes into account the responsibilities of each position based on executive compensation survey data in that overseas region.

Executive category	(a) Base compensation	(b) performance-linked compensation (b)-2 including non-monetary compensation		Remarks
		(b)-1 Annual Incentive	(b)-2 Mid- to Long-Term Incentive	
Directors (excluding Outside Directors and Non-executive Directors)	○	○	○	Executive compensation and employee salaries
Outside Directors and Non-executive Directors	○	—	—	Executive compensation
Audit & Supervisory Board Members	○	—	—	Executive compensation
Outside Audit & Supervisory Board Members	○	—	—	Executive compensation
Non-Director officers	○	○	○	Employee salaries

(a) Basic Compensation
Basic compensation shall be fixed monthly compensation and shall be determined based on the criteria established by the Compensation Advisory Committee in accordance with the roles and positions of the Directors and Executive Officers.

(b) Performance-Linked Compensation
Performance-linked compensation shall be determined by the Compensation Advisory Committee in order to raise awareness of the improvement of business performance in each fiscal year and the enhancement of corporate value in the medium term. It shall be paid in the amount or number calculated according to the degree of achievement of the target (KPI).
The concept underlying performance-linked compensation is as follows:

1. Increase the ratio of performance-linked compensation to total compensation.
2. The higher the position, the higher the ratio of performance-linked compensation to total compensation, with the ratio for the Representative Director set at 60%.
3. Stock-based compensation as a percentage of total compensation shall be at least equal to that of other companies in the same industry or of the same scale.

(b-1) Annual Incentive
The annual incentive in performance-linked compensation shall be calculated by the Compensation Advisory Committee on the basis of the company-wide performance evaluation and individual performance evaluations for a single fiscal year, and shall be paid once a year. The amount to be paid shall be designed to vary from 0% to 200%, based on a value of 100% when the performance target is achieved.

* The ratio of basic compensation to annual incentive when performance targets are achieved is designed so that the higher the position is, the higher the ratio of the annual incentive is set. The lower the position is, the lower the ratio of the annual incentive will be, with the Representative Director's annual incentive being set between 0.75 and 1. The overall average including the Executive Officers is generally 1 to 0.5. This ratio may vary between 1 to 0 and 1 to 1, depending on the degree to which performance targets are achieved.

Figure1 (image)

Base compensation 1	Annual incentive 0.5 (0〜1)

(b-2) Medium-to Long-Term Incentive
Regarding the medium-to long-term incentive, at the 142nd Annual General Meeting of Shareholders convened on June 26, 2018, the Company introduced the performance share unit plan (the "PSU Plan"), a performance-based stock compensation plan, under which the Company's shares and cash are paid in accordance with the extent to which the Company's consolidated return on equity (ROE) target and other targets have been achieved in the final fiscal year of the medium-term business plan.

Subject to the performance targets and other requirements established in advance by the Board of Directors during the period of the Medium-Term Business Plan, the Company determines the amount of compensation based on the medium-to long-term incentive for each eligible Director and Executive Officer by multiplying the base amount of stock compensation established by the Compensation Advisory Committee for each Director and Executive Officer to which compensation will be paid by a coefficient established in advance by the Board of Directors in accordance with the conditions for achieving performance targets (the "payment rate"). Of the amount of compensation, 60% shall be paid in the form of shares of the Company and 40% in monetary terms. The payout rate is designed to vary from 0% to 100% depending on the degree of achievement of the performance target.

Performance targets for medium-to long-term incentive are linked to the medium-term business plan, and are considered to be important indicators in terms of both corporate value and shareholder value. Accordingly, the Company shall use return on equity (ROE), which is an indicator of management efficiency.

The PSU Plan establishes a clawback provision under which, in the event of material fraud accounting or a large loss, it can be requested that all or a portion of the compensation paid as compensation related to the PSU Plan be reimbursed free of charge.

Notes: 1. Based on the idea that the performance objectives that are a part of the evaluation of the entire company's results for the individual year for the annual incentive are significant indicators for the Group to measure sustained growth, the performance objectives have been set for consolidated sales and consolidated return on sales (ROS).

Figure2 (image)

Base compensation 1	Annual incentive 0.5 (0〜1)	Mid- to long-term incentive 0.5 (0〜0.5)

Performance objectives and results in the fiscal year ended March 31, 2021, one of the determinant factors for performance-linked compensation, are as follows:

Performance objectives set for the fiscal year ended Mach 31, 2021		Results in the fiscal year ended March 31, 2021
Consolidated sales	¥413.7billion	¥374.2 billion
Consolidated return on sales	9.9%	8.4%

Notes: 2. The Company believes the performance objectives for the medium-to long-term incentive are connected to the mid-term business plan. Among the business objectives set in TF 2020, the Company has currently chosen return on equity (ROE), an indicator showing the efficiency of management, as the performance objective based on the idea that it is a significant indicator of an increase in both corporate value and shareholder value.

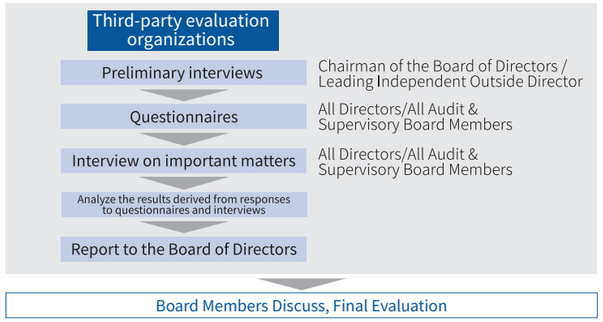
Actual ROE Payment	Rate
Less than 8%	0%
From 8% to less than 11%	(50 + (Actual ROE × 100 − 8) / 3 × 25)%
From 11% to less than 14%	(50 + (Actual ROE × 100 − 11) / 3 × 50)%
14% or higher	100%

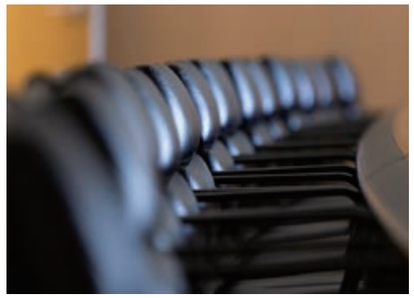
* The actual ROE for the fiscal year ended March 31, 2021 was 6.5%, and the payment rate was 0%.

Third-Party Evaluation of the Board of Directors

Based on the evaluations of each Director and Audit & Supervisory Board Member, each year the Board of Directors shall identify issues for further boosting the strengths and effectiveness of the Board of Directors, and use analysis and evaluations in order to clarify the points that should be emphasized when working on each issue. To make evaluations, the Board of Directors has used third-party evaluation organizations as appropriate.

■ Board Evaluation Process for Fiscal Year 2021





■ Summary of the Fiscal Year 2021 Board of Directors Evaluation Results

It was confirmed that the Board of Directors as it stands is highly effective.

● Roles and functions of the Board of Directors and state of its discussions

- Both external and internal officers have a shared awareness that the Group is facing a major strategic turning point and is in need of a transformation. Amid a drastic change in the environment with intense competition, the Board of Directors and executive team worked to address those market changes with a strong sense of crisis.
- The Board of Directors properly performed its roles and functions based on a suitable organizational design, with its Chairman establishing agenda and facilitating discussions appropriately based on his thorough understanding of the Company's conditions and the Lead Independent Outside Director fulfilling pertinent roles.
- Members were fully recognizant of the fact that sustainability is directly connected to the Group's corporate value, a notion developed through discussions on the long-term business framework and the mid-term business plan.
- It was confirmed that open-minded and active discussions are held at meetings of the Board of Directors, where the atmosphere is welcoming to comments and remarks.

● Size and composition of the Board of Directors

- The current size and composition of the Board of Directors is appropriate for its discussions.
- The fact that independent Outside Directors account for a majority was highly evaluated from the perspectives of independence and objectivity.
- The composition of Members, as to both independent Outside Directors and internal Directors, is well-balanced and appropriate.

■ Efforts for Future Improvement

Based on these Board of Directors evaluation results, the Board of Directors will strive to enhance its effectiveness by working on the following initiatives, so that it can achieve even more effective supervision in order to further accelerate the Company's transformation.

● Further Enhancement of Supervision for Mid- to Long-Term Improvements in Corporate Value

- In light of the evaluation results from the previous fiscal year, the Board of Directors has worked on further strengthening discussions on the Company's general direction and mid- to long-term management strategy. Based on a shared awareness that Yokogawa Electric is facing a major strategic turning point and is in need of a transformation, the Board of Directors will review its stance toward the executive team and how it performs a supervisory function. Specifically, the Board of Directors will further enhance its efforts to prioritize matters and focus on examining important ones, and to hold multiple discussions on important matters and communicate with the executive team.
- Fully recognizant of the fact that sustainability is directly connected to corporate value, the Board of Directors will continue deepening its discussions on sustainability and strive to enhance sustainability-related disclosures.

● Discussions at the Nomination Advisory Committee and Enhancement of Information Sharing to the Board of Directors

- In addition to the conventional discussions regarding succession plans for the CEO, Directors, Audit & Supervisory Board Members and Executive Officers, discussions regarding succession plans for the Chairman of the Board of Directors, Lead Independent Outside Director, Chairperson of the Nomination Advisory Committee and Chairperson of the Compensation Advisory Committee, the tenure of Outside Directors and Outside Audit & Supervisory Board Members, and corporate organs will also be carried out at the Nomination Advisory Committee. With regard to the details of these discussions, information sharing with the Board of Directors will be further enhanced.

● Further Improvements to Information Provided for Supervision

- In the previous fiscal year, an issue was raised regarding further improvements to the quality of proposal materials and explanations, which are important inputs in discussions, and regarding the need for a clear indication of the key points of discussion, to enable further improvement in the quality of discussion. The Company has handled this issue to a certain extent. Based on the recognition that it is at a major strategic turning point and a transformation is necessary, the Company will work for continuous improvement as it was found that there is room for improvement to reach a higher level of effectiveness in supervision.

Initiatives Related to Cross-Shareholdings

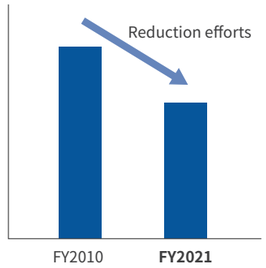
■ Method of Verifying Shareholding Policy and Rationality (Reduction Efforts)

The Group shall strategically hold shares of other companies' stock, provided the shares that are held are determined to contribute to maintaining and increasing corporate value. Regarding all crossholding shares, the Board of Directors shall uphold a policy of keeping the minimum necessary amount of cross-holding shares and decide every year if the holding of the shares is appropriate by individually examining the purpose and economic rationale, etc. for holding each stock from medium- and long-term perspectives. Any strategically held shares that are deemed to be no longer appropriate to hold as a result of the examination shall be sold with the goal of reducing the number of shares held. In the examination, the stocks held are classified into the following three categories, and transaction status, share price and dividends, and capital costs are designated to be the KPIs in the determination of the appropriateness of the holding of the stock.

a. Business partners (for the purpose of maintaining and strengthening business transaction and partner relationships)
b. Financial institutions (for the purpose of conducting financial transactions smoothly)
c. Others (those which do not fall under the above categories)

Specifically, the appropriateness of holding each stock is individually assessed and determined through the process of a to d below.

a. Quantitative assessment of share price (market value, cost and carrying amount after impairment)
b. Quantitative assessment of ROIC, which is calculated on the basis of market value and cost, compared with the share price assessed in a. (After-tax gross income from sales and dividend income are used in the calculation of ROIC.)
c. Qualitative assessment of the purpose of holding, transaction results, an estimate of future transactions, and other factors for each share held.
d. Assessments a. to c. are comprehensively evaluated from perspectives including medium- to long-term economic value, business expansion, and the strengthening of relationships.



■ Voting Rights

The Group shall make decisions regarding the exercise of the voting rights of strategically held shares based on a sufficient examination from the standpoint of increasing the corporate value of the Company and the companies that the Company has invested in over the medium to long term.

In the following cases in particular, the Company shall exercise its voting rights based on a careful examination of whether or not the voting rights should be exercised:

1) Cases where any violation of law, misconduct or anti-social behavior has occurred at the companies in which the Company has invested
2) Proposals that are considered to be likely to undermine the Company's corporate value, for organizational restructuring including mergers, acquisitions or business transfers, the advantageous issuing of shares to third parties, etc.

Summary of Board of Directors/ Audit & Supervisory Board / Management Board

Board of Directors Fiscal Year 2021: Held 15 times

In principle, the Board of Directors meets once a month. The Board of Directors is a decision-making body for management, aiming to achieve sustainable growth and increase the corporate value of the Group over the medium to long term. Also, in addition to monitoring and supervising the execution of business by management, including Directors and officers, the Board of Directors develops provisions related to the Directors' execution of duties, and establishes a framework for taking responsibility for the supervision of the execution of business.

Examples of Agenda Items Discussed by the Board of Directors in Fiscal Year 2021

- Strategies and progress of each business under the mid-term business plan
- Sustainability strategy
- The talent strategy
- Compliance with the revised Corporate Governance Code
- Third-party evaluation of the Board of Directors
- Activities of Nomination Advisory Committee and Compensation Advisory Committee

Audit & Supervisory Board Fiscal Year 2021: Held 17 times

In principle, the Audit & Supervisory Board meets once a month. In order to ensure the sustainable growth and corporate soundness of the Group, the Audit & Supervisory Board shall make appropriate decisions and express its opinions from an independent and objective standpoint. Also, based on laws, regulations, the Auditing Standards for Audit & Supervisory Board Members and the Rules Governing the Audit & Supervisory Board, the Audit & Supervisory Board shall receive reports from each Audit & Supervisory Board Member on important matters related to audits, deliberate, and pass resolutions as necessary. In addition, the Audit & Supervisory Board Members deepen their cooperation with the accounting auditor and exchange information with the accounting auditor regularly and as needed to improve the quality and efficiency of each of their audits.

<Activities of Audit & Supervisory Board Members>

Priority audit items for Fiscal Year 2021

- Establishment of new organizational structure and progress of the mid-term business plan AG2023
- Evaluating strategic investments
- Establishment and operation of Yokogawa's Internal Control System
- Status of business management in light of new ways of working
- Responding to risks in a challenging business environment

Audit activity results in Fiscal Year 2021

- Audits of group subsidiaries and head office divisions
- Attending important meetings, auditing business execution and viewing important documents
- Meeting with Directors, Executive Officers and other key employees
- Cooperation with accounting auditors and internal audit departments
- Cooperation with Outside Directors and Group Full-time Corporate Auditors

Management Board Fiscal Year 2021: Held 12 times

The Board of Directors delegates decision-making related to the execution of business to the Management Board to promote swift decision-making. The Management Board meets once a month in principle and comprises the President and CEO, officers, and standing Members of the Audit & Supervisory Board. In addition, matters regarding the resolution of the Management Board and other matters shall be reported to the Board of Directors.

For more Specific and detailed information about Corporate Governance, please refer to our web site.

Japanese https://www.yokogawa.co.jp/about/ir/governance-ja/ English https://www.yokogawa.com/about/ir/governance/

Directors/Audit & Supervisory Board Members/ Vice President (As of July 1, 2022)

Directors

Chairman
Chairman of the Board
Takashi Nishijima
Date of birth: Aug. 12, 1957
Number of years since appointment as a Director: 11 years

President and
Chief Executive Officer
Hitoshi Nara
Date of birth: Jan. 23, 1963
Number of years since appointment as a Director: 11 years

Director, Executive Vice President
Head of Corporate Administration Headquarters
Junichi Anabuki
Date of birth: Mar. 18, 1963
Number of years since appointment as a Director: 8 years

Director, Senior Vice President
Head of Digital Solutions Headquarters
Yu Dai
Date of birth: Feb. 25, 1963
Number of years since appointment as a Director: 3 years

Leading Outside Director
Nobuo Seki
Date of birth: Sep. 21, 1944
Number of years since appointment as an Outside Director: 7 years

Outside Director
Shiro Sugata
Date of birth: Nov. 17, 1949
Number of years since appointment as an Outside Director: 6 years

Outside Director
Akira Uchida
Date of birth: Oct. 4, 1950
Number of years since appointment as an Outside Director: 3 years

Outside Director
Kuniko Urano
Date of birth: Oct. 19, 1956
Number of years since appointment as an Outside Director: 1 year

Outside Director
Takuya Hirano
Date of birth: Aug. 11, 1970
Number of years since appointment as an Outside Director: Newly elected

Audit & Supervisory Board Members

Audit & Supervisory Board Member
Kouji Maemura
Date of birth: May 21, 1956
Number of years since appointment as a Member of the Audit & Supervisory Board: 5 years

Audit & Supervisory Board Member
Hajime Watanabe
Date of birth: Aug. 17, 1962
Number of years since appointment as a Member of the Audit & Supervisory Board: 2 years

Outside Member, Audit & Supervisory Board
Yasuko Takayama
Date of birth: Mar. 8, 1958
Number of years since appointment as a Member of the Audit & Supervisory Board: 5 years

Outside Member, Audit & Supervisory Board
Makoto Ohsawa
Date of birth: Feb. 20, 1959
Number of years since appointment as a Member of the Audit & Supervisory Board: 4 years

Outside Member, Audit & Supervisory Board
Masaru Ono
Date of birth: Jun. 1, 1953
Number of years since appointment as a Member of the Audit & Supervisory Board: 2 years

Introduction of Takuya Hirano, the New Outside Director

With the implementation of the Corporate Governance Code, fair decisions and operations have been made in corporate management. Corporate governance plays an important role as a defensive measure, but it also is an offensive measure. Fair and transparent corporate management is essential to growing and generating profits with international competitiveness.

I have had business responsibilities in Japan, Eastern Europe, and Central Asia for an IT company, Microsoft, and have also been involved in management at its U.S. headquarters. Through this, I feel that a new world is being formed at a tremendous rate due to digital innovation, and it is causing globalization and changes in business models. At a time when it is no longer enough to rely on past knowledge and experience in corporate management, it will be necessary to have speedy management with transparency and soundness while maintaining a global outlook.

In Yokogawa, we are already developing our business globally, working to ensure the transparency and soundness of management through the continuous enhancement of the functions of the Board of Directors, and carrying out management with a bold vision for the future. I also believe that the deep trust we have built with our customers is the strength of our on-site capabilities. I am honored and feel a heavy responsibility to be appointed as an Outside Director of Yokogawa, a company that is constantly transforming and improving itself. Based on my past experience, I will continue to contribute, albeit in a small way, to further enhancing Yokogawa's global value.

For the expertise and experience of Directors and Audit & Supervisory Board Members (skill matrix), please refer to page 76.

Vice President

Masaharu Yamazaki
Executive Vice President
President, Yokogawa Test & Measurement Corporation

Tsuyoshi Abe
Senior Vice President
Head of Marketing Headquarters

Shuji Mori
Senior Vice President
Chief Executive for North America, South America, Europe, Russia and CIS

Yukihiro Funyu
Senior Vice President
Head of Digital Strategy Headquarters
Head of DX-Platform Center

Koji Nakaoka
Vice President
Head of Energy & Sustainability Business Headquarters, Global Sales Headquarters

Mikio Matsui
Vice President
Head of Human Resources and General Affairs Headquarters

Kazuhiko Takeoka
Vice President
Chief Executive for ASEAN, Pacific, China and Korea President, Yokogawa China Co., Ltd.

Kenji Hasegawa
Vice President
Head of Yokogawa Products Headquarters

Hiroshi Nakao
Vice President
Head of Life Business Headquarters

Hikaru Kikkawa
Vice President
Head of Audit & QHSE Headquarters

Hiromasa Yatsuhashi
Vice President
Chief Executive for Japan
President, Yokogawa Solution Service Corporation

Hiroshi Nagai
Vice President
President, Yokogawa Manufacturing Corporation

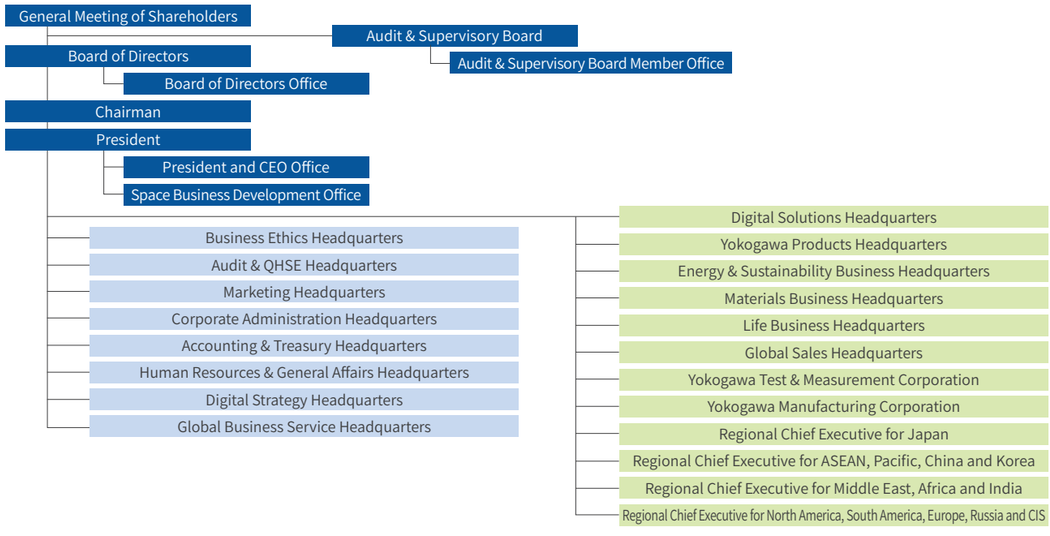
Sajiv Ravindran Nath
Vice President
Chief Executive for Middle East, Africa and India
President, Yokogawa India Ltd.

Michiko Nakajima
Vice President
Head of Accounting & Treasury Headquarters

Yoko Fujita
Vice President
Head of Global Business Service Headquarters

Takeshi Taniguchi
Vice President
Head of Materials Business Headquarters

Organization Chart (as of April 1, 2022)



Chapter 7

Risk Management

Recognizing the possibility that risks may arise, the Group will work to avoid these risks and take appropriate measures should they occur.

Risks

Described below are matters related to the Group's business that are considered to be the main sources of risk and that could significantly impact investors' decision-making. Should these risks materialize, they could impact the Group's business activities as a whole, possibly affecting its earnings performance and financial status.

