



2022 Yokogawa
Sustainability Report

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

(Yokogawa's Purpose adopted in 2021)

Aspiring to address social issues, leveraging Yokogawa's ability to measure and connect, we adopted Yokogawa's Purpose. No single organization or system alone can solve the serious issues the world faces, such as climate change, plastic and waste, and COVID-19. We need to look for ways to address issues by assessing situations, sharing a range of information, and organically connecting organizations and systems. It is also important to respect the human rights of all people and build a world without discrimination as our basic premise. Yokogawa will continue to seek reform together with stakeholders around the world, striving to make the world a better place for future generations.

Statement on Yokogawa's Aspiration for Sustainability

Yokogawa will work to achieve net-zero emissions, ensure the well-being of all, and make a transition to a circular economy by 2050, thus making the world a better place for future generations.

We will undergo the necessary transformation to achieve these goals by 1. becoming more adaptable and resilient, 2. evolving our businesses to engage in regenerative value creation, and 3. promoting co-innovation with our stakeholders.

(Set in 2017)

The Yokogawa Philosophy

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.



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Yokogawa Business Overview

Yokogawa contributes to solving social issues, utilizing its ability to measure and connect.

We have divided the control business, our main business, into three industry segments: Energy & Sustainability, Materials, and Life. That allows us to provide products and solution services that can solve issues of customers in various industries and social issues.

Energy & Sustainability

The energy & sustainability business segment protects the environment by supporting the effective use of energy and contributing to the realization of a sustainable society. Capitalizing on its expertise and strong customer relationships in the oil & gas, petrochemical, renewable energy, power, energy management, and energy storage fields, Yokogawa supports safe and optimal operations throughout the increasingly diversified energy supply chain, from production and supply through to use, disposal, and recycling.

- Oil & gas
- Petrochemicals
- Renewable energy
- Power
- Energy management
- Energy storage

Materials

The materials business segment is helping to bring about a circular economy that offers comfort and convenience and is in harmony with the environment. For our customers in the functional chemicals, biomass materials, pulp & paper, textiles, steel, non-ferrous metals, mining, mobility, and electrical/electronics fields, we provide solutions that improve productivity, reduce environmental impact, and save energy.

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

Life

The life business segment provides solutions that support people's lives and protect health and safety. In addition to our activities in the pharmaceuticals and healthcare fields, we are engaged in businesses that ensure everyone has access to safe water and food. To improve productivity throughout the pharmaceutical and food value chains, we utilize the sensing and control technologies that Yokogawa has developed over the years to support innovations in product and production processes. In the water field, we aim to create new value by using the measurement technologies that have been acquired through our activities in such fields as genome analysis and scientific instrumentation.

- Pharmaceuticals
- Healthcare
- Food
- Water

Measuring Instruments, New Businesses and Other

The measuring instruments business helps our customers achieve technological innovation. We provide total solutions, including software and services to customers in three industrial fields (decarbonization, telecommunication, and wellbeing), making full use of high-precision measuring technology. Our new businesses include bio-related businesses.

Measuring instruments

- Energy
- Info-comm
- Healthcare

New businesses and other

- Yokogawa Bio Frontier Inc.
- Amnimo Inc. and others

Search areas

Disaster prevention, space, the oceans



Yokogawa Technologies

Yokogawa contributes to society and environment, solving customer issues based on proven technologies.

Utilizing our ability to measure and connect, we accelerate the realization of a sustainable society.

■ Yokogawa, a Global Technology Company

Since its foundation in 1915, Yokogawa has been contributing to making the world a better place as a global technology company that provides cutting-edge products and solutions to industries focused on its measurement, control, and information technologies. The control business, Yokogawa’s main business, provides products and solutions across a wide variety of industries such as petroleum, gas, chemistry, electric power, steelmaking, paper and pulp, pharmaceuticals, and food. The reliable technologies and quality of Yokogawa’s products are highly recognized even in resource-rich countries and emerging countries overseas as well as Japan.

■ Technological Development Toward an Era of Full-fledged DX

In a highly unpredictable and uncertain global society, i.e., in the era of volatility, uncertainty, complexity, and ambiguity (VUCA), there is rapidly increasing demand for improving productivity, efficiency, and safety through digital transformation (DX), generating, storing, and utilizing renewable energy, and optimizing manufacturing processes of pharmaceuticals. Amid these changes, more flexible functions and solutions are also demanded in the service businesses for the manufacturing industry. By accurately responding to such changes in society and customer needs while transforming itself on an ongoing basis, Yokogawa has continued to work with customers to create value through finding solutions for issues.

Traditionally, as information technology (IT) and operational technology (OT) are handled

separately in different fields, such information have not been shared sufficiently. In recent years, as AI has reached a stage of practical use thanks to the utilization of deep learning and furthermore, IIoT and remote connection technologies have spread, the “IT/OT convergence” which integrates information technology (IT) with operational technology (OT) has become increasingly important. Acceleration of IT/OT convergence is steadily driving full-fledged DX which comprehensively covers companies and entire supply chains.