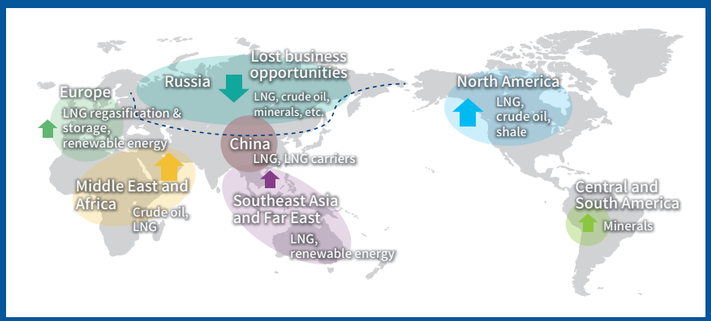
Risks that Have Been Realized: COVID-19 Pandemic, Russia-Ukraine Situation

Regarding the COVID-19 pandemic and the situation in Russia and Ukraine as risks that have in fact been realized, the Crisis Management Committee, chaired by the President and CEO, shares information and considers and responds to policies and measures.

While the effects of the spread of COVID-19 are gradually diminishing with progress in vaccinations, and the overall market is recovering, there are still concerns over COVID-19's effect on economic activities, such as continued localized lockdowns causing disruptions in the supply chain. Furthermore, intensifying conditions between Russia and Ukraine are placing stress on energy supply-and-demand and causing surging prices for resources and raw materials, and there is increasing uncertainty over these trends on world affairs and the global economy.

The Group's consolidated earnings forecasts for the coming fiscal year (fiscal year 2022) are projecting growth for orders and sales based on an increase in demand that is expected to accompany economic growth and a ramping up of industrial activity among major customers, industrial sectors and regions against the backdrop of a recovery in economic activity, which has been stalled due to the effects of COVID-19. Amid this, orders and sales are expected to decline due to the large-scale contraction of the Russia business as a result of the Russia-Ukraine situation. Looking ahead, the Group expects an increasing move toward alternative supply sources from Russian-produced energy and toward energy security. Orders are expected to recover to a certain degree but the Group expects considerable time will be required before such projects can turn into actual business opportunities, and the recovery of sales in fiscal year 2022 will be limited. When these effects are also taken into account, the Group expects orders received and net sales to increase in the next fiscal year. In terms of operating profit, while we expect an impact from surging parts prices and logistics costs, we forecast a year-on-year increase in profit due mainly to increased revenues. Accordingly, increases are expected for ordinary profit, and profit attributable to owners of parent.

The world is experiencing increasing needs for the resolution of social issues such as the energy transition to realize a low-carbon society, innovation in digital technology, and paradigm shifts due to the spread of COVID-19. The Group sees these changes in the business environment as opportunities and will establish a business structure focused on solving common social issues for growth, while expanding its contribution to society and the environment to achieve growth.



Key Related Topics

I. The risks that were the background behind the formulation and review of the long-term business framework and the AG2023 mid-term business plan were mainly examined from perspectives evaluating political, economic, social, and technological trends (PEST), customer trends, and trends in the process automation industry. Yokogawa's Purpose and vision statement are reflected in its strategies and other plans.

II. On the financial front, risk scenarios are developed mainly from perspectives considering overseas and domestic economic crises, natural disasters, environmental and energy constraints, infectious diseases, and sluggish new businesses. These scenarios are utilized in the verification of safety, medium- and long-term balance sheet projections, M&A decision making, and other activities.

III. Assuming that there will be damage caused by climate change (physical risks) mainly due to natural disasters, and that climate change will force changes (transition risks) mainly due to the decrease of businesses dependent on fossil fuel-based energy and the delayed response to climate change measure, we will accellerate our climate change initiatives, including those recommended by the TCFD.

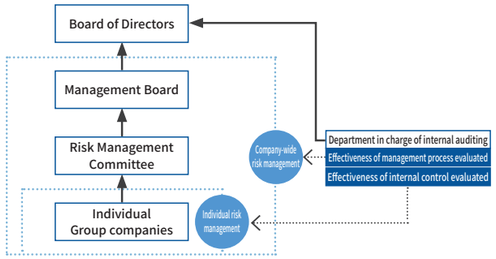
Details of risks	Main initiatives	Key related topics I	Key related topics II	Key related topics III
Risks relating to business deployment				
Related to changes in the external environment* ● Political or economic factors in each country	We are striving to prevent, avoid and mitigate the impact of risks related to changes in the external environment through the collection of information within the Group, contracts with external parties, and other initiatives.	○	○	
● Impact of taxation and trade restrictions		○		
● Differences in commercial practices outside Japan		○		
● Natural disasters (earthquakes, fires, floods, tsunami, etc.), social turmoil stemming from wars, riots, terrorism, infectious diseases, strikes, and other factors		○	○	○
● Cyberattacks affecting Company products, services and internal infrastructure		○		
● Incomplete understanding of regulations, sanctions, patents, etc., in countries where we operate, including those pertaining to the protection of the environment.		○	○	
*COVID-19		○	○	○
Related to markets/competitive environment (1) Cost competitiveness	Regarding risks related to the market and competitive environments, we are working to increase the cost competitiveness of products and services that are required by the markets and to satisfy cost reduction requests. We are also endeavoring to create new value through digital transformation in a broad array of areas, mainly among our business partners, not to speak of our own company, in order to secure competitive advantages. Moreover, we are pushing ahead with transformation of business models by, for example, seeking to establish a results-based business and a recurring business that emphasizes the offering of services. With regard to energy, initiatives to address environmental changes such as a shift in energy use from a long-term perspective are under discussion, and we are working to respond to such changes in the market environment.	○		
(2) Establishment of competitive advantages through the use of digital technologies		○		
(3) Transformation of business models to match market needs ● Loss of business opportunities		○		
(4) Changes in the market environment due to climate change initiatives ● Loss of business opportunities, decline in corporate value		○		○
Related to strategic investment ● Assumed results not achieved due to unexpected environmental change	Regarding risks related to strategic investment, we are intensifying our focus on strategic growth investments, primarily for expansion into new businesses and new fields. Further, we are striving to steadily implement processes from project discovery to investment, to improve the accuracy of evaluation and verification, and to swiftly launch businesses after investment.	○	○	
● Assumed results not achieved due to delay in launching invested business		○	○	
Related to R&D ● Non-conformance with market needs and targets	Regarding risks related to research and development, we are continuously pushing forward with the development of new technologies, with basic research into measurement, control and information, and the development of advanced technologies and digital technologies such as IIoT and AI as our topmost management priorities. We are strengthening initiatives to adapt to changes in international codes and standards, and to aid the realization of a sustainable society, the overarching goal of the SDGs. We are also continuing to invest in R&D for product technologies and service innovation to ensure we are able to maintain our competitiveness while seeking to understand market trends in product and service areas with growth potential.	○		
● Conform to requirements but no innovative technology created, assumed results not achieved		○		
● Allow other companies to take a lead related to product quality and supply		○		
Related to product quality and supply ● Defects inherent in products or services	Concerning risks related to product quality and supply, we are accumulating technology and expertise while ensuring our strict quality management system stays in place. We are also endeavoring to achieve stable procurement by routinely collecting information on market trends impacting our main electronic components and other materials we procure, and to ensure thorough management of supplier information, including quality and delivery time, as we work to diversify our supply sources and avoid excessive concentration and dependence on particular suppliers.			
● Loss arising from a defect				
● Product supply delayed, halted				
Related to project management ● Unexpected cost arises	Regarding risks related to project management, we are striving to prevent the occurrence of unprofitable projects through efforts including profit estimation in the process leading up to the receipt of orders, the improvement of the accuracy of profitability management until delivery time, and thorough control of production and quality.			
● Compensation liability incurred due to delayed delivery, etc.				
Risks relating to management in general				
Related to the recruitment and training of human resources ● Unable to secure necessary human resources	Regarding risks related to recruitment and the training of human resources, we have established the global practice of employing people with the ability to propose solutions, with project management and engineering capabilities, and with technology and knowledge regarding digital technology and new businesses, and we educate and train the people that we employ.	○		
● Unable to complete training as planned		○		
Related to human rights ● Compensation liability incurred	As for human rights-related risks, it is our established policy to respect human rights and we have expressed our support for the U.N. Global Compact and we also have other measures in place. We have established guidelines for human rights initiatives in supply chains, and we undertake activities to ensure that internationally recognized human rights are respected.			
● Decline in corporate value				
Related to intellectual property rights ● Unable to use important technology	Concerning risks related to intellectual property rights, we expend every effort to protect our intellectual property rights in the process of developing our products and services, and thoroughly manage intellectual property rights to prevent our infringement of other companies' rights.	○		
● Compensation liability incurred		○		
● Decline in corporate value		○		
Related to information security ● Compensation liability incurred	Regarding information-security-related risks, we are working to improve our information management system and providing training on the subject.	○		
● Decline in corporate value		○		
Risks related to finance, others				
Related to fluctuations in foreign exchange rates, interest rates, and stock prices ● Rapid/sharp foreign exchange rate swings	In connection with risks involved in the fluctuation of foreign exchange rates, interest rates, and stock prices, we are engaged in measures such as forex contracts to address the potential impact of foreign currency swings.		○	
● Changes in interest earnings, impact of interest rate fluctuations on asset value			○	
● Stock price fluctuations			○	
Related to depreciation of owned assets ● Decline in asset value stemming from a fall in market prices, profitability, etc.	–			

Risk Management

Risk Management Structure

To ensure effective risk management within the Group, we have established a Risk Management Committee chaired by the president and CEO, who is responsible for supervising all matters in relation to risk management. The department in charge of internal audits evaluates the effectiveness of the Group's risk management process and reports important findings to the Board of Directors and the Audit & Supervisory Board members twice a year.

In addition, in the event that a risk materializes, and a crisis occurs that may have a serious impact on the Group's management, the Crisis Management Committee, chaired by the President and CEO, will respond.

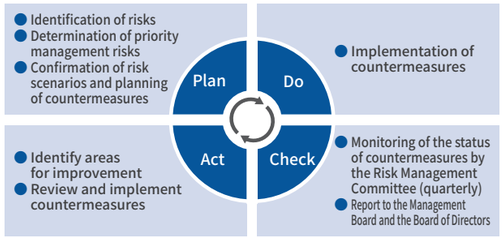


Risk Management

We identify the risks posed by uncertainties that may affect the Group's corporate value, including uncertainties in the external environment such as climate change, strategies, product quality, the internal environment, health and safety, crisis management, and corporate ethics. We also categorize and manage these uncertainties in terms of business opportunities, compliance, and crisis events. Each year, individual Group companies identify their own risks and measures, and the Risk Management Committee selects the risks to be intensively managed (priority management risks), taking into account management strategies, management issues and the external risk environment. In selecting them, we evaluate the severity of business opportunities and compliance and crisis events in terms of their impact and likelihood of occurrence. The content of measures, progress and status for priority management risks are reviewed quarterly by the Risk Management Committee and reported to the Management Board and the Board of Directors, and are reflected in the selection of priority management risks for the following year.

In addition, individual group companies autonomously conduct a PDCA cycle to manage risks identified.

PDCA for Risk Management

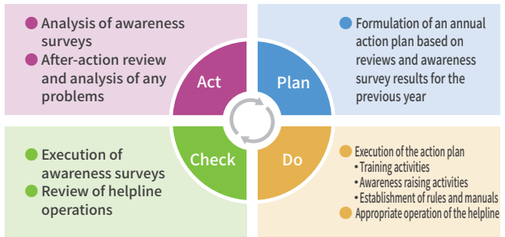


Compliance

Yokogawa places the utmost priority on compliance and conducts its business activities in compliance with relevant laws, regulations, ordinances and social norms while upholding the highest of ethical standards. Directors take the lead in the Group's adherence to and dissemination of business ethics. The Yokogawa Group Code of Conduct sets out the Basic Policy and Standards of Conduct, which employees should observe to realize Yokogawa's corporate philosophy, while the Yokogawa Group Compliance Guidelines prescribe the specific actions each and every employee should take.

Yokogawa established a department responsible for business ethics that is charged with the identification and resolution of issues pertaining to the compliance system, and is strongly promoting compliance management. Yokogawa's goals are to be healthy and open, with both a culture that encourages and enforces proper ethical conduct and a system that prevents misconduct and scandal. In so doing, Yokogawa will meet the expectations of investors and other stakeholders.

PDCA Cycle for the Improvement of Compliance



Yokogawa Group Compliance Guidelines

■The United Nations Global Compact
Yokogawa signed the United Nations Global Compact in 2009 and expressed its support for the Compact's ten principles addressing human rights, labor, the environment, and anti-corruption. We are working with our stakeholders to uphold the ten principles through efforts.

■ISO 26000
The ISO 26000 standard published by the International Standardization Organization in November 2010 is an international standard relating to the social responsibilities of organizations. Yokogawa is a company active in the global marketplace, and it adheres to the ISO 26000 standard and regards corporate governance as a foundation for corporate management. As such, we are committed to the implementation of socially responsible activities to meet our stakeholders' expectations, including contributing to communities through our business operations, environmental conservation, and respecting human rights.

Internal Control

Yokogawa has established and is operating an internal control system to promote management efficiency while ensuring the appropriateness of business operations, and to achieve continuous growth and increase corporate value.

The Group Management Standards (GMS) were established as the most important regulations within Yokogawa Group, clarifying the roles and responsibilities of each business process, and implementing an internal control system based on autonomous control activities. Among the internal control systems, processes that are particularly important from the perspective of operational appropriateness are consolidated into a deployment system consisting of business ethics, decision-making, operations management, crisis management, and corporate auditing infrastructure. The system of overall responsibility for the Group has been established and is being operated. The person responsible for each process is responsible for providing supervision and guidance to ensure (i.e. maintain and improve) the effectiveness and efficiency of internal controls at each Group company.

In operating the internal control system, relevant result indicators and action indicators are clearly defined and PDCA is followed. The department in charge of internal audits conducts an internal audit of the effectiveness of the internal control system and reports important matters to the Board of Directors and the Audit & Supervisory Board Members.

Respect for Human Rights

Yokogawa Group Human Rights Policy

All of our business activities are based on respect for human rights. By deepening our understanding of the various human rights issues in the countries and regions where we conduct our business, and by being actively involved in resolving them, we must strive to ensure that people's dignity is protected and respected. We have established the Yokogawa Group Human Rights Policy as a commitment to fulfill this responsibility. The Policy is disclosed on the Group's website.

Japanese https://www.yokogawa.co.jp/about/yokogawa/sustainability/humanrights/

English https://www.yokogawa.com/about/sustainability/humanrights/

Human Rights Management

We have established an internal system in which the President and CEO has the highest responsibility for human rights in the Group, and we are implementing ongoing efforts. The Human Rights Working Group, whose members are selected from the departments related to human rights, is working on specific human rights initiatives.

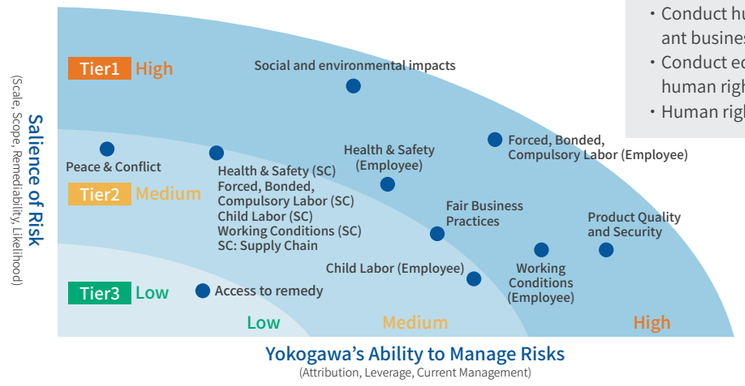
Human Rights Due Diligence

Yokogawa is committed to implementing human rights due diligence to identify, prevent, and mitigate any potential negative impacts on human rights throughout our business and the supply chain and to achieve accountability for our activities.

We have set up whistleblowing hotlines for everyone working at Yokogawa as a means to prevent human rights violations. We accept reports from and listen to the problems of our customers, business partners, community members, and all stakeholders about human rights violations through the inquiry function (Contact Us) of our website. We have a system that allows the department in charge of business ethics to resolve any reported issues regarding human rights in cooperation with human resources, procurement, legal and other departments.

■Major Human Rights Initiatives in Fiscal Year 2021
- Human rights risk assessment activities
- Conduct human rights due diligence on important business partners
- Conduct education and enlightenment on human rights for Group employees
- Human rights hotlines and remedies

Human Rights Risk of the Yokogawa Group



Health and Productivity Management*

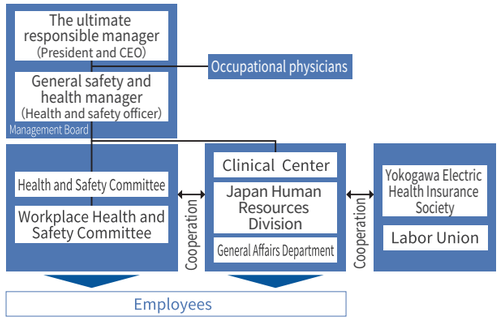
In order for Yokogawa to provide sustainable value and lead the way in solving global issues, it is essential to promote health and productivity management, in which health is considered from a management perspective and strategically practiced. Yokogawa will help its employees autonomously maintain their health while improving their physical and mental health, satisfaction, and happiness, in order to increase engagement and productivity across the Group. In September 2016, the Company established a Health Declaration as a basic policy for health and productivity management with the aim of further accelerating various initiatives related to employee health from the perspective of health and productivity management.

Health Declaration

Yokogawa aims to be a company that supports its employees in their efforts to improve their physical and mental health, encourages the development of lively and stimulating workplaces, and contributes to society.

Health and Productivity Management Promotion System

With the President and Chief Executive Officer assuming the ultimate responsibility and under the leadership of the management team spearheaded by Health and Safety Officers who serve as general safety and health managers, the Health and Safety Committee takes charge of promoting health and productivity management while relevant departments, namely the Clinical Center, the Japan Human Resources Division, and the General Affairs Department in the Human Resources and General Affairs HQ, coordinate with occupational physicians, the Yokogawa Electric Health Insurance Society and Labor Union. The Company has worked on various initiatives under its policy relating to maintaining and improving the health of employees, including working styles that allow flexibility in work locations and times, creating employee-friendly office environments, management of working hours, and health improvement programs.



Through these efforts, the Company has been continuously certified as the Certified Health & Productivity Management Outstanding Organizations of the Ministry of Economy, Trade and Industry (METI) since fiscal year 2017, and has also been certified as the Certified Health & Productivity Management Outstanding Organizations (Wihte500) from fiscal year 2017 to fiscal year 2019 and in fiscal year 2021.

* "Health and productivity management" is a registered trademark of Workshop for the Management of Health on Company and Employee.

Occupational Health and Safety

Yokogawa shall, in recognition that good Occupational Health and Safety (OHS) management is essential for the Group, autonomously strive to promote the health and safety of its personnel, while creating and maintaining a suitable working environment. The Yokogawa Group has established and operates its Occupational Health and Safety Management System (OHSMS) to eliminate occupational accidents and facilitate the continual improvement of its occupational health and safety activities.

We combine activities to remove and reduce potential risks through risk assessment with traditional occupational health and safety activities, such as occupational health and safety patrols and near-misses, to increase the effectiveness of our mechanisms and activities. We aim to acquire ISO45001, the international standard for occupational health and safety management, at all of our 12 principal locations by fiscal year 2023.

Major Occupational Health and Safety Activities

- Promotion of ISO 45001 certification (Fiscal year 2021: 9 out of 12 principal locations acquired)
- Risk assessment (risk source extraction and risk reduction activities)
- Emergency response training (fire extinguisher training, evacuation training)
- Traffic safety education (safe driving and safe use of bicycles)
- Maturity Level Assessment (maturity survey on quality, occupational health and safety and environment)
- Yokogawa QHSE Month (Global awareness activities on quality, occupational health and safety, and environmental awareness)
- Global QHSE Conference (Global meetings to discuss and determine policies and measures by stakeholders in quality, occupational health and safety, and the environment)

Fire extinguisher training in Yokogawa Middle East & Africa

Quality Management

The Yokogawa group meets its customers' expectations by providing products and solutions of uniformly high quality. The driving force behind this is our founding principle of quality-first, which we have followed faithfully for over 100 years.

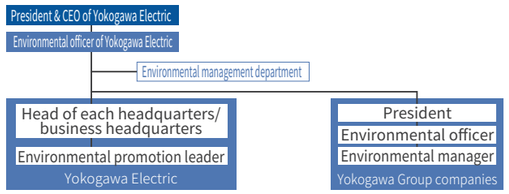
There are three basic elements of the Yokogawa group's quality management: Quality Assurance (QA), Quality Improvement (QI), and Quality mind (Qm). We believe that we have the ability to meet our customers' expectations and establish enduring relationships of trust only when all of these elements are engaged. The Quality First mindset is critically important in maintaining the high quality of Yokogawa's products and services. All employees of the Group understand the importance of the Quality First mindset and quality is built into every business process in accordance with the rules and approaches shared throughout the Group.

Environmental Management

Yokogawa takes its responsibility to protect the global environment seriously and, recognizing the responsibilities we bear for future generations, we practice environmental management from a medium- to long-term perspective. We promote the efficient use of resources and the significant reduction of greenhouse gas emissions together with our customers and actively work to develop environmentally friendly products and further reduce the environmental impact of the Yokogawa Group's operations.

Environmental Promotion Structure

Group companies have established environmental targets based on the Yokogawa Group Environmental Policy and are conducting environmental activities closely linked with their business activities. To promote global environmental management, under the supervision of Yokogawa Electric's headquarters, Group companies consider measures and review activities in cooperation with the environmental managers of the regional headquarters. The Group's major offices and manufacturing sites around the world are ISO14001 certified.



Information Security

Yokogawa works together with customers to provide solutions. To protect important information entrusted to us by our stakeholders, we implement information security measures from three perspectives: people, equipment, and information technology (IT).

Information Security Promotion System

Yokogawa conducts information security activities based on the concept of the ISO 27001 standard. Information security managers notify each business unit, headquarters, and affiliated company of policies and measures. A secretariat conducts on-site inspections to monitor operations to ensure they are performed in line with rules and takes necessary improvement measures.