■ Challenges to become an Integrator Leading the System of Systems (SoS)^{*1} World

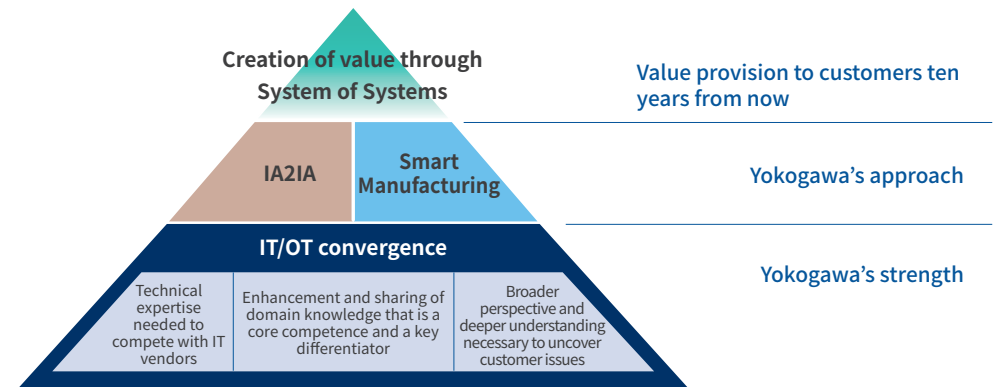
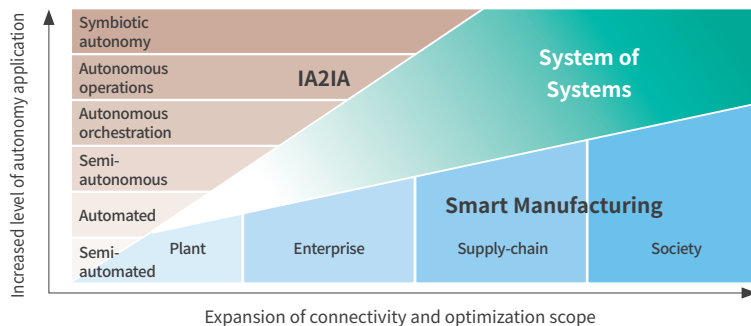
Up to the present, Yokogawa has accumulated a broad range of system integration and engineering technologies. In an accelerating smart society, by leveraging our strength of the knowledge and technological capabilities of IT/OT convergence while being based on these technologies, Yokogawa will provide value through approaches including IA2IA^{*2}, which helps the transition from industrial automation to industrial autonomy in the manufacturing industry, and smart manufacturing to aim at innovative productivity improvements through DX. Furthermore, Yokogawa will contribute to a sustainable society by becoming an integrator that can lead the world in making society an SoS.

*1. 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.

*2. IA2IA: Industrial Automation to Industrial Autonomy

Initiatives to make industrial automation evolve to industrial autonomy by incorporating trends of DX such as robotics and blockchain technology





Global Business Expansion

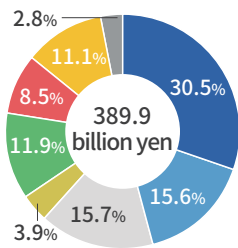
Yokogawa conducts business in more than 80 countries around the world.

We are actively recruiting local human resources at each location and have built trust with customers and local communities over many years.

Moreover, based on our corporate philosophy, we are engaged in businesses for the realization of a sustainable society as good citizens.

Net Sales by Region

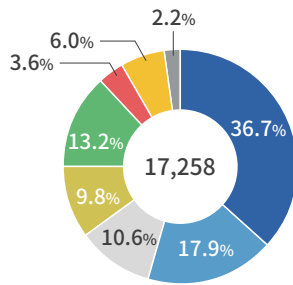
FY2021



■ Japan ■ Southeast Asia/Far East ■ China ■ India ■ Europe ■ Russia ■ North America
 ■ Middle East/Africa ■ Central and South America

Employees by Region

At the end of FY2021



Global Network



External Ratings

Yokogawa's ESG (environment, society, governance) management has received high external ratings.



Selected for the first time for inclusion in the Carbon Clean 200™ (Clean200), a list of 200 publicly traded companies worldwide that are leading the way among their global peers to a clean energy future



Promoting Engagement

Yokogawa is engaging with diverse stakeholders based on the themes below. We are also striving to solve social issues through co-innovation with external organizations.

Stakeholder Engagement

Customers	Shareholders and investors	Employees	Suppliers	Local communities and society
Objectives and themes				
<ul style="list-style-type: none"> Solve social issues faced by customers Establish a support system 	<ul style="list-style-type: none"> Disclose information in a timely and appropriate manner Have active and continuous dialogue Feedback to management 	<ul style="list-style-type: none"> Employees' engagement Human resource development and capability development Establish a comfortable working environment Respect workers' rights 	<ul style="list-style-type: none"> Equal and fair business relationships Promote supply chain sustainability 	<ul style="list-style-type: none"> Contribute to the sustainable development of an international society Protect the Earth's environment
Major initiatives				
<ul style="list-style-type: none"> Provide consulting services to identify and solve issues Develop and provide products and services utilizing cutting-edge technologies and DX Establish a global service structure 	<ul style="list-style-type: none"> Financial results briefings (quarterly) and general shareholders meetings (annually) IR events including business strategy briefings Individual meetings with investors and analysts 	<ul style="list-style-type: none"> Conduct engagement surveys to identify the status and respond to it Leverage Yokogawa University (an in-house institution) to promote learning Establishing the occupational health and safety committees Consultation between labor and management 	<ul style="list-style-type: none"> Implement sustainable procurement based on self-assessment questionnaires (SAQ) Promote green procurement with less environmental burdens 	<ul style="list-style-type: none"> Participate in international projects to help emerging and developing countries develop further Reduce greenhouse gas and preserve water resources Cooperate with NGOs and NPOs Engage in volunteer activities in local communities
Related information				
Global business expansion (P.05) Stories of growing our businesses and contributing to society (P.15)	"Investor Relations" on our website https://www.yokogawa.com/about/ir/	Improvement of Employee Engagement (P.35) Human Resources Development (P.37) A Safe and Comfortable Work Environment (P.38)	Supply Chain Management (P.63)	Stories of Contribution and Growth (P.15) Community Engagement (P.45) Environmental Initiatives at Business Facilities (P.50)

Activities with External Organizations

<p>2009 Joined the Global Compact (United Nations)</p>  <p>This report covers initiatives for addressing the Compact's ten principles for four areas (human rights, labor, the environment, and anti-corruption).</p>	<p>2017 Joined the WBCSD*</p>  <p>*World Business Council for Sustainable Development</p> <p>We are participating in projects for sustainable development.</p>	<p>2019 Expressed support of the TCFD* recommendations</p>  <p>*Task Force on Climate-related Financial Disclosures</p> <p>We disclose information in accordance with TCFD recommendations. For more details, see the Climate Risks and Opportunities (Response to TCFD) page.</p>
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Our Goals

Yokogawa pursues three goals to fulfill our responsibility to the Earth's future and the people of the future.

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President and CEO

Message from the President

Making a greater contribution to society and showing the way forward for growth

Rising customer and market expectations for the achievement of sustainability

In May 2021, we announced a revision to our long-term business framework and a newly formulated mid-term business plan, Accelerate Growth 2023 (AG2023). That was over one year ago, and since then we have seen rapid changes in sustainability trends. At the COP26 conference, which was held from October 31 to November 13, 2021 in Glasgow, Scotland, an agreement was reached on an official global target that would limit the temperature increase to no more than 1.5°C above pre-industrial levels. This 1.5°C goal is even more ambitious than the 2°C goal of the 2015 Paris Agreement, and was driven by the escalating impact in recent years of climate change-related flooding, windstorms, and droughts. Measures for dealing with this must be accelerated. Also, due to recent international events and developments such as the COVID-19 pandemic, the world must deal with serious issues such as the difficulty of procuring energy and resources, rising economic disparities, and human rights violations.

Against this backdrop, major changes in customer and investor behavior are underway. For example, as customers seek to reduce greenhouse gas emissions across their supply chains, Yokogawa is being asked to accelerate initiatives that will help to reduce emissions. Likewise, increasing attention is being paid to human rights issues in supply chains. And as the capital markets increasingly push for expanded corporate disclosure of sustainability-related information, we too, a company with business operations around the world, are being asked to take appropriate steps in this direction.

Under these circumstances, we believe it is clear that Yokogawa faces rising expectations. We have 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 consider our *raison d'être* to be the fulfillment of our responsibilities toward a future where humanity lives in harmony with the environment. Based on our "Three goals" for sustainability and our vision for society in the year 2050, our core control business serves a broad range of industries through the energy & sustainability business that is directly linked with net-zero emissions, the life business that is directly linked with well-being, and the materials business that is directly linked with a circular economy. By utilizing the knowledge that we have gained through the automation of customers' plants and our expertise in AI, the cloud, robotics, simulation, blockchain, and other digital technologies, we are able to present solutions to issues that concern everyone in our society.

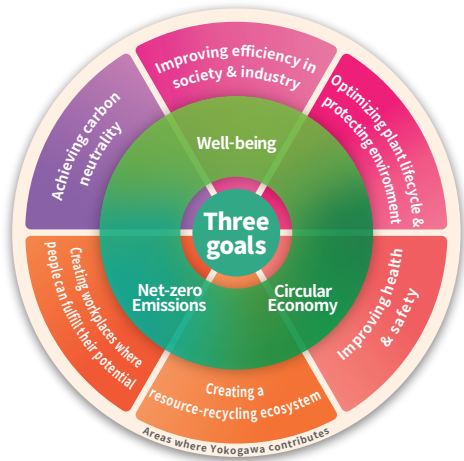


Message from the President

Deepening our commitment to sustainability strategy and clarifying the contributions that we make

In a dramatically changing business environment, Yokogawa has deepened its commitment to sustainability strategy. Based on a vision for society in the year 2050, in 2017 the company set its “Three goals” for sustainability. And with the AG2023 mid-term business plan that was formulated in 2021, priority issues for achieving the Three goals and six contribution areas were defined. In 2022, a newly established Sustainability Committee conducted a materiality analysis, as part of which it reviewed the priority issues and six contribution areas.

Yokogawa aims to expand its contributions on the societal and environmental fronts, and has defined this and the expansion of its business as matters of material significance. This materiality analysis covers all of our business activities. For each of the six contribution areas, we have summarized through a number of contribution and growth stories in this report what types of social issues must be addressed, how Yokogawa will address them, and what value is created. For example, in achieving carbon neutrality, which is one of the contribution areas, we have expressed our intent to accelerate the company’s growth by utilizing our various capabilities to facilitate the transportation, storage, and further utilization of renewable energy. To accelerate initiatives for the creation of value, we plan to prepare additional stories, supplementing those prepared earlier this fiscal year.