To ensure information security, Yokogawa has developed an information security structure at each of its business units, headquarters, and affiliated companies. In addition, it implements a PDCA cycle, which is the key to smooth information security promotion activities.

In conjunction with the above, Yokogawa also has an information security committee to improve its responses to cyberattacks and ensure that customers are able to continue their business activities safely and securely. This committee comprises cybersecurity experts on products and other fields that Yokogawa operates within and works to share information within the Group and understand the latest trends.

For more information on these initiatives, please also visit the Yokogawa website and the Sustainability Report.

https://www.yokogawa.com/about/sustainability/

Chapter 8

Information

Fiscal Year 2021 in Review

Management Topics

April 2021

- Received Digital Transformation Certification based on guidelines of the Ministry of Economy, Trade and Industry.

Digital Transformation Certification

May 2021

- Held the financials results briefing for fiscal year 2020
- Reviewed of long-term business framework. Formulated and announced mid-term business plan Accelerate Growth 2023 and Yokogawa's Purpose.

June 2021

- Held the 2021 Annual General Meeting of Shareholders
- Continued to be selected to be a constituent of major ESG indexes (MSCI in June, FTSE in July, DJSI in November)

July 2021

- Participation in Lunar Industry Vision Council and joint submission of recommendations to the Government of Japan
- Setting of sustainability targets for mid-term business plan Accelerate Growth 2023

August 2021

- Signed investment and collaboration agreements with Fluence Analytics

October 2021

- Concluded agreement with Oki Electric Industry Co., Ltd. to transfer the aviation equipment business

November 2021

- Acquired Insilico Biotechnology AG, developer of innovative bioprocess digital twin technology

December 2021

- Held Yokogawa IR Day 2021 (control subsegment business strategy)/ Yokogawa DX Briefing
- Acquired PXiSE Energy Solutions, LLC, a developer of high-speed control software for grids and renewable energy assets
- Received the Excellence Award at the 22nd Telework Promotion Award from Japan Telework Association

February 2022

- "Yokogawa Report 2021" was highly rated by GPIF's domestic equity management organizations
- Selected Carbon Clean 200 for the first time

After April 2022

- Selected as "Noteworthy DX Company for 2022" by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange

Orders Received/R&D/Products & Solutions Topics

April 2021

- Announcement of agreement with NTT DOCOMO to conduct proof of concept test of 5G, cloud, and AI for remote control of plant systems

June 2021

- Launch of sales of S-CNF, a high-performance nanocellulose material/Launch of sales of Panacea, a biostimulant derived from microalgae that is effective in promoting plant growth (Yokogawa Bio Frontier)

August 2021

- Released by Yokogawa Test & Measurement of AQ6380 optical spectrum analyzer

October 2021

- Won water supply management system order from National Water Company of Senegal

December 2021

- Developed Single Cellome System SS2000 for Subcellular Sampling
- Commenced research project with JAXA Space Exploration Innovation Hub Center

January 2022

- Selected as system integrator for open process automation field trial

March 2022

- Received an order for integrated water facility management system from Ethiopia's Addis Ababa water and sewerage authority
- In a world first, Yokogawa and ENEOS Material Corporation (formerly JSR Corporation elastomer business unit) used AI to autonomously control a chemical plant for 35 consecutive days

IR and ESG Topics

- Included in major ESG indexes

Global

Member of Dow Jones Sustainability Indices Powered by the S&P Global CSA

FTSE4Good

Corporate ESG Performance Prime ISS ESG

CDP SUPPLIER ENGAGEMENT LEADER 2021

2022 MSCI ESG Leaders Indexes Constituent

MSCI ESG RATINGS AA

GOLD 2022 ecovadis Sustainability Rating

THE INCLUSION OF YOKOGAWA ELECTRIC CORPORATION IN ANY MSCI INDEX, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT OR PROMOTION OF YOKOGAWA ELECTRIC CORPORATION BY MSCI OR ANY OF ITS AFFILIATES.
THE MSCI INDEXES ARE THE EXCLUSIVE PROPERTY OF MSCI. MSCI AND THE MSCI INDEX NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI OR ITS AFFILIATES.

Japan

2022 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX

2022 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

FTSE Blossom Japan

FTSE Blossom Japan Sector Relative Index

2022 Sompo Sustainability Index

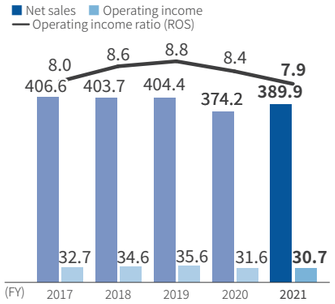
S&P/JPX Carbon Efficient Index

- Selected for inclusion in the Carbon Clean 200™ (Clean200) for the first time, a list of 200 publicly traded companies worldwide that are leading the way among their global peers to a clean energy future
- 2021 Yokogawa Report was selected by GPIF (Government Pension Investment Fund) domestic equity management contractors as both "Excellent Integrated Report" and "Most-improved Integrated Report"
- Held Yokogawa IR Day 2021 (Control subsegment business strategy) / Yokogawa DX Briefing as a remote conference (December)

Financial Highlights

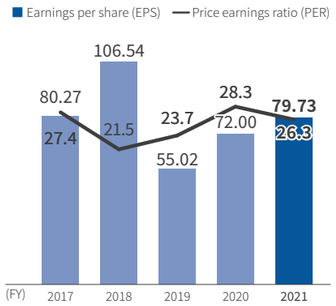
Earnings・Efficiency

Net sales (Billions of yen)/Operating income (Billions of yen)/Operating income ratio (ROS) (%)



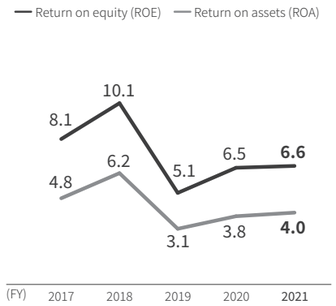
*As of March 31 each year

Earnings per share (EPS) (Yen)/Price earnings ratio (PER) (%)



*As of March 31 each year

Return on equity (ROE) (%)/Return on assets (ROA) (%)



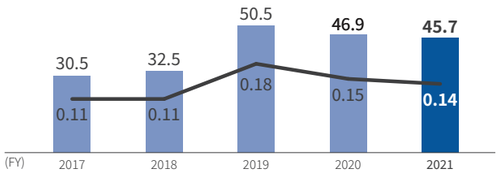
*As of March 31 each year

Amid continuing uncertainty in the global economy due to the impact of COVID-19, the prolonged shortage of components and the worsening Russia-Ukraine situation since 2022, sales increased in fiscal year 2021 mainly due to the impact of currency fluctuations. Operating income decreased due to the reaction to the decrease in subsidies, an increase in SG&A expenses, and the recording of allowance for doubtful accounts associated with the intensifying situation between Russia and Ukraine and other factors.

On the other hand, return on equity (ROE) improved by 0.1 pts as net income increased due to an improvement in equity in earnings of affiliates and a decrease in tax expenses. Net income per share increased by approximately ¥7.73 and the price-to-earnings ratio decreased by 2.0 pts from the previous fiscal year.

Distribution of Earnings

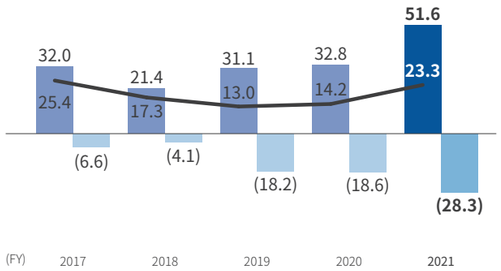
Interest-bearing debt (Billions of yen)/Debt equity ratio (Times)



*As of March 31 each year

We are working to repay interest-bearing debt and strengthen our financial base.

Cash flows (Billions of yen)

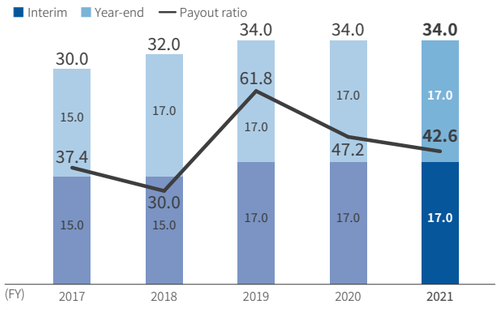


*As of March 31 each year

In the first year of AG2023, we generated operating cash flow of approximately ¥51.6 billion, and allocated approximately ¥11.2 billion as capital growth investments (strategic investments), including M & A and alliances, to maximize corporate value over the medium- to long-term.

To maximize shareholder value from a medium- to long-term perspective, we will continue to allocate cash flow optimally to maintain a financial base that supports growth, to invest in growth, and to return profits to shareholders.

Dividend per share (Yen)/Payout ratio (%)

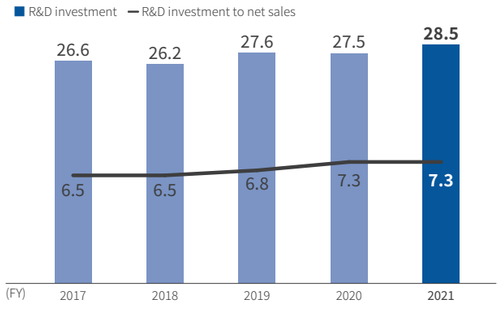


*As of March 31 each year

We will strive to secure a dividend payout ratio of 30% or more to achieve stable and continuous dividend increases.

The annual dividend for fiscal year 2021 remained at a record high.

R&D investment (Billions of yen)/R&D investment to net sales (%)

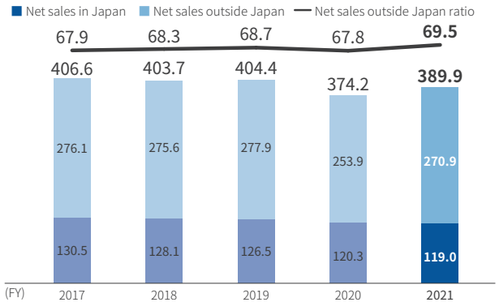


*As of March 31 each year

The R&D expenditures ratio of net sales was maintained at approximately 7%, and R&D expenditures in fiscal year 2021 were ¥28.5 billion.

Soundness

Net sales in Japan and outside Japan (Billions of yen)/Net sales outside Japan ratio (%)



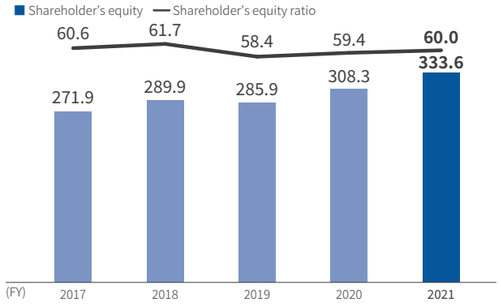
*As of March 31 each year

Overseas sales accounted for approximately 70% of net sales.

In fiscal year 2021, domestic sales declined while overseas sales increased mainly due to currency fluctuations.

Under the three subsegment structure of the control business, we will further grow our business, focusing on our focus areas.

Shareholders' equity (Billions of yen)/Shareholders' equity ratio (%)



*As of March 31 each year

Shareholders' equity at the end of fiscal year 2021 increased mainly due to the recording of net income attributable to owners of parent.

We maintain a strong financial position to respond to any temporary deterioration in our performance.

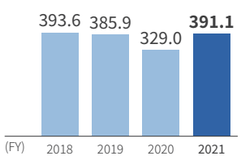
Highlights by Segment

*As of March 31 each year

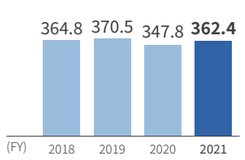
*From the first quarter of fiscal year 2021, as a result of revising the Group's internal management classification, the life innovation business that was previously included in the test and measurement business segment has been reclassified into the industrial automation and control business segment. In addition, the name of the reportable segment previously known as the test and measurement business has been changed to the measuring instruments business. Moreover, segment information for the previous fiscal year has been presented based on the changed classification.

Industrial Automation and Control Business

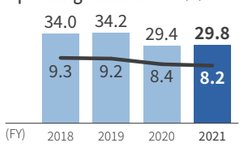
Orders (Billions of yen)



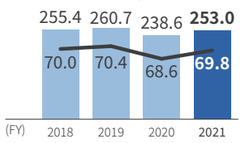
Net sales (Billions of yen)



Operating income (Billions of yen) Operating income ratio (%)



Net sales outside Japan (Billions of yen) Net sales outside Japan ratio (%)

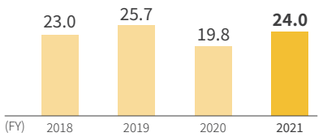


Orders received increased mainly due to the strong willingness of customers to invest against the backdrop of a full-fledged recovery in economic activity from COVID-19 and the impact of currency fluctuations.

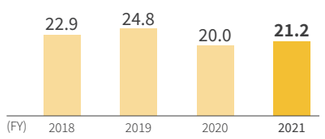
Sales increased mainly due to the impact of foreign exchange fluctuations, while operating income increased only slightly due to the reaction to the decrease in subsidies, an increase in new businesses-related investments, and the recording of allowance for Russia-related matters.

Measuring Instruments Business

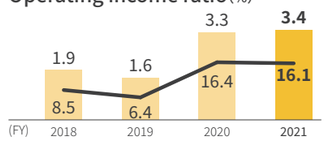
Orders (Billions of yen)



Net sales (Billions of yen)



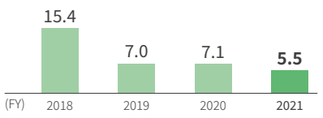
Operating income (Billions of yen) Operating income ratio (%)



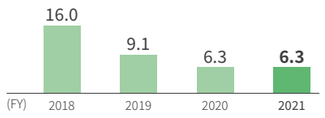
Sales increased mainly due to the impact of foreign exchange fluctuations, but operating income remained at the same level as the previous year due to changes in the model mix and other factors.

Aviation and Other Businesses

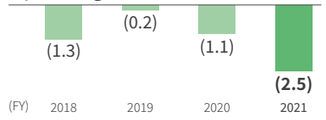
Orders (Billions of yen)



Net sales (Billions of yen)



Operating income (Billions of yen) Operating income ratio (%)

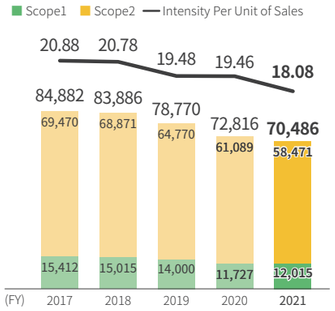


Sales remained at the same level as the previous year, and operating loss increased due mainly to higher SG&A expenses in new businesses.

ESG Highlights

Environment

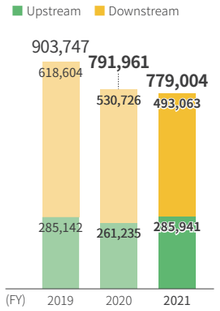
Greenhouse Gas(GHG) Emissions(t-CO_2e)and Its Intensity Per Unit of Sales (Unit: t-CO_2e /¥100 million)



*As of March 31 each year

Supply Chain GHG Emissions(t-CO_2e)

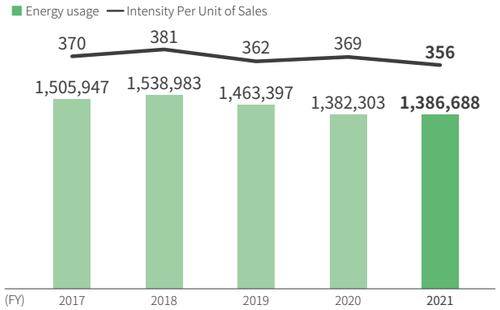
Scope3



*As of March 31 each year

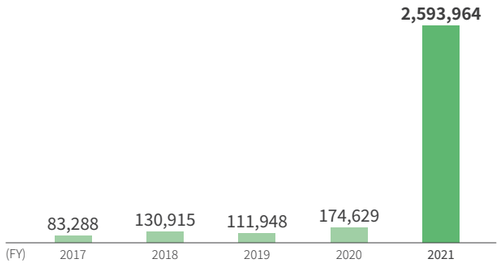
Scope 1 increased from the previous fiscal year due to a recovery of our sales activities, while Scope 2 reduced from the previous fiscal year thanks to expanded use of renewable energy-derived power. We will work to further reduce Scope 3 emissions through measures to reduce the power consumption of products and expansion of solution businesses with low GHG emissions.

Energy Consumption and Its Intensity Per Unit of Sales (Unit: GJ/¥100 million)



*As of March 31 each year

Renewable energy(kWh)

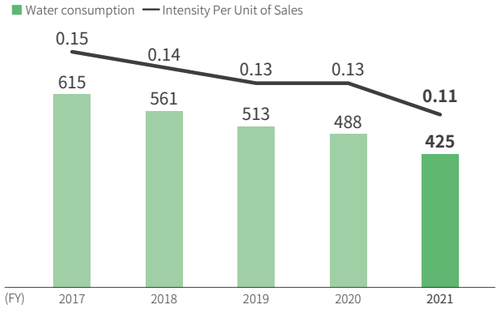


*As of March 31 each year

Despite factors such as business expansion and the slight relaxation of COVID-19 regulations, which increased energy consumption, we were able to keep energy consumption at about the same level as the previous fiscal year due to the promotion of energy-saving measures by each Group company. As a result, Energy Consumption Intensity Per Unit of Sales improved by more than 4% from the previous year. The adoption of renewable energy also began in earnest in fiscal year 2021, when 50% of the electricity purchased at the Kanazawa and Musashino head office plants was converted to renewable sources. We will continue to increase the adoption rate of renewable energy at Group companies in Japan and abroad, aiming to reduce GHG emissions by 50% from the fiscal year 2019 level in fiscal year 2030 and to become carbon neutral in fiscal year 2040.

Water Withdrawals and Its Intensity Per Unit of Sales

(Unit: thousand m³/¥100 million)

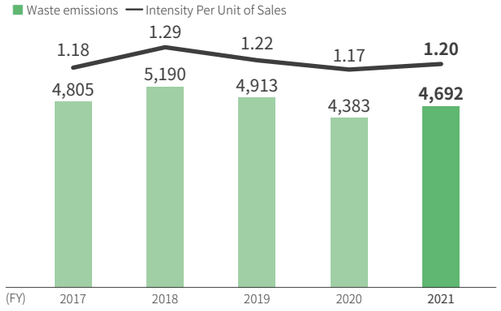


*As of March 31 each year

In fiscal year 2021, we achieved our fiscal year 2023 target of a 4% reduction in water intake at business sites (compared to fiscal year 2019 levels). By improving production processes and introducing water-saving systems in offices, we will control the expected attendance rate and increase in water intake associated with increased production to maintain the level of achievement of our targets.

Total Waste Generated and Its Intensity Per Unit of Sales

(Unit: tonne/¥100 million)

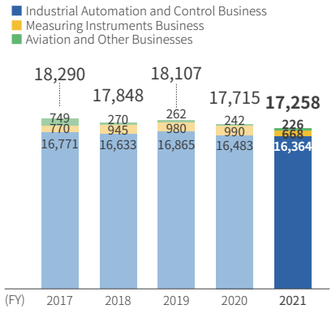


*As of March 31 each year

This increase was due to a temporary factor (Waste resulting from office reform at head office, increase in liquid waste resulting from the start of a plating line in production site, disposal of equipment and fixtures resulting from the sale of a business, etc.). In fiscal year 2022, we will continue our efforts to reduce, reuse and recycle to reduce waste.

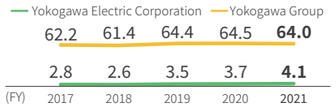
Social

Number of employees



*As of March 31 each year

Rate of foreign nationals among employees (%)

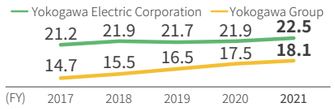


*As of March 31 each year

Female manager rate (%)

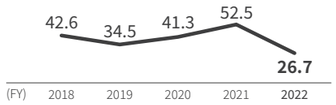
*Yokogawa Electric on a non-consolidated basis; as of March 31 each year

Female employees rate (%)



*As of March 31 each year

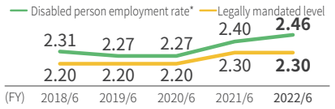
Percentage of female new graduates joining the Company (%)



*As of April 1 each year

We allocate human resources mainly to the control segment, which is our core business. We will actively recruit, develop, and promote people from a variety of backgrounds who differ in terms of experience, knowledge, thinking styles, perspective, cultural background, and socioeconomic status through our "Diversity and Inclusion" initiatives. The ratio of employees outside Japan in the group as a whole is 64%, with more than 80 different nationalities represented. We are promoting women's empowerment as a part of its diversity and inclusion promotion activities, and the percentage of women employees in the group as a whole is 22.5%, and the percentage of women managers is 12.6%.In Yokogawa Electric Corporation (Japan) recruitment activity, our target rate for women employees is 30% or more, with the long-term aim of optimizing Yokogawa's workforce gender composition.

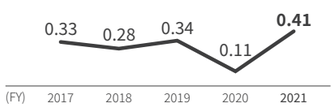
Disabled person employment rate (%)



*Data for the 6 Group companies in Japan
(data before June 1, 2018, for 7 Group companies in Japan)

Employees with disabilities use their skills and experience to perform in a variety of fields, including technology, manufacturing, sales and clerical work. We will continue our active recruitment efforts.

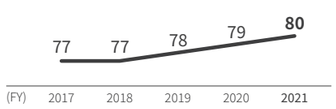
Frequency rate of accidents resulting in lost workdays* (Number of accidents resulting in lost workdays ÷ Aggregate number of work-hours × 1,000,000)



*Yokogawa Group employees

In fiscal year 2021, the number of industrial accidents increased due to the increase in the number of opportunities to come to work and travel on business. When an industrial accident occurs, we investigate the cause and take measures, share lessons learned, and work to prevent the same accident. We make use of Yokogawa Safety Handbook to reduce occupational injuries.

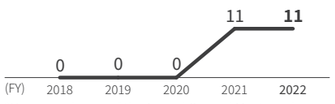
Employee Engagement (%)



We believe Employee Engagement is a critical element to enhancing corporate value and success. To ensure we are on track, we regularly conduct employee surveys, analyze the results, and implement improvements. As a result, the score has been steadily increasing.