Three goals and six contribution areas

Six contribution areas	Priority issues
Achieving carbon neutrality	Reducing GHG emissions and enabling the transition to affordable, reliable, and sustainable forms of energy
Improving efficiency in society & industry	Optimizing production, enabling autonomy, and facilitating the efficient use of resources and energy through DX
Optimizing plant lifecycle & protecting environment	Supporting both the long-term optimal operation of plant assets and the reduction of their environmental footprint
Improving health & safety	Promoting life-related innovation and improving safety in plants and communities
Creating a resource-recycling ecosystem	Fostering the development of the bioeconomy and a circular economy
Creating workplaces where people can fulfill their potential	Establishing an equal opportunity workplace where employees can be treated with dignity and fulfill their potential

Accelerating the improvement of management from the ESG perspective

To make social and environmental contributions and achieve growth, it is important to improve management from the environment, society, and governance (ESG) perspective. Under the AG2023 plan, we are making various efforts to promote ESG management, and this includes the aforementioned establishment of a Sustainability Committee.

As previously stated, the main themes for the first meeting of the Sustainability Committee were materiality analysis and the contribution and growth stories. Attended by all executive officers and chaired by myself, this meeting was a venue for active discussion. In addition to the above-stated themes, internal carbon pricing, the management of human capital, and the disclosure of non-financial information were discussed. By giving equal consideration to sustainability strategy and business strategy, we will be able to discuss sustainability within the context of our business activities. Also, by creating opportunities for the relevant officers to meet and discuss ESG issues, we will be able to respond appropriately to human rights and supply chain risks that often concern entire organizations.

For the management of human capital, we launched the Global HR Transformation Project. This is a response to issues with the visualization of the quality and quantity of human resources, and the appropriate placement thereof. We will lay a foundation for appropriate placement by integrating personnel systems, processes, and HR databases. Also, to reduce greenhouse gas (GHG) emissions, we have set reduction targets that satisfy the requirements of the SBT* initiatives for Scope 3, Scope 2, and Scope 1 emissions, and are making efforts toward these targets. For Scopes 1 and 2, we have made a plan to reduce energy consumption and adopt the use of clean energy. We are steadily promoting reduction activities, utilizing an internal carbon pricing system introduced this fiscal year.

*Science based Targets

The driving force of employee values and behaviors

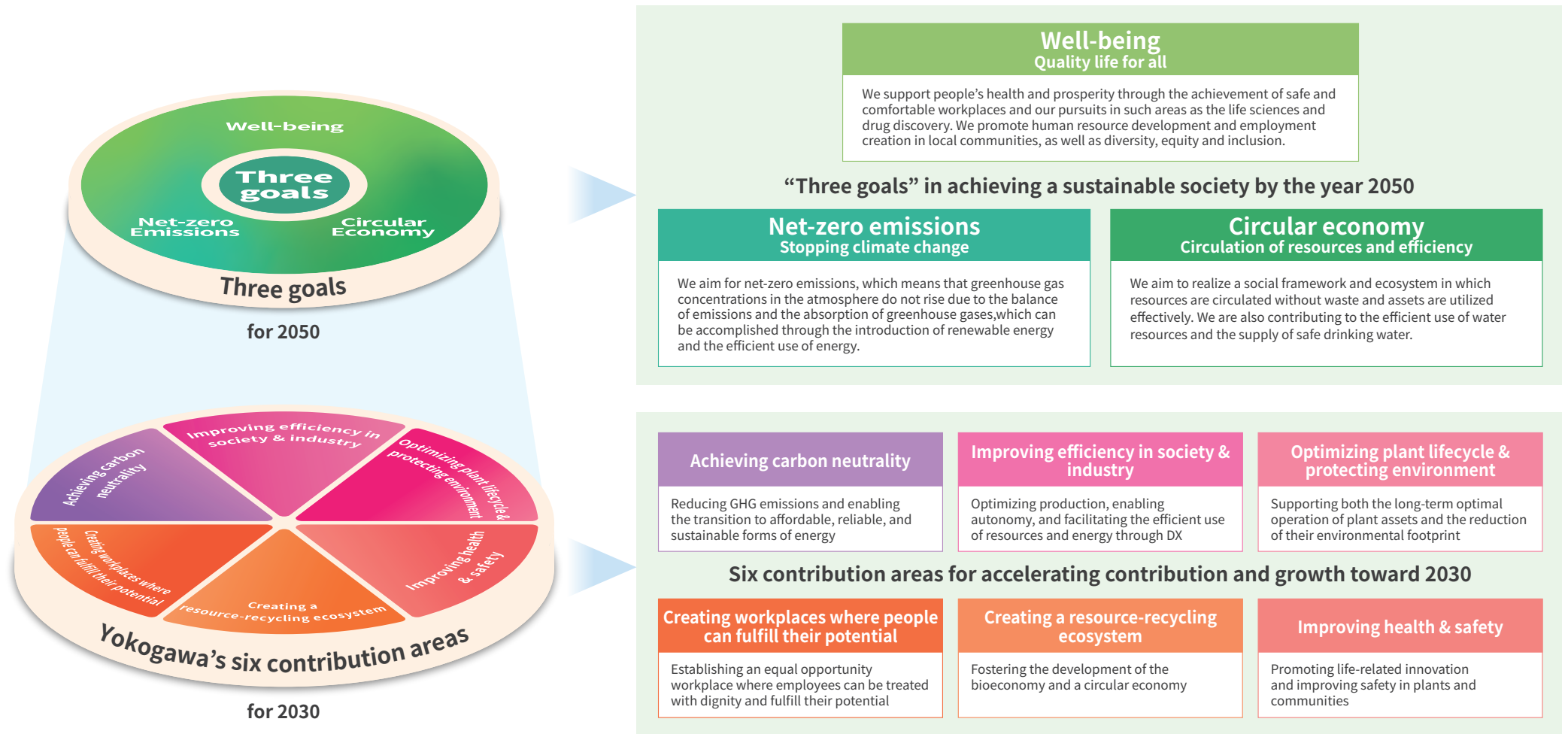
We believe that the achievement of Yokogawa’s Purpose will ultimately be driven by the values and behaviors of our employees. As a response to the COVID-19 pandemic, Yokogawa has put in place systems for remote meetings and telework, and many employees are utilizing these systems and have adopted a new workstyle that is free of time and location constraints. While these changes have been significant, the importance of connections between people has received a renewed emphasis. We have been using employee engagement scores as an indicator to measure interpersonal connections. We will continue to focus on facilitating communication between employees, and will invest in the education of employees and improvement of the work environment. Our employees have also started various bottom-up efforts, and I am working to support them.

With a united workforce as the base for our activities, we will stay mindful of the importance of maintaining close connections with stakeholders such as our customers, investors, and business partners as we take the steps needed to spur growth.



Sustainability Goals “Three goals” and Six Contribution Areas

In 2017, following the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement in 2015, we formulated the “Three goals” sustainability goals for the society we want to see by 2050. In addition, we conducted a materiality analysis for clarifying priority issues toward achieving the Three goals and business growth. Based on the results, we identified the six contribution areas.





Setting Contribution Areas Based on Materiality Analysis

Yokogawa is having a major positive impact on society and the environment by resolving the challenges of customers in the energy & sustainability, materials, and life areas. Expanding Yokogawa’s contributions to society and the environment is closely connected to increasing Yokogawa’s corporate value. We defined “materiality” as importance for both “social and environmental impact” and “impact on the company’s value creation and business model.” In AG2023 formulated in 2021, based on surveys to persons connected to each business area, we selected issues that are highly important and to be resolved by the company (priority issues) and themes of contribution (contribution areas). Furthermore, in July 2022, we conducted a materiality analysis at the Sustainability Committee and confirmed that the priority issues and the contribution areas would not need to be changed from the time AG2023 was established.

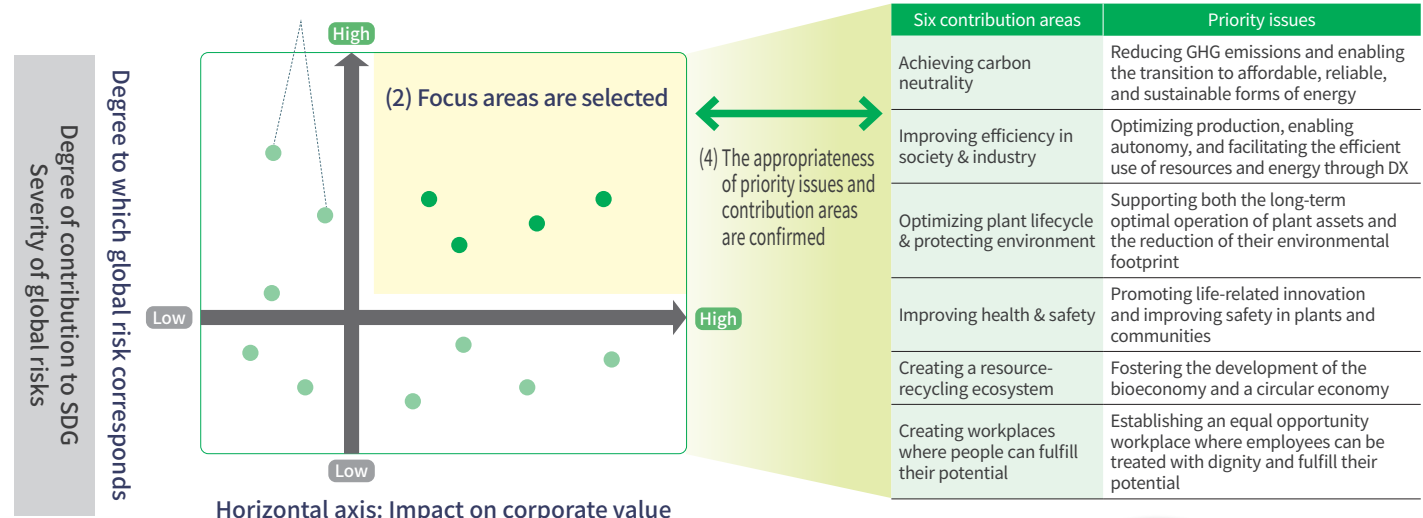
Process of Materiality Analysis

- Conducted analysis covering all business activities which aimed at creating corporate value (and preventing damage), with items related to business opportunities and management respectively.
 - Business opportunities: Theme for accelerating contributions and growth through business areas such as energy & sustainability, materials, life, and measuring instruments (for example, support for renewable energy generation, specialty chemicals, biochemicals, and life science)
 - Management: Theme based on ESG requests from society and for a foundation supporting business (for example, GHG reduction, respect for human rights, DE&I, etc.)
- Evaluated the materiality of individual items from two aspects; social and environmental impact (vertical axis) and impact on corporate value creation and business model (horizontal axis). Then we selected focus areas.
- Reviewed the appropriateness and completeness of focus areas from the perspective of stakeholders.
- Confirmed the appropriateness of the issues to be solved (priority issues) and themes of contribution (contribution areas) based on the selected focus areas.