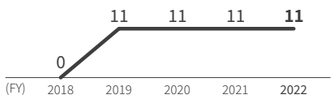
Governance

Rate of females on the Board of Directors (%)



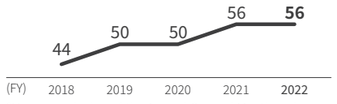
*Upon conclusion of the Annual General Meeting of Shareholders in June each year

Rate of foreign nationals on the Board of Directors (%)



*Upon conclusion of the Annual General Meeting of Shareholders in June each year

Rate of independent outside directors on the Board of Directors (%)

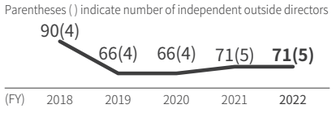


*Upon conclusion of the Annual General Meeting of Shareholders in June each year

We are continuing our efforts to increase diversity in gender, nationality, work experience and age. Yu Dai, a foreigner, has been elected since June 2019, and Kuniko Urano, a woman, since June 2021. The Board of Directors consists of a majority of independent outside directors, ensuring objectivity and transparency.

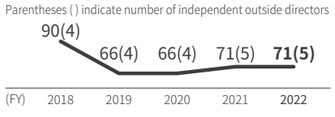
Rate of independent outside directors on the Nomination Advisory Committee (%)

Parentheses ( ) indicate number of independent outside directors



Rate of independent outside directors on the Compensation Advisory Committee (%)

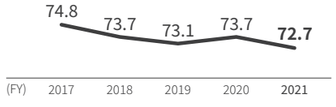
Parentheses ( ) indicate number of independent outside directors



Independent outside directors make up more than 2/3 of the members of the Nomination Advisory Committee and the Compensation Advisory Committee.

Since fiscal year 2022, both committees have been chaired by independent outside directors, ensuring greater objectivity and transparency.

Labor Union Organization Rate (%)



Organization rate (at Yokogawa Electric) = Labor union membership / number of employees (Officers, Fellows, Managers and Non managers) *
*Including those seconded from Yokogawa Electric to other Group companies

In our Group, the JAM Yokogawa Electric Labor Union has been organized, with 1,890 members as of March 31, 2022. Labor relations are stable.

Consolidated 11-Year Summary

Fiscal year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 (Billions of yen)	2021 (Millions of US dollars)
Financial data												
Orders	344.1	354.5	406.0	417.1	421.1	390.7	400.3	432.0	418.7	355.8	**420.5**	**3,436**
Net sales	334.7	347.9	388.5	405.8	413.7	391.4	406.6	403.7	404.4	374.2	**389.9**	**3,186**
(Net sales outside Japan)	198.9	213.9	259.4	281.1	286.6	263.5	276.1	275.6	277.9	253.9	**270.9**	**2,213**
Cost of sales	195.4	206.6	229.3	236.6	236.9	222.3	231.3	230.6	227.9	210.0	**217.1**	**1,774**
Selling, general and administrative expenses	122.6	122.8	133.3	139.4	137.1	137.5	142.6	138.5	140.9	132.6	**142.1**	**1,161**
Operating income	16.6	18.4	25.9	29.8	39.6	31.6	32.7	34.6	35.6	31.6	**30.7**	**251**
Profit (loss) attributable to owners of parent	6.0	14.7	12.3	17.2	30.2	25.8	21.4	28.4	14.7	19.2	**21.3**	**174**
Capital expenditures	11.1	13.5	14.0	14.1	15.4	14.2	13.2	15.0	19.6	20.6	**21.7**	**177**
Depreciation and amortization	12.8	13.5	13.6	14.5	15.1	18.0	18.3	17.7	18.8	17.6	**17.9**	**146**
Research and development costs	27.5	25.5	25.8	25.8	25.3	27.1	26.6	26.2	27.6	27.5	**28.5**	**233**
Cash flow from operating activities	12.9	17.4	30.1	38.3	31.9	39.2	32.0	21.4	31.1	32.8	**51.6**	**422**
Cash flow from investing activities	(7.8)	(7.5)	(13.9)	(1.8)	(10.9)	(36.5)	(6.6)	(4.1)	(18.2)	(18.6)	**(28.3)**	**(231)**
Free cash flow	5.1	9.9	16.2	36.5	21.0	2.7	25.4	17.3	13.0	14.2	**23.3**	**190**
Cash flow from financing activities	(8.0)	(8.0)	(21.6)	(20.2)	(26.9)	6.5	(22.4)	(7.0)	4.6	(17.1)	**(16.2)**	**(132)**
At year-end											(Billions of yen)	(Millions of US dollars)
Total assets	359.5	379.9	398.9	440.0	412.8	440.5	448.8	470.1	489.7	519.1	**555.8**	**4,541**
Interest-bearing debt	103.3	98.6	81.4	65.3	30.5	44.6	30.5	32.5	50.5	46.9	**45.7**	**373**
Shareholders' equity	145.7	168.4	187.3	215.5	240.4	256.4	271.9	289.9	285.9	308.3	**333.6**	**2,726**
Financial indicators											(%)	
Operating income ratio (ROS)	5.0	5.3	6.7	7.3	9.6	8.1	8.0	8.6	8.8	8.4	**7.9**	
Debt equity ratio (Times)	0.71	0.59	0.44	0.30	0.13	0.17	0.11	0.11	0.18	0.15	**0.14**	
Return on equity (ROE)	4.1	9.4	6.9	8.6	13.2	10.4	8.1	10.1	5.1	6.5	**6.6**	
Return on assets (ROA)	1.7	4.0	3.1	4.1	7.1	6.0	4.8	6.2	3.1	3.8	**4.0**	
Shareholders' equity ratio	40.5	44.3	46.9	49.0	58.3	58.2	60.6	61.7	58.4	59.4	**60.0**	
Per share data											(Yen)	(US dollars)
Earnings per share (EPS)	23.11	57.03	47.92	66.88	114.01	96.44	80.27	106.54	55.02	72.00	**79.73**	**0.65**
Cash dividends	5.00	10.00	12.00	12.00	25.00	25.00	30.00	32.00	34.00	34.00	**34.00**	**0.28**
Shareholders' equity	565.69	653.83	727.09	836.94	900.75	959.58	1,017.40	1,085.88	1,071.07	1,155.06	**1,249.72**	**10.21**
Stock information												
Stock price at the end of the term (Yen / US dollars)	837	946	1,667	1,295	1,163	1,752	2,198	2,291	1,303	2,038	**2,099**	**17.15**
Market capitalization (Billions of yen / Millions of US dollars)	224.8	254.1	447.8	347.9	312.4	470.6	590.4	615.4	350.0	547.5	**563.8**	**4,607**
Number of issued shares (shares)	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	268,624,510	**268,624,510**	**—**
Exchange rate information											(Yen)	
Average yen / US dollar exchange rate during the year	78.82	83.33	100.67	110.58	119.99	108.95	110.70	111.07	108.96	106.01	**112.94**	

Note: Figures are rounded down to the nearest 100 million yen.

Non-financial data*1											
Number of employees (by segment)	19,437	19,685	19,837	19,601	18,646	18,329	18,290	17,848	18,107	17,715	**17,258**
Industrial Automation and Control Business	16,672	17,188	17,669	17,593	16,724	16,751	16,771	16,633	16,865	16,483	**16,364**
Test and Measurement Business	1,968	1,667	1,328	1,171	1,122	802	770	945	980	990	**668**
Aviation and Other Businesses	797	830	840	837	800	776	749	270	262	242	**226**
Environmental data											
Energy usage (GJ)	1,906,665	1,850,857	1,732,042	1,710,907	1,552,937	1,494,818	1,505,947	1,538,983	1,463,397	1,382,303	**1,386,688**
Greenhouse gas emissions (t-CO_2e)	94,244	102,312	103,411	99,195	89,479	84,370	84,882	83,886	78,770	72,816	**70,486**
Renewable energy usage (kWh)	89,066	96,856	86,442	85,480	68,817	55,726	83,288	130,915	111,948	174,629	**2,593,964**
Water consumption (thousand m^3)	813	846	737	723	617	600	615	561	513	488	**425**
Waste emissions (Tons)	6,706	6,343	5,143	6,023	4,204	4,507	4,805	5,190	4,913	4,383	**4,692**
Occupational health & safety											
Frequency rate of accidents resulting in lost workdays *2	0.29	0.32	0.39	0.53	0.38	0.46	0.33	0.28	0.34	0.11	**0.41**

*1 For environmental data for fiscal year 2021, certification by Lloyd's Register Quality Assurance Limited has been obtained based on third-party assessment.
*2 Frequency rate of accidents resulting in lost workdays = Number of accidents resulting in lost workdays ÷ Aggregate number of work-hours × 1,000,000. Calculated on a calendar basis, including dispatched and contract workers, until 2014, and on the newly defined basis from 2015 onwards.

Risks Relating to the Group's Business

Described below are matters related to the Group's business that are considered to be the main sources of risk or that could significantly affect investor's decision-making. Recognizing the possibility that these risks may materialize, the Group will work to avoid these risks and take appropriate measures should they occur. However, investment decisions regarding Yokogawa's securities should be made carefully by evaluating the matters stipulated below along with the matters discussed in other sections of this document. The risks described below include forward-looking statements that are based on judgments made by the Group at the end of fiscal year 2020 and are subject to uncertainties. Therefore, actual results may vary from the statements.

(1) Risk Relating to the Business Deployment

(Changes in the external business environment)

The scope of the Group's activities extends not just to Japan but also to various parts of the world. Changes in external conditions in each region could adversely affect the Group's business results and financial situation. Specifically, the following risks have been identified.

- Political or economic factors in each country where the Group operates
- Impact of taxation and trade restrictions
- Differences in commercial practices outside Japan
- Natural disasters (earthquakes, fires, floods, tsunami, etc.)
- Social turmoil stemming from wars, riots, terrorism, infectious diseases, strikes, and other factors
- Cyberattacks affecting Company products, services and internal infrastructure
- Incomplete understanding of regulations, sanctions, patents, etc., in the counties where we operate, including regulations and other matters related to the protection of the environment

The Company strives to prevent, avoid, and reduce the impact of these risks by collecting information within the Group and contracting external organizations.

Regarding the COVID-19 pandemic and the situation in Russia and Ukraine as risks that have in fact been realized, the Crisis Management Committee, chaired by the President and CEO, shares information and considers and responds to policies and measures.

While the effects of the spread of COVID-19 are gradually diminishing with progress in vaccinations, and the overall market is recovering, there are still concerns over COVID-19's effect on economic activities, such as continued localized lockdowns causing disruptions in the supply chain. Furthermore, intensifying conditions between Russia and Ukraine are placing stress on energy supply-and-demand and causing surging prices for resources and raw materials, and there is increasing uncertainty over these trends on world affairs and the global economy.

The world is experiencing increasing needs for the resolution of social issues such as the energy transition to realize a low-carbon society, innovation in digital technology, and paradigm shifts due to the spread of COVID-19. The Group sees these changes in the business environment as opportunities and will establish a business structure focused on solving common social issues for growth, while expanding its contribution to society and the environment to achieve growth.

In addition, please see page 84 for the impact on the Group's consolidated performance in the next fiscal year (fiscal year 2022).

(Related to markets/competitive environment)

1) Cost competitiveness

As the Company aggressively develops its businesses, competition in construction and modernization projects is intensifying, and demand for cost reduction is intensifying. At the same time, resource-rich and emerging countries are increasingly prioritizing their own countries, and there is increasing demand for the localization of employment, services and procurement, including product production. Although the Company is working to increase its cost competitiveness, there is the risk that the Company will lose business opportunities if it cannot effectively respond to the demand in these markets that costs be reduced, including product and service costs and selling, general and administrative expenses. This could affect our Group's business results and financial situation.

2) Establishment of competitive advantages through the use of digital technologies

There is growing demand for a dramatic increase of productivity in business processes throughout the value chain and product life cycle through the utilization of digital technologies. The Company must respond to this demand as a business and establish a competitive advantage. Recognizing this as an opportunity for business growth, the Group is working to create new value through digital transformation in a wide range of fields, not only for itself but also for its customers. If the Company is unable to keep up with new technology or meet the demands of these markets, this could lead to the loss of business opportunities, which could affect the Group's business results and financial situation.

3) Transformation of our business model to match market needs

While changes in society and technological innovations are creating many new business models, the Group's customers are also increasingly demanding subscription businesses and other businesses that reduce initial deployment costs and provide flexibility in operations and maintenance after deployment. The Group is also transforming its business model by working to establish performance-based compensation businesses and service-providing businesses. There is a risk that business opportunities will be lost if the Group is unable to adequately respond to the new market needs that are changing towards the future, or if it delays its efforts. This could affect the Group's business results and financial situation.

4) Changes in market environment caused by climate change initiatives

Society's increasing demand for action regarding climate change initiatives may affect the strategies of the Group's customers. In the energy-related field, in which the Group's major customers operate, it recognizes that they are studying measures to address environmental change, such as a shift of energy resources from a long-term perspective. The Group views these changes as business opportunities and is working to respond to changes in the market environment. However, if the Group is unable to respond to these changes in the customers' environments or if its efforts are delayed, there is the risk that business opportunities may be lost or corporate value may decline. This could affect the Group's business results and financial situation.

(Related to strategic investment)

The Group is investing mainly to acquire technologies, sales channels, products and services, customers, human resources, and expertise, while strengthening its strategic growth investments in the creation of new businesses and new fields and examining M&A and alliances as necessary. The Company is fully prepared to carry out the entire process from project discovery to investment, to improve the accuracy of evaluation and verification, and to swiftly launch businesses after investment. The Company is also working to develop and utilize the human resources that support it. However, there is the risk that the expected results will not be achieved due to unexpected changes in the environment. In addition, there is the risk that a business may not be able to start up quickly after investment if the acquired assets and opportunities are not fully utilized, and that the expected results may not be achieved. This could affect the Group's business results and financial situation.

(Related to R&D)

The Group regards basic research into measurement, control and information, and the development of advanced technologies and digital technologies such as the IoT and AI as its most important management issues, and is continuously promoting the development of new technologies with a view toward the future. In addition, in response to changing international standards, efforts to realize a sustainable society such as the SDGs are being strengthened. However, there is the risk that development investments will not meet future market demands and targets as planned. In this event, business opportunity losses may affect the Group's business results and financial situation. The Company also continues to invest in R&D for product technology and service innovation to maintain its competitiveness. However, there is the risk that the Company's R&D investments will not succeed if it fails to understand market trends regarding products and services with growth potential. In addition, there is the risk that R&D investments do not produce innovative technologies or produce the results that were expected even if they fit the market, or competitors may precede the Group in the development of the technology. In these cases, business opportunity losses may affect the Group's business results and financial situation.

(Related to product quality and supply)

The Group provides highly reliable products and services to customers through its accumulation of technology and expertise over many years and the development of a strict quality control system. However, there is the risk that defects in the Group's products and services may exist, and that damage may result from these defects. In this event, the Group's business results and financial situation may be affected and the Group's overall business activities may be affected. In addition, the Company is striving to reduce risks by constantly collecting information about market trends in major electronic parts and other products and striving to ensure stable procurement. In addition, the Company is thoroughly managing the quality and delivery dates of its suppliers and diversifying its suppliers to avoid excessive concentration and dependence on specific suppliers. However, there is the risk that the delay or suspension of product supply in the event that the procurement of electronic parts and the manufacturing of important products become difficult due to supply chain disruptions caused by changes in the external environment. If this happens, the Group's business results and financial situation and the Group's overall business activities, including the Group's production activities, could be affected.

(Related to project management)

In the Group's business, particularly in project-type businesses that provide customers with the products, engineering solution services, and products of other companies in bulk, the reliable execution of project management is a necessity. We are striving to prevent the occurrence of unprofitable projects through such efforts as profit estimation in the process leading up to the receipt of orders, the improvement of the accuracy of profitability management until delivery, and the thorough control of production and quality. However, there is the risk that we may incur unexpected costs or may be liable for compensation due to delayed delivery if there are deviations from the assumed estimates, or problems in the management of profit, production, quality, etc. This could affect the Group's business results and financial situation.

(2) Risks relating to management in general

(Related to recruitment and training of human resources)

The Group's growth is supported by its capable personnel, such as the human resources who support its leading-edge technologies and the engineers who ensure high product quality. In particular, the importance of human resources capable of proposing solutions, human resources with engineering and project-management abilities, and human resources with skills and knowledge related to AI, digital technologies, and the company's new businesses is increasing. The Group continues to globally recruit and develop human resources through education and training. However, there is the risk that we may not be able to secure and train the necessary human resources as planned. If so, the Group's business results and financial situation may be affected as well as the effectiveness of its business operations.

(Related to human rights)

The Group's established policy is to respect human rights and it has expressed its support for the U.N. Global Compact. Consequently, the Group is stepping up its efforts based on the human rights policy and international human rights standards set forth in the Compact. Regarding human rights initiatives in the supply chain, the Group has provided guidelines prohibiting forced labor, inhumane treatment, child labor and discrimination, and protecting appropriate wages, compliance with laws regarding work hours, and the right to organize. The Group supports internationally demanded human rights and strives to respect human rights. However, if a human rights problem occurs due to an unexpected situation, there is the risk that the Group may be liable for compensation, and there is the risk that the Group's corporate value may decline, which could adversely affect its business results and financial situation.

(Related to intellectual property rights)

The Group has established a complete management system to protect its intellectual property rights and preventing its infringement on the rights of other companies in the course of its development of proprietary products and services. However, if intellectual property rights are infringed upon by a third party and the Group is therefore unable to make an expected profit, or if the Group is deemed to have infringed upon the intellectual property rights of another company due to a difference in viewpoint or some other reason, there is the risk that the Group will be subsequently disadvantaged by its inability to use important technology, may be liable for compensation, or its corporate value may decline, which could adversely affect the Group's business results and financial situation.

(Related to information security)

Through its business activities, the Group acquires personal or otherwise confidential information about its customers and trading partners. It therefore establishes systems to manage this information and provides its employees with training on information security. However, in the event that information is leaked or abused due to some unforeseen circumstances, there is the risk the Group will be liable for compensation or the Group's corporate value will decline, which could adversely affect the Group's business results and financial situation.

(3) Risks related to finances and others

(Related to fluctuations of foreign exchange rates, interest rates, or stock prices)

The Group operates globally and uses many currencies for its business transactions and activities. The Group enters into forward exchange contracts in order to respond to fluctuations in foreign exchange rates. However, there is the risk that foreign exchange rates may swing rapidly and sharply, which may affect the Group's business results and financial situation.

There is the risk that changes of interest rates related to the Group's assets and liabilities may impact interest earnings and asset values, which may affect the Group's business results and financial situation.

There is the risk that the prices of the stocks and other securities held by the Group may fluctuate, which may affect the Group's business results and financial situation.

(Related to depreciation of owned assets)

There is the risk that the value of the Group's business assets may decline due to decreased market prices or reduced profitability. If so, the Group's business results and financial situation could be affected, including the occurrence of impairment losses.

See p. 84 for Risk Management.➡

Financial Section
Consolidated Balance Sheet

Yokogawa Electric Corporation and Consolidated Subsidiaries
March 31, 2022

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
ASSETS			
Current Assets:			
Cash and cash equivalents (Note 11)	¥115,541	¥101,204	$944,046
Receivables (Note 11)			
Trade notes and accounts		187,266	
Accounts receivable	116,601		952,700
Trade notes receivable	11,572		94,551
Contract assets	58,155		475,162
Other	3,392	3,361	27,721
Less: Allowance for doubtful accounts	(5,304)	(3,555)	(43,342)
Net receivables	184,416	187,072	1,506,794
Inventories (Notes 7 and 8)	43,005	35,730	351,376
Other	21,232	21,303	173,478
Total current assets	364,195	345,311	2,975,697
Property, Plant, and Equipment (Notes 9 and 10):			
Land	15,448	15,325	126,221
Buildings and structures-net	46,089	45,408	376,576
Machinery, equipment, and vehicles-net	8,159	7,154	66,669
Tools, furniture, and fixtures-net	6,144	6,270	50,206
Construction in progress	2,961	2,889	24,194
Right-of-use assets-net	8,083	7,405	66,046
Lease assets-net (Note 16)	57	124	467
Total property, plant, and equipment	86,943	84,579	710,382
Investments and Other Assets:			
Investment securities (Notes 6, 11, and 17)	37,990	39,187	310,407
Investments in and advances to unconsolidated subsidiaries and affiliated companies (Note 17)	15,250	11,699	124,608
Goodwill (Note 10)	12,378	4,247	101,142
Software (Note 10)	13,997	12,779	114,364
Other intangible assets (Note 10)	11,940	9,275	97,561
Deferred tax assets (Note 14)	7,154	6,246	58,457
Other	7,124	7,935	58,212
Less: Allowance for doubtful accounts	(1,154)	(2,181)	(9,432)
Total investments and other assets	104,682	89,189	855,321
Total Assets	¥555,822	¥519,081	$4,541,400

See notes to consolidated financial statements.