(1) Items related to “business opportunities” and “management” are covered in the analysis

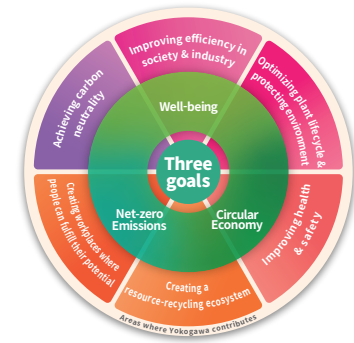


(3) The appropriateness and completeness are reviewed from the perspective of stakeholders



Horizontal axis: Impact on corporate value creation and the business model

Mid-term revenue projection and contribution to revenue growth
Results of the ESG assessment



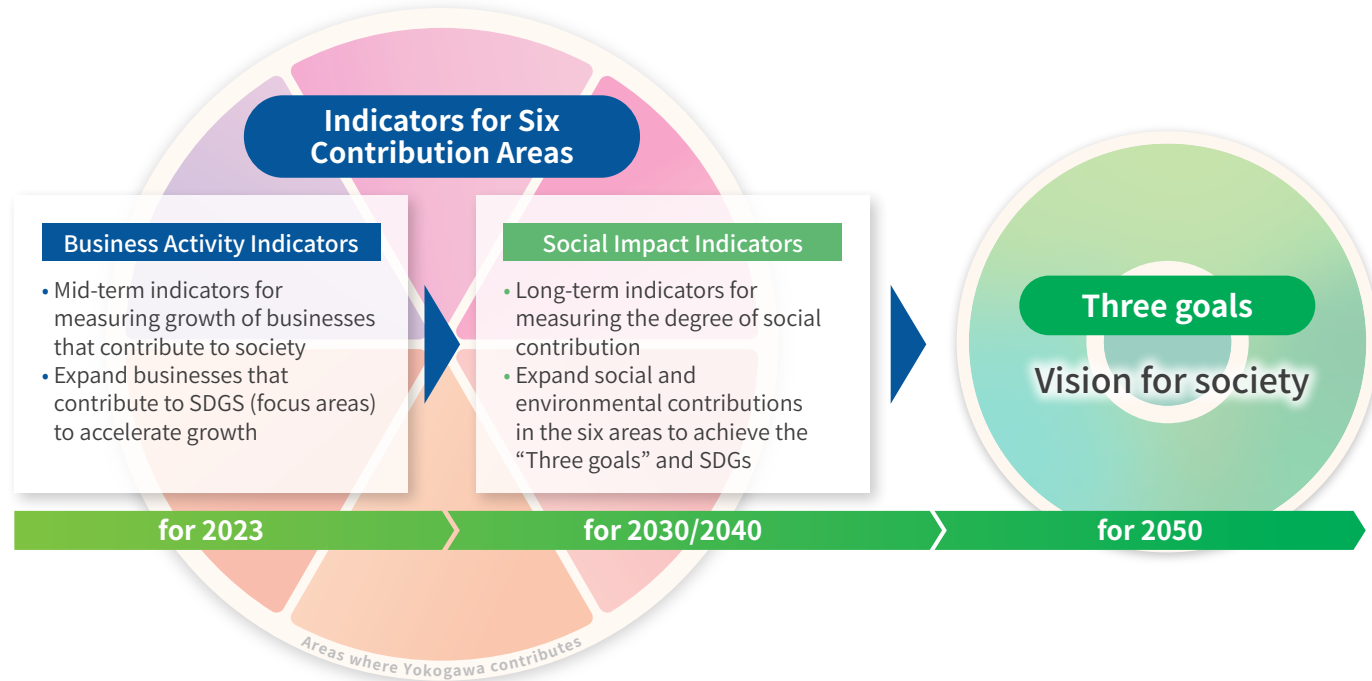
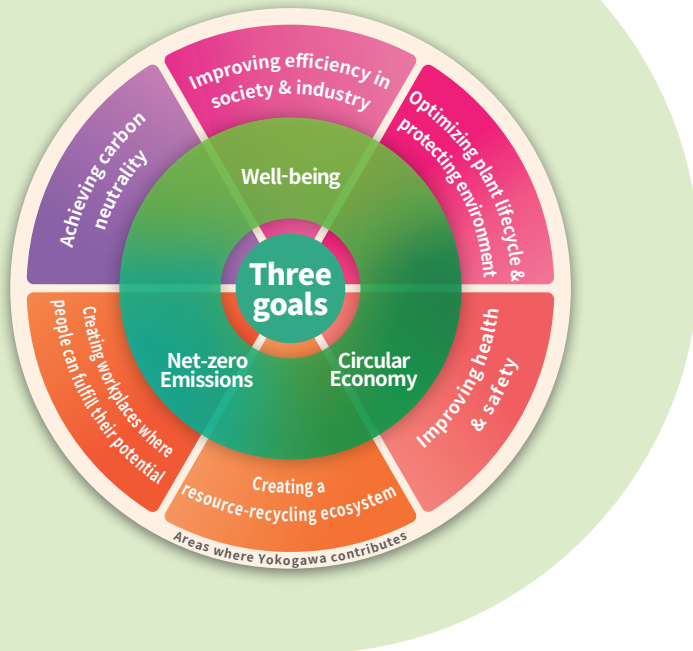


Sustainability Indicators and Targets

Yokogawa has formulated the sustainability goals “Three goals” for the society we want to see by 2050. In addition, we have established long-term indicators for measuring the degree of social contribution (Social Impact Indicators) and mid-term indicators for measuring growth of businesses that contribute to society under the AG2023 (Business Activity Indicators).

We aim to achieve the goals for the Social Impact Indicators by taking actions in line with the Business Activity Indicators. The Business Activity Indicators have been set for focus areas selected in the process of materiality analysis. The director-level persons in charge of each business incorporate activities to achieve the goal into the members of the organization within the Group. Through the PDCA cycle for these indicators, we will accelerate contribution and growth.







Sustainability Goals “Three goals” and Six Contribution Areas





Social Impact Indicators

We have set indexes and goals for FY2030 in the six contribution areas from the viewpoint of social impacts. We are steadily progressing toward the achievement of the goals.

Six contribution areas	Indicators	FY2030 (FY2040) targets	FY2021 results	Progress
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)	330 million t-CO ₂ (including 220 million t-CO ₂ from renewable energy)	Mainly contributions to wind power generation greatly increased.
	GHG emissions (Scope1,2) (base year FY19)	50% reduction by FY30 100% reduction by FY40	10.5% reduction	Procurement of renewable energy increased.
	GHG emissions (Scope3) (base year FY19)	30% reduction	12.7% reduction	Emissions were controlled due to a reduction in the sales volume of hardware products resulting from the impact of COVID-19.
Improving efficiency in society & industry 	Economic value created by improving customer productivity efficiency	2 trillion yen	160 billion yen	We are expanding the production and energy efficiency businesses.
Optimizing plant lifecycle & protecting environment 	Number of plants/factories where Yokogawa has contributed to sustainable operations	20,000 plants	5,322 plants	We are contributing to sustainable operations with life cycle support.
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	We are expanding the water environment solution business overseas.
Creating a resourcerecycling ecosystem 	Status of the new businesses launched that contribute to the resource recycling system	Establishment of two or more new resource recycling system business	We are developing resource recycling systems. Among such efforts is the biomass materials business of Yokogawa Bio Frontier Inc.	
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%	All categories improved by taking measures based on the survey results.
	Achievements in human resource development and capacity development for transformation	Advancing employee's future skill set	We are developing human resources leading to business growth. For example, we are developing DX human resources.	
	Achievement level of diversity and inclusion	Proportion of women in managerial positions 20% Enhanced diversity at senior decision-making levels	12.6% We are considering defining diversity needed for business growth and setting targets.	We are striving to increase the rate, considering local conditions.

*1. Emissions from purchased products/services (Category1) and emissions from use of sold products (Category11)

*2. Employee's future skill set: Skills to play active role in new businesses and new areas



Business Activity Indicators

Regarding the business activities that contribute to the achievement of the social impact indicators, we have set indicators and targets for 2023. The focus areas have been partially changed from the previous fiscal year as a result of the aforementioned materiality analysis.

■ Energy & Sustainability
■ Materials
■ Life

◆ Measuring instrument
★ New businesses and other
◎ Foundation for Business

Contribution area	Focus area	Business Segment	Indicator	FY2023 target	FY2021 results
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, 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 (ERP, 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
	Supporting reduction of environmental footprint of the plant (within Yokogawa) Reduction of Yokogawa's environmental footprint (water, biodiversity)	◎	Number of equipment maintenance management system contract licenses	8,500 licenses	7,360 licenses
			Order intake growth rate of process analyzer (base year FY20)	1.3 times	1.1 times
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	1times
	Supporting lifeline, water and sewage businesses	■ ■	Number of solutions provided for water environment improvement (excluding Japan)	90 solutions	87solutions
(within Yokogawa) Occupational health and safety of workers at Yokogawa, respect for human rights	◎	ISO45001 certification acquisition record	Principal locations certified (12 companies)	Principal locations certified (9 companies)	
Creating a resourcerecycling ecosystem	Contributing to specialty 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 (YHQ)
	(within Yokogawa) Promotion of diversity, equity & inclusion	◎	Female manager ratio	12.5%	12.60%
			Employment rate of disabled persons (Japan)	2.5%	2.46%

* Emissions from purchased products/services (Category1) and emissions from use of sold products (Category11)



Our Stories

Increasing Yokogawa’s contributions to society and the environment is closely connected to increasing Yokogawa’s corporate value. This chapter introduces stories of contribution and growth in the six contribution areas. Examples of our latest initiatives are also included.

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16 1. Achieving Carbon Neutrality

- 16 Stories of growing our businesses and contributing to society
- 18 Inter-industry collaboration study project for the realization of a carbon-neutral industrial complex
- 19 Contribution to the development of geothermal power generation in the Republic of Kenya
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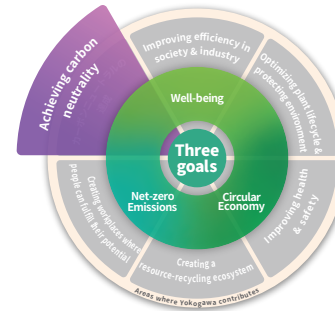
[Response to TCFD](#)



1. Achieving Carbon Neutrality

Yokogawa contributes to reducing GHG emissions and shifting to affordable, reliable, and sustainable energy sources. In the AG2023 plan, Yokogawa sees initiatives of “Supporting power generation by renewable energy” “Supporting distribution, storage, and utilization of renewable energy” and “(within Yokogawa) GHG reduction at Yokogawa sites and in supply chain” as focus areas with the aim of creating value through solving social issues.