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
LIABILITIES AND EQUITY			
Current Liabilities:			
Short-term loans payable (Notes 11, 17, and 19)	¥1,562	¥2,841	$12,768
Current portion of long-term debt (Notes 11 and 17)	13	4,080	110
Commercial papers (Note 11)	20,000	20,000	163,412
Current portion of lease obligations (Notes 11 and 17)	2,758	2,183	22,542
Payables (Note 11)			
Trade notes and accounts	26,590	25,147	217,259
Electronically recorded obligations-operating	10,119	9,573	82,682
Contract liabilities (Note 24)	41,124		336,013
Other	19,046	16,806	155,619
Income taxes payable	5,926	5,646	48,419
Accrued expenses	30,907	29,355	252,535
Advance received		35,317	
Provision for contract loss (Notes 8 and 20)	6,499	7,419	53,101
Other	12,643	10,621	103,308
Total current liabilities	177,192	168,993	1,447,772
Long-Term Liabilities:			
Long-term debt (Notes 11 and 17)	24,095	20,000	196,877
Lease obligations (Notes 11 and 17)	5,619	5,544	45,911
Liability for retirement benefits (Note 12)	4,687	4,373	38,301
Deferred tax liabilities (Note 14)	2,077	3,288	16,975
Other	1,792	2,110	14,645
Total long-term liabilities	38,272	35,317	312,712
Commitments and Contingent Liabilities (Notes 16, 18, and 19)			
Equity (Notes 13 and 26):			
Common stock, authorized, 600,000,000 shares; issued, 268,624,510 shares in 2022 and 2021	43,401	43,401	354,612
Capital surplus	54,392	54,392	444,416
Retained earnings	221,446	209,240	1,809,355
Treasury stock, 1,694,095 shares in 2022 and 1,692,594 shares in 2021	(1,407)	(1,404)	(11,498)
Accumulated other comprehensive income			
Net unrealized gain on available-for-sale securities	11,592	11,351	94,719
Foreign currency translation adjustments	5,138	(7,568)	41,984
Defined retirement benefit plans	(976)	(1,088)	(7,982)
Total	15,754	2,694	128,721
Noncontrolling interests	6,769	6,447	55,307
Total equity	340,356	314,770	2,780,915
Total Liabilities and Equity	¥555,822	¥519,081	$4,541,400

Consolidated Statement of Income

Yokogawa Electric Corporation and Consolidated Subsidiaries
Year Ended March 31, 2022

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
Net Sales (Note 24)	¥389,901	¥374,206	$3,185,728
Cost of Sales (Notes 15 and 20)	217,091	210,036	1,773,764
Gross profit	172,810	164,169	1,411,964
Selling, General and Administrative Expenses (Notes 15 and 20)	142,124	132,569	1,161,241
Operating income	30,685	31,599	250,722
Other Income (Expenses):			
Interest and dividend income	2,391	1,892	19,537
Interest expense	(928)	(784)	(7,585)
Loss on valuation of investment securities (Note 6)	(1,758)	(0)	(14,372)
Net gain on sales of investment securities and investment in affiliated companies (Note 6)	58	155	481
Foreign exchange gain-net	1,346	550	11,004
Net loss on disposal of property, plant, and equipment (Note 20)	(339)	(512)	(2,775)
Loss on impairment of long-lived assets (Note 10)	(1,410)	(486)	(11,522)
Equity in earnings of affiliates	3,128	818	25,564
Net loss on sale of investment in affiliates	(139)		(1,138)
Business structure improvement expense (Note 20)	(2,058)	(1,739)	(16,815)
Provision for allowance for doubtful accounts	(294)	(41)	(2,408)
Donations	(174)	(217)	(1,425)
Other-net	(397)	289	(3,251)
Other expenses-net	(576)	(75)	(4,706)
Income before Income Taxes	30,109	31,524	246,015
Income Taxes (Note 14):			
Current	8,165	8,807	66,716
Deferred	(1,730)	1,413	(14,137)
Total income taxes	6,435	10,220	52,579
Net income	23,674	21,303	193,436
Net income attributable to noncontrolling interests	2,392	2,084	19,548
Net income attributable to owners of the parent	¥21,282	¥19,219	$173,888

	Yen		U.S. dollars (Note 1)
Per Share of Common Stock (Note 22):			
Basic net income	¥79.73	¥72.00	$0.65
Cash dividends applicable to the year	34.00	34.00	0.28

See notes to consolidated financial statements.

Consolidated Statement of Comprehensive Income

Yokogawa Electric Corporation and Consolidated Subsidiaries
Year Ended March 31, 2022

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
Net Income	¥23,674	¥21,303	$193,436
Other Comprehensive Income (Note 21):			
Net unrealized gain on available-for-sale securities	221	4,352	1,807
Foreign currency translation adjustments	12,971	7,388	105,985
Defined retirement benefit plans	81	785	666
Share of other comprehensive income in affiliates	356	177	2,912
Total other comprehensive income	13,630	12,704	111,371
Comprehensive Income	¥37,305	¥34,007	$304,808
Total Comprehensive Income Attributable to:			
Owners of the parent	¥34,342	¥31,476	$280,596
Noncontrolling interests	2,963	2,530	24,212

See notes to consolidated financial statements.

Consolidated Statement of Changes in Equity

Yokogawa Electric Corporation and Consolidated Subsidiaries
Year Ended March 31, 2022

		Millions of yen									
						Accumulated other comprehensive income					
	Outstanding number of shares of common stock	Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gain on available-for-sale securities	Foreign currency translation adjustments	Defined retirement benefit plans	Total	Non controlling interests	Total equity
Balance, April 1, 2020 (as previously reported)	266,933,705	¥43,401	¥54,386	¥199,080	¥(1,400)	¥7,020	¥(14,677)	¥(1,905)	¥(9,562)	¥5,568	¥291,472
Cumulative effect of accounting change				15							15
Balance, April 1, 2020 (as restated)	266,933,705	¥43,401	¥54,386	¥199,096	¥(1,400)	¥7,020	¥(14,677)	¥(1,905)	¥(9,562)	¥5,568	¥291,488
Net income attributable to owners of the parent				19,219							19,219
Cash dividends, ¥34 per share				(9,075)							(9,075)
Purchase of treasury stock	(1,807)				(3)						(3)
Disposal of treasury stock	18				0						0
Change in the parent's ownership interest due to transactions with noncontrolling interests			5								5
Net change in the year						4,330	7,109	817	12,257	878	13,135
Balance, March 31, 2021	266,931,916	¥43,401	¥54,392	¥209,240	¥(1,404)	¥11,351	¥(7,568)	¥(1,088)	¥2,694	¥6,447	¥314,770
Net income attributable to owners of the parent				21,282							21,282
Cash dividends, ¥34 per share				(9,075)							(9,075)
Purchase of treasury stock	(1,580)				(3)						(3)
Disposal of treasury stock	79		0		0						0
Net change in the year						241	12,706	111	13,059	321	13,381
Balance, March 31, 2022	266,930,415	¥43,401	¥54,392	¥221,446	¥(1,407)	¥11,592	¥5,138	¥(976)	¥15,754	¥6,769	¥340,356

		Thousands of U.S. dollars (Note 1)									
						Accumulated other comprehensive income					
	Common stock	Capital surplus	Retained earnings	Treasury stock	Net unrealized gain on available-for-sale securities	Foreign currency translation adjustments	Defined retirement benefit plans	Total	Non controlling interests	Total equity
Balance, April 1, 2021	$354,612	$444,416	$1,709,620	$(11,474)	$92,745	$(61,839)	$(8,892)	$22,013	$52,678	$2,571,867
Net income attributable to owners of the parent			173,888							173,888
Cash dividends, $0.28 per share			(74,153)							(74,153)
Purchase of treasury stock				(25)						(25)
Disposal of treasury stock		0		0						0
Net change in the year					1,974	103,823	910	106,707	2,629	109,336
Balance, March 31, 2022	$354,612	$444,416	$1,809,355	$(11,498)	$94,719	$41,984	$(7,982)	$128,721	$55,307	$2,780,915

See notes to consolidated financial statements.

Consolidated Statement of Cash Flows

Yokogawa Electric Corporation and Consolidated Subsidiaries
Year Ended March 31, 2022

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
Operating Activities:			
Income before income taxes	¥30,109	¥31,524	$246,015
Adjustments for:			
Income taxes paid	(8,528)	(8,278)	(69,680)
Depreciation and amortization	16,926	16,988	138,295
Goodwill amortization	1,011	574	8,268
Equity in earnings of affiliates	(3,128)	(818)	(25,564)
Net loss on disposal of property, plant, and equipment	372	512	3,043
Loss on valuation of investment securities	1,758	0	14,372
Gain on sales of investment securities and investment in affiliated companies	(58)	(155)	(481)
Loss on impairment of long-lived assets	1,410	486	11,522
Changes in assets and liabilities:			
Decrease (increase) in trade notes and accounts receivable	13,684	(5,535)	111,814
(Increase) decrease in inventories	(4,906)	3,037	(40,085)
Increase (decrease) in trade notes and accounts payable	858	(151)	7,014
Increase in other payables	714	1,064	5,839
Increase (decrease) in allowance for doubtful accounts	185	(337)	1,518
Decrease in liability for retirement benefits	(64)	(381)	(527)
Decrease in provision for loss from program errors	(259)	(2,414)	(2,123)
Other assets and liabilities	(49)	(341)	(407)
Other-net	1,606	(2,933)	13,126
Total adjustments	21,534	1,317	175,947
Net cash provided by operating activities	51,644	32,842	421,963
Investing Activities:			
Net decrease in time deposits		337	
Purchases of property, plant, and equipment	(8,281)	(8,689)	(67,667)
Proceeds from sale of property, plant, and equipment	140	237	1,145
Acquisitions of intangible assets	(9,838)	(7,827)	(80,382)
Proceeds from sale of investment securities	807	1,563	6,599
Purchases of investment securities	(1,310)	(2,762)	(10,704)
Purchases of investments in subsidiaries with changes in consolidation scope	(9,330)	(1,284)	(76,236)
Purchases of investments in affiliated companies	(438)		(3,585)
Other-net	(76)	(190)	(621)
Net cash used in investing activities	(28,327)	(18,617)	(231,452)
Forward	¥23,316	¥14,224	$190,510

(Continued)

Consolidated Statement of Cash Flows

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2022	2021	2022
Forward	¥23,316	¥14,224	$190,510
Financing Activities:			
Net (decrease) increase in short-term loans payable	(1,388)	910	(11,345)
Net increase in commercial papers		(10,000)	
Proceeds from long-term debt	4,000	20,000	32,682
Repayments of long-term debt	(4,080)	(14,592)	(33,336)
Repayments of lease obligations	(3,116)	(2,882)	(25,466)
Cash dividends paid	(9,072)	(9,073)	(74,131)
Cash dividends paid to noncontrolling shareholders	(2,261)	(1,463)	(18,476)
Payments from changes in ownership interests in subsidiaries that do not result in change in scope of consolidation	(242)	(0)	(1,982)
Other-net	(3)	(3)	(24)
Net cash used in financing activities	(16,165)	(17,105)	(132,080)
Foreign Currency Translation Adjustments on Cash and Cash Equivalents	7,186	4,426	58,716
Net Increase in Cash and Cash Equivalents	14,337	1,545	117,146
Cash and Cash Equivalents, Beginning of Year	101,204	99,658	826,900
Cash and Cash Equivalents, End of Year	¥115,541	¥101,204	$944,046

See notes to consolidated financial statements.

Notes to Consolidated Financial Statements

Yokogawa Electric Corporation and Consolidated Subsidiaries
Year Ended March 31, 2022

1. Basis of Presentation of the Consolidated Financial Statements

The accompanying consolidated financial statements have been prepared in accordance with the provisions set forth in the Japanese Financial Instruments and Exchange Act and its related accounting regulations and in accordance with accounting principles generally accepted in Japan ("Japanese GAAP"), which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards.

In preparing these consolidated financial statements, certain reclassifications and rearrangements have been made to the consolidated financial statements issued in Japan in order to present them in a form which is more familiar to readers outside Japan. In addition, certain reclassifications have been made in the 2021 consolidated financial statements to conform to the classifications used in 2022.

The consolidated financial statements are stated in Japanese yen, the currency of the country in which Yokogawa Electric Corporation (the "Company") is incorporated and operates. The translations of Japanese yen amounts into U.S. dollar amounts are included solely for the convenience of readers outside Japan and have been made at the rate of ¥122.39 to $1, the approximate rate of exchange at March 31, 2022. Such translations should not be construed as representations that the Japanese yen amounts could be converted into U.S. dollars at that or any other rate.

Japanese yen figures less than a million yen and U.S. dollars figures less than a thousand dollars are rounded down to the nearest million yen and thousand dollars, except for per share data. As a result, totals in millions of yen and thousands of U.S. dollars may not add up exactly.

2. Summary of Significant Accounting Policies

● **a. Consolidation** —The consolidated financial statements as of March 31, 2022 include the accounts of the Company and its 116 (113 in 2021) significant subsidiaries (together, the "Group"). Changes include i) purchases of PXiSE Energy Solutions, LLC and Insilico Biotechnology AG and its 2 subsidiaries; ii) establishment of one subsidiary; iii) sales of Plant Electrical Instrumentation Pte Ltd; and iv) liquidation of one subsidiary.

Under the control and influence concepts, those companies in which the Company, directly or indirectly, is able to exercise control over operations are fully consolidated, and those companies over which the Group has the ability to exercise significant influence are accounted for by the equity method.

Investments in one (one in 2021) unconsolidated subsidiary and four (four in 2021) affiliated companies are accounted for by the equity method. Changes include i) purchase of Fluence Analytics Inc. and ii) sales of Sensire Ltd.

The excess of the cost of acquisition over the fair value of the net assets of the acquired subsidiary at the date of acquisition is being amortized on a straight-line basis over a period of up to 20 years. When the amount is not material, the excess of the cost of an acquisition over the fair value of the net assets of the acquired subsidiary is charged to income at the date of acquisition.

All significant intercompany balances and transactions have been eliminated in consolidation. All material unrealized profit included in assets resulting from transactions within the Group is also eliminated.

● **b. Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements**— Under Accounting Standards Board of Japan (ASBJ) Practical Issues Task Force (PITF) No. 18, "Practical Solution on Unification of Accounting Policies Applied to Foreign Subsidiaries for the Consolidated Financial Statements," the accounting policies and procedures applied to a parent company and its subsidiaries for similar transactions and events under similar circumstances should in principle be unified for the preparation of the consolidated financial statements. However, financial statements prepared by foreign subsidiaries in accordance with either International Financial Reporting Standards or accounting principles generally accepted in the United States of America (Financial Accounting Standards Board Accounting Standards Codification—FASB ASC) tentatively may be used for the consolidation process, except for the following items which should be adjusted in the consolidation process so that net income is accounted for in accordance with Japanese GAAP unless they are not material: (1) amortization of goodwill; (2) scheduled amortization of actuarial gain or loss of pensions that has been directly recorded in equity through other comprehensive income; (3) expensing capitalized development costs of research and development; (4) cancellation of the fair value model of accounting for property, plant, and equipment and investment properties and incorporation of the cost model of accounting; and (5) recording a gain or loss through profit or loss on the sale of an investment in an equity instrument for the difference between the acquisition cost and selling price, and recording impairment loss through profit or loss for other-than-temporary declines in the fair value of an investment in an

equity instrument, where a foreign subsidiary elects to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument.

c. Business Combinations—Business combinations are accounted for using the purchase method. Acquisition-related costs, such as advisory fees or professional fees are accounted for as expenses in the periods in which the costs are incurred. If the initial accounting for a business combination is incomplete by the end of the reporting period in which the business combination occurs, an acquirer shall report in its financial statements provisional amounts for the items for which the accounting is incomplete. During the measurement period, which shall not exceed one year from the acquisition, the acquirer shall retrospectively adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date and that would have affected the measurement of the amounts recognized as of that date. Such adjustments shall be recognized as if the accounting for the business combination had been completed at the acquisition date. The acquirer recognizes any bargain purchase gain in profit or loss immediately on the acquisition date after reassessing and confirming that all of the assets acquired and all of the liabilities assumed have been identified after a review of the procedures used in the purchase price allocation. A parent's ownership interest in a subsidiary might change if the parent purchases or sells ownership interests in its subsidiary. The carrying amount of noncontrolling interest is adjusted to reflect the change in the parent's ownership interest in its subsidiary while the parent retains its controlling interest in its subsidiary. Any difference between the fair value of the consideration received or paid and the amount by which the noncontrolling interest is adjusted is accounted for as capital surplus as long as the parent retains control over its subsidiary.

d. Cash Equivalents—Cash equivalents are short-term investments that are readily convertible into cash and exposed to insignificant risk of changes in value. Specifically, cash equivalents represent time deposits that mature within three months of the date of placement.

e. Inventories—Inventories are stated at the lower of cost or the net selling value. Cost is mainly determined by the specific identification method for finished goods and work in process, and by the average method for merchandise, raw materials, and supplies.

f. Investment Securities— Investment securities comprised available-for-sale securities. Except for equity securities without market price, available-for-sale securities are reported at fair value, with unrealized gains and losses, net of applicable taxes, reported under accumulated other comprehensive income in a separate component of equity. Costs of securities sold are calculated primarily by the moving-average method.

Equity securities without market price are stated at cost determined by the moving-average method. For other-than-temporary declines in fair value, investment securities are reduced to net realizable value by a charge to income.

g. Property, Plant, and Equipment— Property, plant, and equipment are stated at cost, less accumulated depreciation and any impairment loss. Depreciation of property, plant, and equipment is mainly calculated by the straight-line method over their estimated useful lives.

The estimated useful lives range principally from 3 to 50 years for buildings, and from 4 to 10 years for machinery and equipment. The estimated useful lives for leased assets are the terms of the respective leases.

h. Intangible Assets— Intangible assets consist mainly of software, technology assets, customer-related intangible assets, and goodwill. Amortization of intangible assets is mainly calculated by the straight-line method over their estimated useful lives. The estimated useful lives range principally from 5 to 10 years for software for internal use and are mainly 10 years for customer-related intangible assets and technology assets.

i. Leases— Finance lease transactions are capitalized by recognizing lease assets and lease obligations in the consolidated balance sheet.

Overseas consolidated subsidiaries of the Group have applied IFRS No. 16, "Leases," from the year ended March 31, 2020. IFRS No. 16 requires a lessee to recognize right-of-use assets and lease liabilities for substantially all leases on its balance sheet together with depreciation of right-of-use assets and interest expenses on lease liabilities on its statement of income.

Depreciation of right-of-use assets is calculated by the straight-line method over shorter of their lease periods or their estimated useful lives.

j. Long-lived Assets— The Group reviews its long-lived assets for impairment whenever events or changes in circumstance indicate the carrying amount of an asset or asset group may not be recoverable. An impairment loss is recognized if the carrying amount of an asset or asset group exceeds the sum of the undiscounted future cash flows expected to result from the continued use and eventual disposition of the asset or asset group. The impairment loss is measured as the amount by which the carrying amount of the asset exceeds its recoverable amount, which is the higher of the discounted cash flows from the continued use and eventual disposition of the asset or the net selling price at disposition.

k. Allowance for Doubtful Accounts— The allowance for doubtful accounts is stated in amounts considered to be appropriate based on the Group's past credit loss experience and an evaluation of potential losses in the receivables outstanding.

l. Provision for Contract Loss—When it is probable that the total construction costs will exceed total construction revenue, an estimated loss on the contract should be immediately recognized by providing for a loss on such construction contracts.

m. Retirement and Pension Plans—The Company and most of its consolidated subsidiaries have defined contribution plans, and some other consolidated subsidiaries have defined benefit plans for employees.

The main method used to attribute expected benefits to each period is the benefit formula basis.

Actuarial gains or losses are amortized on a straight-line basis over a period within the average remaining years of service of the employees from the following year in which they arise.

Prior service cost is amortized on a straight-line basis over a period within the average remaining years of service.

n. Research and Development Costs—Research and development costs are charged to income as incurred.

o. Bonuses to Directors—Bonuses to directors are accrued at the end of the year to which such bonuses are attributable.

p. Revenue Recognition—The Group applied ASBJ Statement No. 29, "Accounting Standard for Revenue Recognition" and ASBJ Guidance No. 30, "Implementation Guidance on Accounting Standard for Revenue Recognition" from the beginning of the year ended March 31, 2021, as they become effective for the annual periods beginning on or after April 1, 2018. As a result, the Group recognizes revenue at the time of the transfer of promised goods or services to customers in an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods or services based on the following five steps.

Step 1: Identify the contract(s) with a customer
Step 2: Identify the performance obligations in the contract
Step 3: Determine the transaction price
Step 4: Allocate the transaction price to the performance obligations in the contract
Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation

Regarding Step 4 above, the Group utilizes cost plus a margin approach in determining stand-alone selling prices and allocates transaction prices to performance obligations.

(1) Sales of Products

With regard to sales of products, such as field instruments and others which are placed at production sites, performance obligations are determined based on each product, and contract prices are used as a basis for transaction prices if one contract contains multiple products. Revenues are recognized at the time of delivery as the customers obtain control of the assets at the time of delivery and performance obligations are deemed to be satisfied at the same time. Revenues are recognized at the time of shipment if contracts satisfy requirements of Paragraph 98 of the guidance. Considerations for performance obligations are received approximately within one year after the performance obligations are satisfied.

(2) Construction Contracts

Transactions in the forms of construction contracts, including engineering, involve the creation of assets, which cannot be directed to another customer or assets with no alternative use and accompany rights to payments for the completed work. Percentage of progress regarding satisfaction of performance obligations for construction contracts is estimated and revenues are recognized based on the estimated percentage over certain period of time. The percentage of progress is determined based on a ratio of actual costs incurred against the estimated total costs to satisfy the performance obligation. Net sales recorded using this method was ¥172,979million (U.S.$1,413,343 thousand) for the year ended March 31, 2022. If order amounts or total construction costs to satisfy the performance obligation cannot be reliably estimated, a portion of actual costs incurred of which collection is probable is recognized as revenue. Considerations for performance obligations are generally received as the performance obligations are satisfied in accordance with contract milestones. Transactions arising from maintenance services are recognized over the contract periods.

q. Income Taxes—The provision for income taxes is computed based on the pretax income included in the consolidated statement of income. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Deferred taxes are measured by applying currently enacted income tax rates to the temporary differences.

The Company and certain domestic subsidiaries file their tax returns under the consolidated corporate tax system, which allows these companies to base tax payments on the combined profits or losses of the parent company and its wholly owned subsidiaries in Japan.

With regard to differences under the group tax sharing system established by "Act on Partial Revision of the Income Tax Act (Act No. 8, 2020)" and differences under the single tax return filing system reexamined together with transition to the group tax sharing system, the Company and certain domestic subsidiaries calculate the amounts of deferred tax assets and deferred tax liabilities based on the Income Tax Act before the revision, not applying Paragraph 44 of ASBJ Guidance No. 28, "Implementation Guidance on Tax Effect Accounting," issued on February 16, 2018, as permitted by Paragraph 3 of the PITF No. 39 "Practical Solution on the Treatment of Tax Effect Accounting for the Transition from the Consolidated Taxation System to the Group Tax Sharing System," issued on March 31, 2020.

The PITF No. 42, "Practical Solution on the Accounting and Disclosure Under the Group Tax Sharing System," issued on August 12, 2021, which prescribes accounting treatment and disclosure requirements for companies applying the group tax sharing system will be applied from the beginning of the fiscal year ending on March 31, 2023.

r. Foreign Currency Transactions—Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated into Japanese yen at the exchange rate as of that date. The foreign exchange gains and losses from translation are recognized in the consolidated statement of income.

s. Foreign Currency Financial Statements—The balance sheet accounts of the consolidated foreign subsidiaries are translated into Japanese yen at the prevailing exchange rate as of the balance sheet date except for equity, which is translated at the historical rate. Differences arising from such translation are shown as "Foreign currency translation adjustments" under accumulated other comprehensive income in a separate component of equity. Revenue and expense accounts of consolidated foreign subsidiaries are translated into yen at the average exchange rate.

t. Fair Value Measurement—From the beginning of the year ended March 31, 2022, the Group adopted ASBJ Statement No. 30, "Accounting Standard for Fair Value Measurement," issued on July 4, 2019, and other related standards and guidance. The new accounting policies as stipulated in these standards and guidance are applied prospectively in accordance with the transitional treatment as stipulated in Paragraph 19 of the "Accounting Standard for Fair Value Measurement" and Paragraph 44-2 of the ASBJ Statement No. 10, "Accounting Standard for Financial Instruments," issued on July 4, 2019. The effects of applying these standards and guidance on consolidated financial statements were immaterial.

u. Derivatives and Hedging Activities—The Company and certain consolidated subsidiaries use a variety of derivative financial instruments, including foreign currency forward contracts, currency options, and interest rate swaps, as a means of hedging foreign currency and interest rate risks. The Group does not enter into derivatives for trading or speculative purposes.

Derivative financial instruments and foreign currency transactions are classified and accounted for as follows: a) all derivatives other than those which qualify for hedge accounting are measured at fair value, and gains or losses are recognized in the consolidated statement of income; and b) for derivatives used for hedging purposes, if the derivatives qualify for hedge accounting because of high correlation between the hedging instruments and the hedged items, gains or losses are deferred until maturity of the hedged transactions. These amounts are shown as "deferred gain on derivative under hedge accounting" under accumulated other comprehensive income in a separate component of equity.

Foreign currency forward contracts are utilized to hedge the foreign currency risk of trade receivables denominated in foreign currencies. If the forward contracts qualify for hedge accounting, these trade receivables are translated at the contracted rates. Interest rate swaps are utilized to hedge the interest rate risk of long-term debt. Those interest rate swaps that qualify for hedge accounting and meet specific matching criteria are not remeasured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense or income.

If the hedging relationships qualify for the application of ASBJ PITF No. 40 "Practical Solution on the Treatment of Hedge Accounting for Financial Instruments that Reference LIBOR," the special treatment as prescribed in the PITF No. 40 is applied to those hedging relationships. The hedging relationships to which the PITF No. 40 is applied are the interest rate swaps that meet specific matching criteria.

v. Per Share Information—Basic net income per share is computed by dividing net income attributable to common shareholders by the weighted-average number of common shares outstanding for the period.

Cash dividends per share presented in the accompanying consolidated statement of income are dividends applicable to the respective years including dividends to be paid after the end of the year.

w. New Accounting Pronouncements—The ASBJ Guidance No. 31, "Implementation Guidance on Accounting Standard for Fair Value Measurement" was revised on June 17, 2021. At the time of its initial release on July 4, 2019, deliberation on method of fair value measurement for investment trusts and investments in partnership and similar instruments for which net interest amounts are recorded in the balance sheet, were to be performed roughly over one year period after the release as further consideration had been required among related parties.

The Guidance will be applied from the beginning of the fiscal year ending March 31, 2023.

The Group is currently in the process of determining the effects of the Guidance on the consolidated financial statements.

The PITF No. 42, "Practical Solution on the Accounting and Disclosure Under the Group Tax Sharing System," issued on August 12, 2021, which prescribes accounting treatment and disclosure requirements for companies applying the group tax sharing system will be applied from the beginning of the fiscal year ending on March 31, 2023.

3. Significant Accounting Estimates

Provision for contract loss

(1) Carrying amounts

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Provision for contract loss	¥6,499	¥7,419	$53,101

(2) Information on the significant accounting estimate

Provision for contract loss is provided when it is probable that the total construction costs will exceed total construction revenue and if the outcome of a construction contract can be estimated reliably. The amount of provision for contract loss is calculated as the excess amount (contract loss) deducted by profit or loss already recognized for the construction contract. Variation in the estimated amount of contract loss due to profitability, production, and quality issues which may arise in future may have a material impact on the future consolidated financial statements.

Goodwill

(1) Carrying amounts

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Goodwill	¥12,378	¥4,247	$101,142

(2) Information on the significant accounting estimate

Goodwill is recognized if acquisition costs exceeded the amount allocated for all of the assets acquired and all of the liabilities assumed. The Group annually determines whether impairment indicators exist for its goodwill based on changes in business environment and deteriorated business results. Whenever the circumstance indicates the carrying amount of goodwill may not be recoverable, undiscounted future cash flows are estimated based on business plans. An impairment loss is recognized if the carrying amount of goodwill exceeds the sum of the undiscounted future cash flows and the book value of the goodwill is reduced to its recoverable amount. Any changes in assumptions including growth rates and discount rates used in estimation of future cash flows may have a material impact on the future consolidated financial statements.

Impairment losses of ¥1,084 million ($8,860 thousand) related to Grazper Technologies ApS and ¥163 million related to Yokogawa TechInvent AS have been recognized for the years ended March 31, 2022 and 2021, respectively.

4. Change in Presentation

The Group applied ASBJ Statement No. 29, "Accounting Standard for Revenue Recognition," revised on March 31, 2020, and related guidance from the beginning of the year ended March 31, 2022. As a result, trade notes and accounts previously presented in current assets have been reclassified and separately presented as trade notes receivable, accounts receivable and contract assets, and advance received previously presented in current liabilities has been included in contract liabilities from the year ended March 31, 2022. The presentation for the year ended March 31, 2021, has not been changed in accordance with the transitional treatment as stipulated in Paragraph 89-4 of the Accounting Standard for Revenue Recognition.

5. Additional Information

Accounting estimates used in the preparation of the Company's financial statements are based on the assumption that demand in major customers, industries and regions will increase for the year ending March 31, 2023, due to economic growth as well as innovation of industries, supported by full recovery in economic activities that had been affected by the spread of COVID-19, despite some effects on economic activities due to disruption in supply chains caused by local lockdowns and other events.

The Company significantly reduced its business in Russia affected by worsened situation between Russia and Ukraine and it is expected that the situation will continue for some time. Allowance for doubtful accounts has been recorded by reflecting the effects of this situation.

6. Investment Securities

Investment securities as of March 31, 2022 and 2021, consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Noncurrent:			
Equity securities	¥37,990	¥39,187	$310,407

The cost and aggregate fair values of investment securities at March 31, 2022 and 2021, were as follows:

	Millions of yen			
March 31, 2022	Cost	Unrealized gain	Unrealized loss	Fair value
Securities classified as:				
Available-for-sale:				
Equity securities	¥5,883	¥15,968		¥21,851
March 31, 2021				
Securities classified as:				
Available-for-sale:				
Equity securities	¥6,444	¥15,707	¥7	¥22,144

	Thousands of U.S. dollars			
March 31, 2022	Cost	Unrealized gain	Unrealized loss	Fair value
Securities classified as:				
Available-for-sale:				
Equity securities	$48,067	$130,468		$178,355

The information for available-for-sale securities sold during the years ended March 31, 2022 and 2021, was as follows:

	Millions of yen		
2022	Proceeds	Realized gain	Realized loss
Available-for-sale:			
Equity securities	¥893	¥58	

	Millions of yen		
2021	Proceeds	Realized gain	Realized loss
Available-for-sale:			
Equity securities	¥1,563	¥155	¥0

	Thousands of U.S. dollars		
2022	Proceeds	Realized gain	Realized loss
Available-for-sale:			
Equity securities	$7,304	$481	

Impairment losses are recognized for available-for-sale securities except for equity securities without market price if declines in fair value are 50% or more. If declines in fair value are 30% to 50%, impairment losses may be recognized for amount deemed to be irrecoverable considering the declines are other than temporary. Impairment losses for equity securities without market price may be recognized for amounts deemed to be irrecoverable if declines in fair value are 50% or more considering the declines are other than temporary.

Loss on valuation of investment securities for the years ended March 31, 2022 and 2021, were ¥1,758 million (U.S.$14,372 thousand) and ¥0 million, respectively.

7. Inventories

Inventories at March 31, 2022 and 2021 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Merchandise and finished goods	¥16,662	¥14,599	$136,142
Work in process	4,584	5,335	37,455
Raw materials and supplies	21,758	15,796	177,779
Total	¥43,005	¥35,730	$351,376

8. Expected Loss on Construction Contracts

The Group recognizes an expected loss on construction contracts when it is probable that total contract costs will exceed total contract revenue. The inventory and the expected loss on construction contracts are not offset, but are separately presented in the consolidated balance sheet.

The balance of inventories relating to the expected loss on construction contracts for the years ended March 31, 2022 and 2021, was as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Merchandise and finished goods	¥255	¥206	$2,085
Work in process	148	90	1,213
Total	¥403	¥296	$3,298

9. Property, Plant, and Equipment

Accumulated depreciation on property, plant, and equipment as of March 31, 2022 and 2021, was ¥148,739 million (U.S.$1,215,290 thousand) and ¥140,419 million, respectively.

10. Long-lived Assets

The Group reviewed its long-lived assets for impairment as of and for the years ended March 31, 2022 and 2021. As a result, impairment losses of ¥1,410 million (U.S.$11,522 thousand) and ¥486 million were recognized for the years ended March 31, 2022 and 2021, respectively.

The main components of loss on impairment of long-lived assets for the year ended March 31, 2022, were as follows:

			Millions of yen	Thousands of U.S. dollars
Location	Use	Category	Impairment loss	
Denmark	Business assets	Goodwill	¥1,084	$8,860
Japan	Business assets	Buildings and structures	7	61
		Machinery, equipment, and vehicles	8	68
		Tools, furniture, and fixtures	50	411
		Software	68	556
United States	Idle asset	Right-of-use assets	191	1,564
		Total	¥1,410	$11,522

The Group's business assets are grouped according to management accounting classification. Idle assets are valued on the basis of individual assets.

The book value of business assets (goodwill) arising at the time of acquisition of shares of the Denmark-based subsidiary, Grazper Technologies ApS, has been reduced to the respective recoverable amount as the business results of Grazper Technologies ApS fell below initially forecasted business plans due to changes in its business environment. The differences between the book values and recoverable amounts have been recorded as impairment losses.

The book value of the idle assets was reduced to recoverable amounts (net selling price at disposition) as the future use of the assets was no longer planned. The differences between the book value and the recoverable amounts have been recorded as impairment losses.

The main components of loss on impairment of long-lived assets for the year ended March 31, 2021 were as follows:

			Millions of yen
Location	Use	Category	Impairment loss
Norway	Business assets	Goodwill	¥163
		Other intangible assets	323
		Total	¥486

The Group's business assets are grouped according to management accounting classification.
The book value of business assets (goodwill, etc.) arising at the time of acquisition of shares of the Norway-based subsidiary, Yokogawa TechInvent AS, has been reduced to their respective recoverable amounts as the business results of Yokogawa TechInvent AS fell below initially forecasted business plans due to changes in its business environment. The differences between the book values and recoverable amounts have been recorded as impairment losses.

Business assets are measured at their recoverable amounts, which are value in use which is calculated by discounting future cash flows at 10%.

11. Short-term Loans, Commercial Papers, Lease Obligations, and Long-term Debt

Short-term bank loans at March 31, 2022 and 2021, included bank overdrafts. The annual average interest rates on the short-term bank loans were 3.088% and 3.057% for the years ended March 31, 2022 and 2021, respectively.

The annual average interest rates on commercial papers were (0.007)% and (0.002)% for the years ended March 31, 2022 and 2021, respectively.

Long-term debt as of March 31, 2022 and 2021, consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Loans from banks and other financial institutions	¥24,109	¥24,080	$196,987
Lease obligations	8,378	7,727	68,454
Total	32,487	31,807	265,441
Less: Current portion	2,772	6,263	22,652
Long-term debt, less current portion	¥29,715	¥25,544	$242,789

Annual maturities of long-term loans from banks and other financial institutions at March 31, 2022, were as follows:

Year ending March 31	Millions of yen	Thousands of U.S. dollars
2023	¥13	$110
2024	20,095	164,195
2025	Nil	Nil
2026	Nil	Nil
2027 and thereafter	4,000	32,682
Total	¥24,109	$196,987

The annual average interest rates on long-term loans (excluding current portion) from banks were 0.340% and 0.330% for the years ended March 31, 2022 and 2021, respectively.

Annual maturities of leases obligations at March 31, 2022, were as follows:

Year ending March 31	Millions of yen	Thousands of U.S. dollars
2023	¥2,758	$22,542
2024	1,757	14,360
2025	1,237	10,113
2026	770	6,295
2027 and thereafter	1,853	15,142
Total	¥8,378	$68,454

The annual average interest rates on leases obligations (excluding current portion) were 3.249% and 3.214% for the years ended March 31, 2022 and 2021, respectively.

Collateral and secured debt at March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Collateral:			
Deposits	¥12	¥12	$102
Investment securities	4	4	35
Assets in consolidated subsidiaries outside Japan*	10,602	8,548	86,626
Total	¥10,619	¥8,565	$86,764

*"Assets in consolidated subsidiaries outside Japan" represents the aggregate amount of accounts receivable and other assets of such subsidiaries.

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Secured debt:			
Trade notes and accounts payable	¥19	¥7	$163

The Group's interest-bearing debt includes financial covenants which require the Company to maintain certain levels of equity and income on a consolidated basis. The balance of such debt as of March 31, 2022 and 2021, was ¥20,000 million (U.S.$163,412 thousand) and ¥20,000 million, respectively.

12. Retirement and Pension Plans

The Company and most of its consolidated subsidiaries have defined contribution plans, while some other subsidiaries have defined benefit plans. In certain circumstances, additional payments are made upon the retirement of employees.

A consolidated subsidiary participated in a multiemployer pension fund as a pension plan for its employees.

The simplified method is used to calculate defined benefit obligation for certain consolidated subsidiaries.

(a) The changes in defined benefit obligation for the years ended March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Balance at beginning of year	¥12,784	¥11,981	$104,458
Current service cost	544	650	4,447
Interest cost	231	233	1,889
Recognized prior service cost	(32)		(261)
Actuarial gain	(504)	(82)	(4,123)
Benefits paid	(712)	(702)	(5,824)
Others	180	704	1,480
Balance at end of year	¥12,492	¥12,784	$102,067

(b) The changes in plan assets for the years ended March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Balance at beginning of year	¥8,664	¥7,506	$70,796
Expected return on plan assets	328	350	2,687
Actuarial (loss) gain	(448)	739	(3,664)
Contributions from the employer	380	285	3,109
Benefits paid	(589)	(666)	(4,816)
Others	(97)	449	(799)
Balance at end of year	¥8,238	¥8,664	$67,314

(c) Reconciliation between the liability recorded in the consolidated balance sheet and the balances of defined benefit obligation and plan assets as of March 31, 2022 and 2021, was as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Funded defined benefit obligation	¥12,492	¥12,784	$102,067
Plan assets	(8,238)	(8,664)	(67,314)
Total	4,253	4,119	34,753
Net liability for defined benefit obligation	¥4,253	¥4,119	$34,753

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Liability for retirement benefits	¥4,687	¥4,373	$38,301
Asset for retirement benefits	(434)	(253)	(3,546)
Net liability for defined benefit obligation	¥4,253	¥4,119	$34,753

(d) The components of net periodic benefit costs for the years ended March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Service cost	¥544	¥650	$4,447
Interest cost	231	233	1,889
Expected return on plan assets	(328)	(350)	(2,687)
Amortization of actuarial loss	74	200	604
Amortization of prior service cost	(32)		(261)
Others	175	129	1,437
Net periodic benefit costs	¥664	¥863	$5,430

(e) Amounts recognized in other comprehensive income (before income tax effect) in respect of defined retirement benefit plans for the years ended March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Actuarial gain	¥130	¥1,023	$1,063

(f) Amounts recognized in accumulated other comprehensive income (before income tax effect) in respect of defined retirement benefit plans as of March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Unrecognized actuarial loss	¥(1,248)	¥(1,378)	$(10,198)

(g) Plan assets as of March 31, 2022 and 2021, were as follows:

(1) Components of plan assets

Plan assets:

	2022	2021
Equity investments	2%	23%
Debt investments	68	49
Cash and cash equivalents	25	22
Others	5	6
Total	100%	100%

(2) Method of determining the expected rate of return on plan assets

The expected rate of return on plan assets is determined based on the expected long-term rates of return for the various plan asset components.

(h) Assumptions used for the years ended March 31, 2022 and 2021, were as follows:

	2022	2021
Discount rate	3.63%	2.40%
Expected rate of return on plan assets	3.85%	5.02%

(i) Payments to defined contribution plans amounted to ¥4,886 million (U.S.$39,921 thousand) and ¥4,872 million for the years ended March 31, 2022 and 2021, respectively.

13. Equity

Japanese companies are subject to the Companies Act of Japan (the "Companies Act"). The significant provisions in the Companies Act that affect financial and accounting matters are summarized below:

(a) Dividends

Under the Companies Act, companies can pay dividends at any time during the fiscal year in addition to the year-end dividend upon the passing of a resolution at the shareholders' meeting. For companies that meet certain criteria such as; (1) having a board of directors, (2) having independent auditors, (3) having an audit and supervisory board, and (4) prescribing a one-year term of service for directors (rather than the conventional two-year term) in its articles of incorporation, the board of directors may declare dividends (except for dividends in kind) at any time during the fiscal year if the company has prescribed so in its articles of incorporation.

Semiannual interim dividends may also be paid once a year upon resolution by the board of directors if the articles of incorporation of the company so stipulates. The Companies Act provides certain limitations on the amounts available for dividends or the purchase of treasury stock. The limitation is defined as the amount available for distribution to the shareholders, but the amount of net assets after dividends must be maintained at no less than ¥3 million.

(b) Increases/decreases and transfer of common stock, reserve, and surplus

The Companies Act requires that an amount equal to 10% of dividends must be appropriated as a legal reserve (a component of retained earnings) or as additional paid-in capital (a component of capital surplus) depending on the equity account charged upon the payment of such dividends until the aggregate amount of legal reserve and additional paid-in capital equals 25% of the common stock. Under the Companies Act, the total amount of additional paid-in capital and legal reserve may be reversed without limitation. The Companies Act also provides that common stock, legal reserve, additional paid-in capital, other capital surplus, and retained earnings can be transferred among the accounts under certain conditions upon resolution of the shareholders.

(c) Treasury stock and treasury stock acquisition rights

The Companies Act also provides for companies to purchase treasury stock and dispose of such treasury stock by resolution of the board of directors. The amount of treasury stock purchased cannot exceed the amount available for distribution to the shareholders which is determined by a specific formula. Under the Companies Act, stock acquisition rights are presented as a separate component of equity. The Companies Act also provides that companies can purchase both treasury stock acquisition rights and treasury stock. Such treasury stock acquisition rights are presented as a separate component of equity or deducted directly from stock acquisition rights.

14. Income Taxes

The tax effects of significant temporary differences and tax loss carry-forwards that resulted in deferred tax assets and liabilities at March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Deferred tax assets:			
Provision for bonuses	¥2,710	¥3,010	$22,146
Write-down of inventories	1,705	1,685	13,932
Unrealized profit of inventories	2,060	1,655	16,838
Impairment loss on investment securities	1,342	1,036	10,972
Tax losses carryforwards (Note b)	6,653	8,879	54,362
Other	12,079	10,443	98,699
Subtotal	26,552	26,710	216,950
Less: Valuation allowance for tax loss carryforwards (Note b)	(5,834)	(8,314)	(47,667)
Less: Valuation allowance for temporary differences	(8,128)	(8,515)	(66,412)
Total valuation allowance (Note a)	(13,962)	(16,830)	(114,079)
Total	¥12,590	¥9,880	$102,871
Deferred tax liabilities:			
Net realized gain on available-for-sale securities	¥(4,451)	¥(4,323)	$(36,370)
Undistributed earnings of consolidated subsidiaries outside Japan	(780)	(787)	(6,374)
Property, plant, and equipment	(464)	(476)	(3,795)
Intangible assets recognized on business combination	(122)	(146)	(1,002)
Other	(1,694)	(1,187)	(13,845)
Total	(7,513)	(6,922)	(61,388)
Net deferred tax assets	¥5,077	¥2,958	$41,482

Notes:

(a) Valuation allowance decreased by ¥2,867 million (U.S.$23,431 thousand). Major reason is a decrease in valuation allowance for tax loss carryforwards in relation to expiration of tax loss carryforwards due to maturity.

(b) The expiration of tax loss carryforwards, the related valuation allowances, and the resulting net deferred tax assets as of March 31, 2022 and 2021, were as follows:

	Millions of yen						
	2022						
	One year or less	After one year through two years	After two years through three years	After three years through four years	After four years through five years	After five years	Total
Deferred tax assets relating to tax loss carryforwards*	¥1,651	¥498	¥1,655	¥463	¥376	¥2,008	¥6,653
Less valuation allowance for tax loss carryforwards	(1,588)	(480)	(1,582)	(452)	(134)	(1,594)	(5,834)
Net deferred tax assets relating to tax loss carryforwards	62	17	72	10	242	414	819

Millions of yen

	2021						
	One year or less	After one year through two years	After two years through three years	After three years through four years	After four years through five years	After five years	Total
Deferred tax assets relating to tax loss carryforwards*	¥2,662	¥1,604	¥484	¥1,662	¥568	¥1,896	¥8,879
Less valuation allowance for tax loss carryforwards	(2,491)	(1,604)	(484)	(1,570)	(558)	(1,605)	(8,314)
Net deferred tax assets relating to tax loss carryforwards	171			92	10	290	565

Thousands of U.S. dollars

	2022						
	One year or less	After one year through two years	After two years through three years	After three years through four years	After four years through five years	After five years	Total
Deferred tax assets relating to tax loss carryforwards*	$13,493	$4,070	$13,522	$3,786	$3,074	$16,413	$54,362
Less valuation allowance for tax loss carryforwards	(12,979)	(3,925)	(12,934)	(3,701)	(1,096)	(13,031)	(47,667)
Net deferred tax assets relating to tax loss carryforwards	514	144	588	85	1,978	3,382	6,694

*Deferred tax assets relating to tax loss carryforwards were calculated by applying the normal effective statutory tax rate.

A reconciliation between the normal effective statutory tax rate and the actual effective tax rate reflected in the accompanying consolidated statement of income for the years ended March 31, 2022 and 2021, was as follows:

	2022	2021
Normal effective statutory tax rate	30.6%	30.6%
Inhabitant taxes per capita	0.9	0.4
Permanent difference		
Expenses not deductible for income tax purposes	2.6	1.9
Foreign withholding taxes	2.2	1.7
Loss on impairment of long-lived assets	1.1	0.2
Changes in valuation allowance	(3.2)	4.9
Lower income tax rates applicable to certain consolidated subsidiaries outside Japan	(8.8)	(11.8)
Equity in earnings of affiliates	(3.2)	(0.8)
Other-net	(0.8)	5.3
Actual effective tax rate	21.4%	32.4%

15. Research and Development Costs

Research and development costs were ¥28,520 million (U.S.$233,031 thousand) and ¥27,477 million for the years ended March 31, 2022 and 2021, respectively and were included in the cost of sales and selling, general, and administrative expenses in the consolidated statement of income.

16. Leases

The Group leases certain machinery, equipment, and vehicles; tools, furniture, and fixtures; and other assets.

Right-of-use assets comprised primarily of building and structures.

17. Financial Instruments and Related Disclosures

(1) Information regarding financial instruments

(a) Group policy on financial instruments

In accordance with the Group's capital expenditure program for the industrial automation and control business and the test and measurement business, the Group uses financial instruments such as bank loans to obtain necessary funding. Cash surpluses are invested in low-risk financial assets. Short-term bank loans are used to fund ongoing operations. Derivatives are used to manage exposure to financial risks as described in Note 18 and are not used for speculative purposes.

(b) Nature of the financial instruments and risk management

Receivables such as trade notes and trade accounts, are exposed to customer credit risk. Those securities are mainly issued by the Group's customers and suppliers, and are managed by regularly monitoring market value and the financial position of the issuers.

Investment securities are exposed to the risk of market price fluctuations. The Group reviews its holdings of these securities, whose issuers are mainly its customers and suppliers, by regularly checking their market value and the financial position of the issuers.

Payment terms of payables such as trade notes and trade accounts, are less than one year.

Long-term debt is used for capital expenditures and investments. In order to manage exposure to market risks from fluctuations in interest rates, the Group principally uses fixed-rate contracts; otherwise, interest rate swap contracts are used for variable rate loans.

Lease obligations are used for primarily capital expenditures and are exposed to liquidity risk at the time of settlement. The Group manages the risk by reviewing funding plan monthly by the group companies.

Foreign currency trade receivables and payables are exposed to market risk resulting from fluctuations in foreign currency exchange rates. Such foreign exchange risk is hedged principally by foreign currency forward contracts and range forward options.

Basic policies on derivative transactions are set out in the Group's internal guidelines. The guidelines prescribe a control policy, designate authorized departments, specify the purpose of the transactions, define the basis for selecting financial institutions, and specify the reporting route.

The fair value of financial instruments is based on the quoted price in an active market. If a quoted price is not available, other valid valuation techniques are used instead.

(2) Fair value of financial instruments

The carrying amounts in the consolidated balance sheet, fair value, and unrealized gain (loss) as of March 31, 2022 and 2021, were as detailed below. Equity securities without market price and investments in partnerships are not included. Please refer to note (a) (below the following tables) on these financial instruments.

	Millions of yen		
	2022		
	Carrying amount	Fair value	Unrealized loss
Investment securities	¥21,851	¥21,851	
Total	¥21,851	¥21,851	
Long-term debt	¥24,109	¥24,034	¥(75)
Lease obligations	8,378	8,358	(19)
Total	¥32,487	¥32,392	¥(95)
Derivatives	¥(1,435)	¥(1,435)	

	Millions of yen		
	2021		
	Carrying amount	Fair value	Unrealized gain (loss)
Investment securities	¥22,275	¥22,275	
Total	¥22,275	¥22,275	
Long-term debt (*2)	¥24,080	¥24,072	¥(7)
Lease obligations (*3)	7,727	7,808	80
Total	¥31,807	¥31,880	¥72
Derivatives (*4)	¥(501)	¥(501)	

	Thousands of U.S. dollars		
	2022		
	Carrying amount	Fair value	Unrealized loss
Investment securities	$178,540	$178,540	
Total	$178,540	$178,540	
Long-term debt (*2)	$196,987	$196,374	$(613)
Lease obligations (*3)	68,454	68,291	(162)
Total	$265,441	$264,665	$(776)
Derivatives (*4)	$(11,732)	$(11,732)	

(*1) Disclosure of cash and cash equivalents, receivables-trade notes, accounts payable-trade notes, accounts, electronically recorded obligations-operating, commercial papers, payables-other, income taxes payable is omitted since their carrying amounts approximate their fair values because of their short maturities.

(*2) Long-term debt includes current portion of long-term debt which is presented on the consolidated balance sheet.

(*3) Current portion of lease obligations is included.

(*4) Assets/liabilities arising from derivative transactions are disclosed as the net amount, and the net payable is shown in parentheses.

Notes:

(a) Equity securities without market price and investments in partnerships as of March 31, 2022 and 2021, are as follows:

	Carrying amount		
	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Equity securities without market price	¥31,191	¥28,611	$254,852
Investment in partnerships	198	60	1,622

Equity securities without market price include unlisted equity securities which are not subject to the fair value disclosure in accordance with Paragraph 5 of ASBJ Guidance No. 19, "Implementation Guidance on Disclosures about Fair Value of Financial Instruments," revised on March 31, 2020. Investment in partnerships are investment partnerships which are not subject to the fair value disclosure in accordance with Paragraph 27 of ASBJ Guidance No. 31, "Implementation Guidance on Accounting Standard for Fair Value Measurement," issued on July 4, 2019.

(b) Maturity analysis for financial assets and securities with contractual maturities as of March 31, 2022, is as follows:

	Millions of yen		Thousands of U.S. dollars	
	2022		2022	
	Due in one year or less	Due after one to five year	Due in one year or less	Due after one to five years
Cash and cash equivalents	¥117,687		$961,574	
Trade notes receivables	11,572		94,551	
Accounts receivable	116,363	¥238	950,756	$1,944
Total	¥245,622	¥238	$2,006,882	$1,944

(c) Fair value measurement of financial instruments and breakdown by level of fair values

Fair values of financial instruments are categorized into following three levels depending on observability and materiality of inputs used for the measurement of fair values.

Level 1: Fair values determined based on unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2: Fair values determined based on inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3: Fair values determined based on unobservable inputs for the asset or liability.

If multiple inputs that have significant impact on the fair value measurement are used, the fair value is categorized in the level of the lowest-level input used in the fair value measurement.

(i) Financial assets and liabilities whose fair values are presented as carrying amounts in the consolidated balance sheets

	Millions of yen			
	2022			
	Fair value			
	Level 1	Level 2	Level 3	Total
Investment securities:				
Equity securities	¥21,748			¥21,748
Total	¥21,748			¥21,748
Derivatives				
Foreign exchange related		¥(462)		¥(462)
Currency related		(973)		(973)
Total		¥(1,435)		¥(1,435)

	Thousands of U.S. dollars			
	2022			
	Fair value			
	Level 1	Level 2	Level 3	Total
Investment securities:				
Equity securities	$177,697			$177,697
Total	$177,697			$177,697
Derivatives				
Foreign exchange related		$(3,778)		$(3,778)
Currency related		(7,953)		(7,953)
Total		$(11,732)		$(11,732)

Investment trusts is not included in accordance with the transitional treatment as stipulated in Paragraph 26 of ASBJ Guidance No. 31, "Implementation Guidance on Accounting Standard for Fair Value Measurement." The carrying amount of investment trust was ¥103 million (U.S.$842 thousand) as of March 31, 2022.

(ii) Financial assets and liabilities whose carrying amounts in the consolidated balance sheets are not based on fair values

	Millions of yen			
	2022			
	Fair value			
	Level 1	Level 2	Level 3	Total
Long-term debt		¥24,034		¥24,034
Lease obligations		8,358		8,358
Total		¥32,392		¥32,392

	Thousands of U.S. dollars			
	2022			
	Fair value			
	Level 1	Level 2	Level 3	Total
Long-term debt		$196,374		$196,374
Lease obligations		68,291		68,291
Total		$264,665		$264,665

Explanation on techniques and inputs used for fair value measurement

Investment securities:
The fair values of listed equity shares are determined based on quoted market prices and categorized in Level 1 as they are actively traded on stock exchanges.

Long-term debt and lease obligations:
The fair values of long-term debt and lease obligations are determined by discounting cash flows related to the debt at the Group's assumed corporate borrowing rate and categorized in Level 2.

Derivatives:
The fair values of derivatives are determined by discounting cash flows using observable inputs, including interest rates, foreign exchange rates and others and categorized in Level 2.

18. Derivatives

Derivative transactions are used to manage foreign exchange risk and the risk of market rate fluctuations that occur in the normal course of business. The Group does not use derivatives for speculative purposes or for highly leveraged transactions.

(1) Derivative transactions to which hedge accounting was not applied at March 31, 2022 and 2021, are as follows:

	Millions of yen			
	2022			
	Contract amount			
	Total	Due after one year	Fair value	Unrealized gain (loss)
Forward exchange contracts				
Selling contracts				
U.S. dollar	¥7,180		¥(332)	¥(332)
Others	3,493		(129)	(129)
Currency swaps				
	15,191		(973)	(973)
Total	¥25,865		¥(1,435)	¥(1,435)

	Millions of yen			
	2021			
	Contract amount			
	Total	Due after one year	Fair value	Unrealized gain (loss)
Forward exchange contracts				
Selling contracts				
U.S. dollar	¥7,457		¥(378)	¥(378)
Others	1,515		(96)	(96)
Currency swaps				
	2,550		(26)	(26)
Total	¥11,523		¥(501)	¥(501)

	Thousands of U.S. dollars			
	2022			
	Contract amount			
	Total	Due after one year	Fair value	Unrealized gain (loss)
Forward exchange contracts				
Selling contracts				
U.S. dollar	$58,669		$(2,717)	$(2,717)
Others	28,547		(1,061)	(1,061)
Currency swaps				
	124,123		(7,953)	(7,953)
Total	$211,340		$(11,732)	$(11,732)

(2) Derivative transactions to which hedge accounting was applied at March 31, 2022 and 2021, are as follows:

		Millions of yen		
		2022		
		Contract amount		
	Hedged item	Total	Due after one year	Fair value
Interest rate swaps				
Pay fixed/receive floating	Long-term debt	¥20,000	¥20,000	Note (b)

		Millions of yen		
		2021		
		Contract amount		
	Hedged item	Total	Due after one year	Fair value
Interest rate swaps				
Pay fixed/receive floating	Long-term debt	¥20,000	¥20,000	Note (b)

		Thousands of U.S. dollars		
		2022		
		Contract amount		
	Hedged item	Total	Due after one year	Fair value
Interest rate swaps				
Pay fixed/receive floating	Long-term debt	$163,412	$163,412	Note (b)

Notes:

(a) The above interest rate swaps, which qualify for hedge accounting and meet specific matching criteria are not remeasured at market value, but the differential paid or received under the swap agreements is recognized and included in interest expense or income.

(b) The fair value of such interest rate swaps is included in that of hedged items disclosed in Note 17.

The contract or notional amounts of the derivatives shown in the above table do not represent the amounts exchanged by the parties and are not a measure of the Group's exposure to credit or market risk.

19. Commitment Line Agreements

The Company has commitment line agreements with financial institutions in order to obtain funds for stable and efficient operation.

The commitment line of credit as of March 31, 2022 and 2021, was as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Total commitment line of credit	¥45,000	¥45,000	$367,677
Outstanding borrowings	Nil	Nil	Nil
Unused credit line	¥45,000	¥45,000	$367,677

20. Other Notes to Consolidated Statement of Income

(1) Provision for contract loss

The following provision for contract loss was included in the cost of sales in the consolidated statement of income:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Provision for contract loss	¥(1,293)	¥(392)	$(10,565)

(2) Selling, general, and administrative expenses

The major components of selling, general and administrative expenses were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Salaries	¥43,457	¥40,972	$355,070
Net periodic retirement benefit costs	3,963	4,264	32,380
Provision for bonuses	5,809	5,854	47,467
Allowance for doubtful accounts	1,900	272	15,524
Research and development costs	28,319	27,062	231,384

(3) Net (loss) gain on disposal of property, plant, and equipment

The net (loss) gain on disposal of property, plant, and equipment was as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Buildings and structures	¥(235)	¥(455)	$(1,922)
Machinery, equipment, and vehicles	(13)	(0)	(106)
Tools, furniture, and fixtures	(19)	(14)	(158)
Land		2	
Other intangible assets	(72)	(45)	(588)
Total	¥(339)	¥(512)	$(2,775)

(4) Business structure improvement expense

Business structure improvement expense was recorded for special initiatives taken for optimization of the Group. For the year ended March 31, 2022, business structure improvement expense is mainly associated with sales of aviation equipment business.

21. Other Comprehensive Income

The components of other comprehensive income for the years ended March 31, 2022 and 2021, were as follows:

	Millions of yen		Thousands of U.S. dollars
	2022	2021	2022
Net unrealized gain on available-for-sale securities:			
(Losses) gains arising during the year	¥(1,210)	¥6,028	$(9,889)
Reclassification adjustments to profit or loss	1,559	(155)	12,738
Amount before income tax effect	348	5,873	2,849
Income tax effect	(127)	(1,520)	(1,042)
Total	¥221	¥4,352	$1,807
Foreign currency translation adjustments:			
Adjustments arising during the year	¥13,031	¥7,388	$106,476
Reclassification adjustments to profit or loss	(60)		(490)
Amount before income tax effect	12,971	7,388	105,985
Income tax effect			
Total	¥12,971	¥7,388	$105,985
Defined retirement benefit plans:			
Adjustments arising during the year	¥88	¥822	$720
Reclassification adjustments to profit or loss	41	200	343
Amount before income tax effect	130	1,023	1,063
Income tax effect	(48)	(237)	(396)
Total	¥81	¥785	$666
Share of other comprehensive income in affiliates:			
Gains arising during the year	¥378	¥185	$3,091
Reclassification adjustments to profit or loss	(21)	(7)	(179)
Total	¥356	¥177	$2,912
Total other comprehensive income	¥13,630	¥12,704	$111,371

22. Per Share Information

Basic net earnings per share (EPS) for the years ended March 31, 2022 and 2021, was as follows:

	Millions of yen	Thousands of shares	Yen	U.S. dollars
	Net income attributable to owners of the parent	Weighted-average shares	EPS	
2022				
Basic EPS				
Net income attributable to common shareholders	¥21,282	266,931	¥79.73	$0.65
2021				
Basic EPS				
Net income attributable to common shareholders	¥19,219	266,933	¥72.00	$0.65

Diluted net income per share was not disclosed because there were no dilutive securities for the years ended March 31, 2022 and 2021.

23. Supplemental Cash Flow Information

Significant non-cash transactions for the year ended March 31, 2022, were omitted due to decreased materiality. Significant non-cash transactions for the year ended March 31, 2021, were as follows:

	Millions of yen
	2021
Lease assets	¥124
Right-of-use assets	7,405
Lease obligations	7,727

24. Revenue Recognition

Breakdown of revenue arising from contracts with customers for the year ended March 31, 2022, was as follows:

Millions of yen

	2022			
	Reportable segment			
	Industrial automation and control	Measuring instruments	Aviation and other	Consolidated
Goods transferred at one point of time	¥168,173	¥21,218	¥6,274	¥195,665
Service transferred over certain period of time	194,235	0		194,235
Sales to customers	¥362,408	¥21,218	¥6,274	¥389,901

Thousands of U.S. dollars

	2022			
	Reportable segment			
	Industrial automation and control	Measuring instruments	Aviation and other	Consolidated
Goods transferred at one point of time	$1,374,079	$173,364	$51,263	$1,598,706
Service transferred over certain period of time	1,587,019	2		1,587,021
Sales to customers	$2,961,098	$173,366	$51,263	$3,185,728

Basic information to understand the revenue arising from contracts with customers are disclosed in Note 2, "Summary of Significant Accounting Policies."

The amount of contract liabilities as of March 31, 2021, for which revenue is recognized during the year ended March 31, 2022, was ¥30,300 million (U.S.$247,573 thousand).

As of March 31, 2022, the amounts of revenue expected to be recognized in future for performance obligations, which are fully or partially unsatisfied, were as follows:

	Millions of yen	Thousands of U.S. dollars
Within one year	¥224,398	$1,833,469
After one year	66,562	543,857
Total	¥290,961	$2,377,327

25. Business Combination

Business combination by acquisition

(1) Outline of the business combination

(a) Name of acquired company and its business outline

Name:	PXiSE Energy Solutions, LLC
Business outline:	Real-time management and development of software for renewable energy and distributed energy resources (DER)

(b) Major reason for the business combination
The Company aims to build on its capabilities in the monitoring and control of power generation facilities and assist customers in the power transmission and distribution sectors to meet their clean energy goals.

(c) Date of the business combination
December 1, 2021

(d) Legal form of the business combination
Share acquisition in consideration for cash

(e) Name of the company after the business combination
No change

(f) Ratio of voting rights acquired
100%

(g) Basis for determining the acquirer
It is based on the fact that the Company acquired shares in consideration for cash

(2) Period for which the acquired company's business results are included in the consolidated financial statements
December 1, 2021, to March 31, 2022

(3) Details of acquisition cost and consideration by type
Cash consideration of U.S.$51 million

(4) Details and amounts of main acquisition costs
Due diligence expenses: ¥138 million (U.S.$1,129 thousand)

(5) Amount, reason, amortization method, and period of goodwill recognized

(a) Amount of goodwill recognized
¥5,706 million (U.S.$46,626 thousand)
At March 31, 2022, allocation of the acquisition cost has not been completed since identifiable assets and liabilities as of the business combination date have not been identified and measurement of the fair values has not been completed. Accordingly, the provisional accounting treatment has been applied for the amount of goodwill based on the reasonable information available at that time.

(b) Reason for goodwill recognized
The future excess earning power expected as a result of business development going forward

(c) Method and period of amortization
Straight-line method over five years

(6) Details of assets acquired and liabilities assumed at the acquisition date

	Millions of yen	Thousands of U.S. dollars
Current assets	¥231	$1,892
Total assets	¥231	$1,892
Current liabilities	¥116	$948
Long-term liabilities	10	81
Total liabilities	¥126	$1,030

(7) Estimated impact on the consolidated statement of income for the year ended March 31, 2022, assuming the business combination was completed at the beginning of the current fiscal year
The information is not disclosed because it is difficult to determine the estimated impact for the year ended March 31, 2022.

Business combination by acquisition

(1) Outline of the business combination

(a) Name of acquired company and its business outline

Name:	Insilico Biotechnology AG
Business outline:	Development, manufacturing, and construction of total solution of bioprocess for biopharma industry

(b) Major reason for the business combination
Demand is expected to grow for biopharmaceuticals that have fewer side effects and can be used to treat patients with rare and intractable conditions.

(c) Date of the business combination
December 31, 2021 (deemed date of acquisition)

(d) Legal form of the business combination
Share acquisition in consideration for cash

(e) Name of the company after the business combination
Yokogawa Insilico Biotechnology GmbH

(f) Ratio of voting rights acquired
100%

(g) Basis for determining the acquirer
It is based on the fact that the Company acquired shares in consideration for cash.

(2) Period for which the acquired company's business results are included in the consolidated financial statements
January 1, 2022, to March 31, 2022

(3) Details of acquisition cost and consideration by type
Cash consideration of EUR26 million

(4) Details and amounts of main acquisition costs
Due diligence expenses: ¥82 million (U.S.$677 thousand)

(5) Amount, reason, amortization method, and period of goodwill recognized

(a) Amount of goodwill recognized

¥3,823 million (U.S.$31,237 thousand)

At March 31, 2022, allocation of the acquisition cost has not been completed since identifiable assets and liabilities as of the business combination date have not been identified and measurement of the fair values has not been completed. Accordingly, the provisional accounting treatment was applied for the amount of goodwill based on the reasonable information available at that time.

(b) Reason for goodwill recognized

The future excess earning power expected as a result of business development going forward

(c) Method and period of amortization

Straight-line method over 11 years

(6) Details of assets acquired and liabilities assumed at the acquisition date

	Millions of yen	Thousands of U.S. dollars
Current assets	¥325	$2,655
Non-current assets	285	2,332
Total assets	¥610	$4,988
Current liabilities	¥837	$6,845
Long-term liabilities	92	754
Total liabilities	¥930	$7,599

(7) Estimated impact on the consolidated statement of income for the year ended March 31, 2022, assuming the business combination was completed at the beginning of the current fiscal year

The information is not disclosed because it is difficult to determine the estimated impact for the year ended March 31, 2022.

26. Subsequent Events

Appropriation of retained earnings

The board of directors proposed the following appropriation of retained earnings at March 31, 2022, which was approved at the general meeting of the shareholders of the Company held on June 22, 2022:

	Millions of yen	Thousands of U.S. dollars
Year-end cash dividends, ¥17.0 (U.S.$0.14) per share	¥4,537	$37,076

Business divestiture

The Company transferred the aviation equipment business of the Company and Yokogawa Manufacturing Corporation, a consolidated subsidiary of the Company, to Oki Electric Industry Co., Ltd. ("Oki Electric") on April 1, 2022.

(1) Outline of the business divestiture

(a) Name of the successor company

Oki Electric Industry Co., Ltd.

(b) Outline of the divested business

Aviation equipment business

(c) Major reason for the business divestiture

Under its "Accelerate Growth 2023" mid-term business plan, the Company is aiming to create new value by focusing on the energy and sustainability, materials, and life industry business areas. Oki Electric, on the other hand, is focusing on possibilities of developing new products that combine the technological assets held by Oki Electric and the Company and opening up new markets by leveraging the Company's aviation equipment technology and know-how as well as its customer base. The Company has decided to transfer its aviation equipment business to Oki Electric since both Oki Electric and the Company share interest in continued growth of this business.

(d) Date of the business divestiture

April 1, 2022

(e) Other matters regarding the outline of the business divestiture, including legal form

Transfer of business with consideration received only in forms of assets such as cash

(2) Outline of the accounting treatment

(a) Amount of gain on the share transfer

	Millions of yen	Thousands of U.S. dollars
Gain on sale of investment in a subsidiary	Nil	Nil

Loss on share transfer and other expenses relating to the business divesture of ¥1,390 million (U.S.$11,365 thousand) was included in business structure improvement expense in other expenses for the year ended March 31, 2022.

(b) Details of consolidated balance sheet amount of assets and liabilities of divested business

	Millions of yen	Thousands of U.S. dollars
Current assets	¥1,443	$11,794
Non-current assets	39	322
Total assets	¥1,483	$12,117

(c) Accounting treatment

The business divestiture is accounted for in accordance with the ASBJ Statement No. 7, "Accounting Standard for Business Divestitures," issued on September 13, 2013, and the ASBJ Guidance No.10, "Implementation Guidance on Accounting Standard for Business Divestitures," issued on January 16, 2019.

(3) Reportable segment in which the divested business was included

Aviation and other

(4) Estimated sales and income of the divested business included in the consolidated statement of income for the year ended March 31, 2022

	Millions of yen	Thousands of U.S. dollars
Net sales	¥4,871	$39,800
Operating loss	(1,034)	(8,449)

27. Segment Information

Under ASBJ Statement No. 17, "Accounting Standard for Segment Information Disclosures," and ASBJ Guidance No. 20, "Guidance on Accounting Standard for Segment Information Disclosures," an entity is required to report financial and descriptive information about its reportable segments. Reportable segments are operating segments or aggregations of operating segments that meet specified criteria. Operating segments are components of an entity about which separate financial information is available and such information is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. Generally, segment information is required to be reported on the same basis as is used internally for evaluating operating segment performance and deciding how to allocate resources to operating segments.

(1) Description of reportable segments

The Group's reportable segments are those for which separate financial information is available and regular evaluation by the Company's management is being performed in order to decide how resources are allocated among the Group. The Group operates in three business segments: industrial automation and control, measuring instruments, and aviation and other businesses.

The industrial automation and control business offers comprehensive solutions, including field instruments such as flow meters, differential pressure/pressure transmitters, and process analyzers; control systems and programmable controllers; various types of software to enhance productivity; and services that minimize plant life cycle costs.

The measuring instruments business mainly offers waveform measuring instruments; optical communications measuring instruments; signal generators; and electric voltage, current, and power measuring instruments.

The aviation and other businesses segment mainly offers instruments for aviation use.

(2) Accounting methods for each reportable segment's sales, income (loss), assets, and other items

The accounting policies for each reportable segment are consistent with those disclosed in Note 2, "Summary of Significant Accounting Policies."

The aggregate of the income or loss for each reportable segment corresponds to the operating income or loss in the consolidated statement of income.

The assets of a reportable segment consist of trade notes receivable; accounts receivable; contract assets; inventories; property, plant, and equipment; and intangible assets.

(3) Changes in reportable segments

As a result of reviewing the Group's internal management classification, the life innovation business that was previously included in the test and measurement business segment has been reclassified into the industrial automation and control business segment from the year ended March 31, 2022. In addition, the name of the reportable segment previously presented as the test and measurement business has been changed to the measuring instruments business. Segment information for the year ended March 31, 2021, has been reclassified to conform to the new classification.

(4) Information about sales, income (loss), assets, and other items

Millions of yen

	2022				
	Reportable segment				
	Industrial automation and control	Measuring instruments	Aviation and other	Eliminations/ Corporate	Consolidated
Sales to customers	¥362,408	¥21,218	¥6,274		¥389,901
Intersegment sales					
Total sales	¥362,408	¥21,218	¥6,274		¥389,901
Segment income (loss)	¥29,771	¥3,419	¥(2,504)		¥30,685
Segment assets	331,387	12,462	10,742		354,593
Depreciation and amortization	15,880	815	230		16,926
Loss on impairment of long-lived assets	191		1,219		1,410
Increase in property, plant, and equipment and intangible assets	29,862	969	396		31,228
Amortization of goodwill	876		135		1,011
Goodwill	12,378				12,378

Millions of yen

	2021				
	Reportable segment				
	Industrial automation and control	Measuring instruments	Aviation and other	Eliminations/ Corporate	Consolidated
Sales to customers	¥342,134	¥25,727	¥6,343		¥374,206
Intersegment sales					
Total sales	¥342,134	¥25,727	¥6,343		¥374,206
Segment income (loss)	¥31,520	¥1,149	¥(1,069)		¥31,599
Segment assets	305,460	12,758	15,659		333,879
Depreciation and amortization	16,196	537	255		16,988
Loss on impairment of long-lived assets	486				486
Increase in property, plant, and equipment and intangible assets	18,108	2,165	293		20,567
Amortization of goodwill	446		128		574
Goodwill	3,037		1,209		4,247

Thousands of U.S. dollars

	2022				
	Reportable segment				
	Industrial automation and control	Measuring instruments	Aviation and other	Eliminations/ Corporate	Consolidated
Sales to customers	$2,961,098	$173,366	$51,263		$3,185,728
Intersegment sales					
Total sales	$2,961,098	$173,366	$51,263		$3,185,728
Segment income (loss)	$243,247	$27,935	$(20,460)		$250,722
Segment assets	2,707,638	101,828	87,775		2,897,242
Depreciation and amortization	129,751	6,660	1,883		138,295
Loss on impairment of long-lived assets	1,564		9,958		11,522
Increase in property, plant, and equipment and intangible assets	243,997	7,919	3,239		255,157
Amortization of goodwill	7,160		1,107		8,268
Goodwill	101,142				101,142

(5) Information about geographical areas

(a) Sales

Millions of yen

2022									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥118,960	¥60,708	¥61,044	¥15,407	¥33,012	¥13,239	¥33,160	¥43,409	¥10,959	¥389,901

Millions of yen

2021									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥120,338	¥58,641	¥52,217	¥13,415	¥30,073	¥14,293	¥33,430	¥42,013	¥9,782	¥374,206

Thousands of U.S. dollars

2022									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
$971,976	$496,023	$498,768	$125,888	$269,729	$108,172	$270,938	$354,682	$89,549	$3,185,728

Note: Sales are categorized in each country or area based on the location of end users.

(b) Property, plant, and equipment

Millions of yen

2022									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥53,774	¥10,346	¥6,860	¥1,306	¥8,694	¥481	¥2,283	¥2,790	¥405	¥86,943

Millions of yen

2021									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
¥54,020	¥10,182	¥5,343	¥1,205	¥8,504	¥621	¥2,039	¥2,293	¥367	¥84,579

Thousands of U.S. dollars

2022									
Japan	Southeast Asia, Far East	China	India	Europe	Russia	North America	Middle East, Africa	Middle and South America	Total
$439,368	$84,540	$56,053	$10,677	$71,042	$3,930	$18,661	$22,796	$3,312	$710,382

(6) Information about major customers

No customer accounts for 10% or more of total sales of the Group.

Deloitte.

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INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of
Yokogawa Electric Corporation:

Opinion

We have audited the consolidated financial statements of Yokogawa Electric Corporation and its consolidated subsidiaries (the "Group"), which comprise the consolidated balance sheet as of March 31, 2022, and the consolidated statement of income, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, all expressed in Japanese yen.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of March 31, 2022, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with accounting principles generally accepted in Japan.

Convenience Translation

Our audit also comprehended the translation of Japanese yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made in accordance with the basis stated in Note 1 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of readers outside Japan.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in Japan. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the provisions of the Code of Professional Ethics in Japan, and we have fulfilled our other ethical responsibilities as auditors. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matter

A key audit matter is a matter that, in our professional judgment, was of most significance in our audit of the consolidated financial statements of the current period. The matter was addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on the matter.

Member of
Deloitte Touche Tohmatsu Limited

Estimation of the total costs of construction contracts	
Key Audit Matter Description	How the Key Audit Matter Was Addressed in the Audit
The Group sells products and provides services related to engineering, revamping and maintenance in the Industrial Automation and Control business, which is the core business of the Group. As described in Note 2(p) "Summary of Significant Accounting Policies - Revenue Recognition" to the consolidated financial statements, if the progress towards satisfaction of performance obligations for construction contracts related to engineering services can be measured reasonably, the Group recognizes revenue based on the progress measured. Of the total net sales of 389,901 million yen for the year ended March 31, 2022, 172,979 million yen was revenue recognized in accordance with this accounting policy. In addition, as described in Note 2(l) "Summary of Significant Accounting Policies - Provision for Contract Loss" to the consolidated financial statements, when it is probable that the estimated total costs of the construction contract will exceed total construction revenue, an estimated loss on the contract is provided for as a provision for contract loss. Provision for contract loss as of March 31, 2022, was 6,499 million yen. The progress towards satisfaction of performance obligations, which as described above, is used to recognize revenue for certain construction contracts that contain engineering services, is measured on the basis of the percentage of actual costs incurred up to the end of the year against the estimated total future costs. The provision for contract loss is calculated by taking the excess of estimated total costs of the construction contract above total construction revenue. Therefore, the estimation of the total costs of construction contracts has a significant impact on both revenue recognition and the calculation of the provision for contract loss. Some construction contracts have a wide scope and large scale, and others involve a high degree of complexity, such as those requiring advanced system integration. Therefore, events not expected at the beginning of the construction may occur during the construction period, and conversion costs, such as labor and subcontracting costs as well as expenses related to the event could be incurred. In such instances, estimations of the total costs of a construction contract may involve a high degree of uncertainty.	Our audit procedures related to the estimation of the total costs of construction contracts that may affect both the revenue recognition of construction contracts and the calculation of the provision for contract loss included the following, among others: (1) Evaluation of internal controls We tested the design and operating effectiveness of the following controls over the estimation of the total costs of construction contracts. • Internal controls to monitor the progress of construction with qualitative or quantitative significance on a regular basis in order to keep track of any changes in the status after the commencement of construction and to take corrective measures in a timely manner • Internal controls to ensure the reasonableness of the estimated total costs of construction contracts at the commencement of construction and to revise such costs in a timely manner in accordance with any changes in circumstances after the construction has commenced • Internal controls to ensure the completeness of the provision for contract loss for the construction contracts of which the estimated total costs will exceed total construction revenue (2) Evaluation of the reasonableness of the estimated total costs of construction contracts We obtained the relevant documents related to controls which monitor the progress of construction contracts, selected contracts in which the estimated total costs significantly increased or are expected to increase in the future in comparison with the initial total costs estimated at the commencement of construction, and performed the following procedures on the selected construction contracts: • We assessed the reasonableness of the assumptions used by the Group by making inquiries of the personnel in charge of monitoring the progress of construction regarding their estimates for additional conversion costs which are labor and subcontracting costs and expenses which are required to respond to events that cause a significant increase in total construction costs.

Therefore, we determined that the estimation of the total costs of construction contracts that contain engineering services as a key audit matter, as it affects both the measurement of the progress towards satisfying performance obligations which is used to recognize revenue for certain construction contracts and the calculation of the provision for contract loss.	• We compared the estimated total costs of construction with the latest construction schedule plan, the cost calculation sheet and other related documents to evaluate their consistency. • We compared the estimated total costs of construction at the end of the year with the initial estimated total costs of construction at the commencement of construction or with the estimated total costs after the change if there was a change during the year to evaluate the accuracy of the estimated total costs of construction.

Other Information

Management is responsible for the other information. Audit & Supervisory Board members and the Audit & Supervisory Board are responsible for overseeing the Directors' execution of duties relating to the design and operating effectiveness of the controls over the other information. The other information comprises the information included in the Integrated Report (Yokogawa Report), but does not include the consolidated financial statements and our auditor's report thereon. The Integrated Report (Yokogawa Report) is expected to be made available to us after the date of this auditor's report.

Our opinion on the consolidated financial statements does not cover the other information and we will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

Responsibilities of Management and Audit & Supervisory Board Members and the Audit & Supervisory Board for the Consolidated Financial Statements

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

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern in accordance with accounting principles generally accepted in Japan and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Audit & Supervisory Board members and the Audit & Supervisory Board are responsible for overseeing the Directors' execution of duties relating to the design and operating effectiveness of the controls over the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in Japan will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with auditing standards generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks. The procedures selected depend on the auditor's judgment. In addition, we obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain, when performing risk assessment procedures, an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate whether the overall presentation and disclosures of the consolidated financial statements are in accordance with accounting principles generally accepted in Japan, as well as the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with Audit & Supervisory Board members and the Audit & Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide Audit & Supervisory Board members and the Audit & Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with Audit & Supervisory Board members and the Audit & Supervisory Board, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Interest Required to Be Disclosed by the Certified Public Accountants Act of Japan

Our firm and its designated engagement partners do not have any interest in the Group which is required to be disclosed pursuant to the provisions of the Certified Public Accountants Act of Japan.

Deloitte Touche Tohmatsu LLC

August 2, 2022

IR Activities

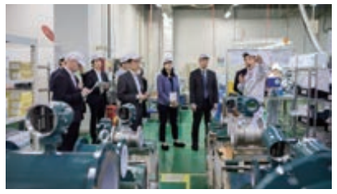
Through IR activities, which consist of information disclosure, direct dialogue with shareholders and investors, and internal feedback, we will contribute to the improvement of mid- to long-term corporate value. We also strive to build and maintain trusting relationships with all stakeholders.

Major Activities

Major Initiatives	FY2021	Objectives	Contents
For analysts and investors			
Financial results briefings	4 times	Understanding of financial results and management policies and strategies	Quarterly financial results briefings *1 (presentation by the president and the director in charge of IR in the 1st, 2nd and 4th quarters, and presentation by the director in charge of IR in the 3rd quarter)
Meetings with president	10 times (about 20)		Meetings with analysts and investors in Japan and overseas *1, 2 (including small meetings)
Meetings with IR staff	Approximately 300		Meetings with analysts and investors in Japan and overseas *1, 2 (Approximately 220 in Japan and 80 overseas)
Business briefings/IR DAY /Sustainability meetings	1 time	Understanding of business	Sustainability initiatives (2019), Industrial automation to industrial autonomy *2 (2020), Bio economy initiatives, *2 and business outline and strategies for the control subsegments "Energy & Sustainability Business/Materials Business/Life Business" and DX goals, results, progress, etc. *2 (2021) briefings (explanations by directors in charge and members of management team)
Tours of customer/ Yokogawa plants	—*3		Tour of JXTG's Mizushima oil refinery (2018), tour of Singapore office (2018), tours of Suzhou (China) factory and a customer's pharmaceutical plant (2019), and tours of Kofu factory (2013 to 2019)
For individual investors			
IR information e-mail service	19 times	Understanding of efforts to enhance corporate value over medium to long term	Disclosure of information on financial results briefings, business briefings, website updates, etc.
Corporate briefings	—*3		Holding of regular corporate briefings to promote dialogue

*1) Use of teleconferencing *2: Use of remote tools *3: Not implemented after FY2020 due to COVID-19

Corporate briefing for individual investors (2019)



Visiting Suzhou plant and customer's pharmaceutical plant in China (2019)

Evaluations from Outside the Company

Evaluations Related to IR Activities	
Designation as "Excellent Integrated Report" and "Highly Improved Integrated Report" (Government Pension Investment Fund)	**Excellent Integrated Report** (FY2017 to FY2019, FY2021) **Highly Improved Integrated Report** (FY2017, FY2018 and FY2021)
Commendation of Annual Securities Report as "Best Practice in Disclosure of Descriptive Information" (Financial Services Agency)	**Listed in 5. "Management's Analysis of Financial Position, Operating Results and Cash Flow (MD & A)" (2) Analysis and Review of Cash Flow Status** (FY2020)
IR Award (Japan Investor Relations Association)	**IR Special Award** (FY2019)
Internet IR Commendation Award (Daiwa Investor Relations Co., Ltd.)	**Excellence Award** (FY2013 to FY2015, FY2018 to FY2020)
All Japanese Listed Companies' Website Ranking (Nikko Investors Relations Co., Ltd.)	**Overall ranking : AAA** (FY2016 to FY2021 (6 consecutive years)) **Overall ranking : AA** (FY2013 and FY2015) **Overall ranking : A** (FY2014)
Gomez IR Site Ranking (BroadBand Security, Inc.)	**Silver Award** (FY2019 and FY2020) **Bronze award** (FY2013 to FY2018, FY2021)

Editing Team

Accounting & Treasury Headquarters	Michiko Nakajima (Editor-in-chief/Officer in charge)
Investor Relations Department	Hirohiko Nakatani (Managing editor), Mariko Yasuda
Investor Relations Section	Mariko Yasuda, Hirotaka Tomonou (Associate Editor), Tsuneo Kowata, Miki Noda
Corporate Administration Headquarters, Sustainability Promotion Department	Takashi Hara
Marketing Headquarters, Brand Promotion Department, Integrated Communications Center	Toshiro Tsuda, Miki Nemoto

Corporate Data / Stock Information / Principal Subsidiaries and Affiliates

As of March 31, 2022

Corporate Data

- **Corporate Name** Yokogawa Electric Corporation
- **President and CEO** Hitoshi Nara
- **Headquarters** 2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750, Japan
- **Founded** September 1, 1915
- **Incorporated** December 1, 1920
- **Paid-in Capital** 43,401 million yen
- **Number of Employees** 17,258 (consolidated) 2,503 (non-consolidated)
- **Subsidiaries and Affiliates** 110 outside Japan, 11 in Japan

Investor Information

- **Number of Shares Authorized** 600,000,000
- **Number of Shares of Common Stock Issued** 268,624,510
- **Number of Shareholders** 15,596
- **Stock Exchange Listing** Tokyo Stock Exchange
- **Administrator of the Register of Shareholders** Mizuho Trust & Banking Co., Ltd. 2-8-4 Izumi, Suginami-ku, Tokyo 168-8507, Japan
- **Annual General Meeting of Shareholders** The annual general meeting of shareholders of the Company is held in June.
- **Accounting Auditor** Deloitte Touche Tohmatsu LLC

Major Shareholders (Top 10)

Shareholders	Number of shares held (thousand shares)	Shareholding ratio (%)
Master Trust Bank of Japan Limited (trust account)	65,252	24.4
Custdy Bank of Japan, Ltd.(trust account)	15,880	5.9
The Dai-ichi Life Insurance Company, Limited	15,697	5.9
Nippon Life Insurance Company	13,484	5.1
State Street Bank and Trust Company 505223	7,874	2.9
Retirement Benefit Trust in Mizuho Trust & Banking Co., Ltd. (Mizuho Bank, Ltd. account); Custdy Bank of Japan, Ltd.	6,141	2.3
Yokogawa Electric Employee Shareholding Program	5,381	2.0
The Bank of New York Mellon (international) Limited 131800	4,552	1.7
BNYM as AGT/CLTS 10 Percent	4,204	1.6
BBH (LUX) for Fidelity Funds-Global Technology Pool	4,169	1.6

Notes: 1. The Company holds 1,694 thousand shares of treasury stock.
2. The shareholding ratio is calculated after deducting treasury stock.

Shareholders by Category

Individual investors	14,626 (93.8%)
Foreign investors	667 (4.3%)
Others	224 (1.4%)
Financial institutions	47 (0.3%)
Securities companies	31 (0.2%)
Treasury stock	1 (0.0%)

Shareholding by Category

Financial institutions	131,405,716 (48.9%)
Foreign investors	97,375,841 (36.2%)
Individual investors	23,546,999 (8.8%)
Others	9,406,043 (3.5%)
Securities companies	5,195,816 (1.9%)
Treasury stock	1,694,095 (0.6%)

Principal Subsidiaries and Affiliates

North America

United States
Yokogawa Corporation of America
Yokogawa Fluid Imaging Technologies, Inc.
Fluence Analytics
PXiSE Energy Solutions, LLC

Canada
Yokogawa Canada, Inc.

Mexico
Yokogawa de Mexico, S.A. de C.V.

South America

Brazil
Yokogawa America do Sul Ltda.

Colombia
Yokogawa Colombia S.A.S

Europe

Netherlands
Yokogawa Europe B.V.

Austria
Yokogawa GesmbH, Central East Europe

Slovakia
Yokogawa Slovakia s.r.o.

Czech Republic
Yokogawa Czech Republic s.r.o

Belgium
Yokogawa Belgium N.V./S.A.

France
Yokogawa France S.A.S.

Germany
Yokogawa Deutschland GmbH
Insilico Biotechnology AG

Hungary
Yokogawa Hungaria Kft.

Italy
Yokogawa Italia S.r.l.

Poland
Yokogawa Polska Sp.zo.o

Spain
Yokogawa Iberia S.A.

Turkey
Yokogawa Turkey Industrial Automation Solutions A.S.

United Kingdom
Yokogawa United Kingdom Limited

Norway
Yokogawa TechInvent AS

CIS

Russia
Yokogawa Electric CIS Ltd.

Kazakhstan
Yokogawa Electric Kazakhstan Ltd.

Ukraine
Yokogawa Electric Ukraine Ltd.

Middle East

Bahrain
Yokogawa Middle East & Africa B.S.C. (c)

Saudi Arabia
Yokogawa Saudi Arabia Ltd.

United Arab Emirates
Yokogawa Engineering Middle East & Africa FZE

Oman
Yokogawa Oman Limited Liability Company

Africa

South Africa
Yokogawa South Africa (Pty) Ltd.

Nigeria
Yokogawa Nigeria Limited

Oceania

Australia
Yokogawa Australia Pty. Ltd.

New Zealand
Yokogawa New Zealand Limited

Asia

Singapore
Yokogawa Electric International Pte. Ltd.
Yokogawa Engineering Asia Pte. Ltd.

Indonesia
P.T. Yokogawa Indonesia

Malaysia
Yokogawa Electric (Malaysia) Sdn. Bhd

Philippines
Yokogawa Philippines Inc.

Thailand
Yokogawa (Thailand) Ltd.

Vietnam
Yokogawa Vietnam Company Ltd.

India
Yokogawa India Ltd.

China
Yokogawa China Co., Ltd.

Korea
Yokogawa Electric Korea Co., Ltd.

Taiwan
Yokogawa Taiwan Corporation

Japan
Yokogawa Electric Corporation
Yokogawa Solution Service Corporation
Yokogawa Test & Measurement Corporation
Yokogawa Bio Frontier Inc.

etc.

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