This page outlines stories of contribution and growth for “Supporting power generation by renewable energy”



Focus Areas of AG2023

Supporting power generation by renewable energy

Supporting distribution, storage, and utilization of renewable energy

(within Yokogawa) GHG reduction at Yokogawa sites and in supply chain

Stories of growing our businesses and contributing to society

■ Supporting power generation by renewable energy



Why

Social issues to face

Fossil fuel-derived power generation such as coal-fired power generates greenhouse gases that cause global warming. There is a demand for large-scale introduction of renewable energy power generation toward the realization of a carbon-free society, but the stable production and supply of energy are issues, because solar power generation and wind power generation are affected by natural conditions such as hours of sunlight and wind power.

How

Approach

We will expand our contribution to social issues by further strengthening the following three points while combining the “ability to connect,” a strength of Yokogawa, with the expertise of the companies we have acquired, including PXiSE Energy Solutions, LLC and Dublix Technology ApS.

- Improve the operational efficiency and the operating rates by optimizing renewable energy facilities.
 - Understand the condition of equipment and implement preventive and predictive maintenance based on the condition of equipment.
 - A 24 hours a day, 365 days a year monitoring service by experts to protect equipment from the threat of cyber-attacks and network abnormalities.
- High-speed control is required as a technical element to take measures above. In addition, by integrating the conventional power grid with multiple renewable energy facilities distributed over a wider area, we will optimize the overall system.

Impact

Value created

Impact on Yokogawa’s business growth

In the AG2023 plan, we will expand our lineup of products and solutions for renewable energy at an early stage and focus on expanding our customer base.

Impact on society and the environment created through customers

We will contribute to the spread of renewable energy power generation. High-speed control of the grid will maximize the efficiency and productivity of renewable energy generation facilities. It will allow us to integrate the conventional power grid and multiple distributed energy resources, thereby achieving system-wide optimization which will make it possible to produce and supply energy in a stable manner.

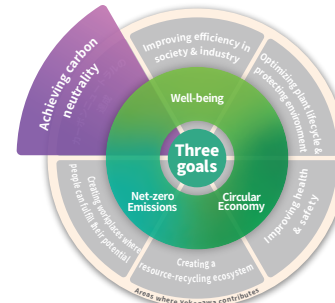
KPI

CO2 emissions control amount through customers (accum. from FY2018) (FY2021 Result) **330 million t-CO2** / (FY2023 Target) **500 million t-CO2**



1. Achieving Carbon Neutrality

This page outlines stories of contribution and growth for “Supporting distribution, storage, and utilization of renewable energy”



Focus Areas of AG2023

Supporting power generation by renewable energy

Supporting distribution, storage, and utilization of renewable energy

(within Yokogawa) GHG reduction at Yokogawa sites and in supply chain

Stories of growing our businesses and contributing to society

■ Supporting distribution, storage, and utilization of renewable energy



Why

Social issues to face

As global warming becomes reality due to greenhouse gases generated by energy use, mainly fossil fuels, the movement to switch energy sources is progressing rapidly on a global scale with the aim of achieving carbon neutrality and decarbonization. Among these efforts, progressing in practical use is renewable energy power generation using wind and solar power that does not generate greenhouse gases. There is, however, the need to reduce power costs by improving power generation efficiency and overcome the issue of supplying power in a stable manner.

How

Approach

Renewable energy generation, especially energy generated by solar and wind power, is supplied to the power grid through a power conversion device called a power conditioning system. Power conditioning systems supply the generated energy to the power grid after making adjustments called grid connections. Power conditioning systems are required to both ensure grid connection quality and improve conversion efficiency, but from the perspective of decarbonization, improving conversion efficiency is extremely important. Yokogawa’s power analyzer technology can accurately measure wideband power and conversion loss of power converters using the latest switching power devices, and is widely used in technology development and production line inspections by renewable energy companies.

Impact

Value created

Impact on Yokogawa’s business growth

Yokogawa is a leading company in efficiency measurement of power converters using switching devices. In the AG2023 plan, we will first expand our contribution to power generation equipment manufacturers to determine their compliance with power quality standards while focusing on conversion efficiency measurement of power conditioning systems, our specialty, and increase sales. In addition, by applying high-speed power transient measurement technology, we will explore contributions to power operators and power equipment manufacturers for renewable energy power generation.

Impact on society and the environment created through customers

Improvements in the conversion efficiency of renewable energy power generation will reduce power costs and accelerate the replacement of thermal power generated with fossil fuels. As a mother technology of the industry, this will reduce GHG emissions (Scope 2) caused by the use of electrical products around the world. We will contribute to the achievement of a power supply society that uses only renewable energy with the aim of achieving global net-zero emissions by 2050.

KPIs

Sales growth rate of measurement instrument to renewable energy customers (base year FY2020)	(FY2021 Performance) 1.7 times	(FY2023 Target) 2.2 times
Growth rate of number of units shipped of battery electrode thickness gauge (base year FY2020)	(FY2021 Performance) 1.6 times	(FY2023 Target) 1.7 times

Initiatives Toward “Achieving Carbon Neutrality”

case
1

Inter-industry collaboration study project for the realization of a carbon-neutral industrial complex

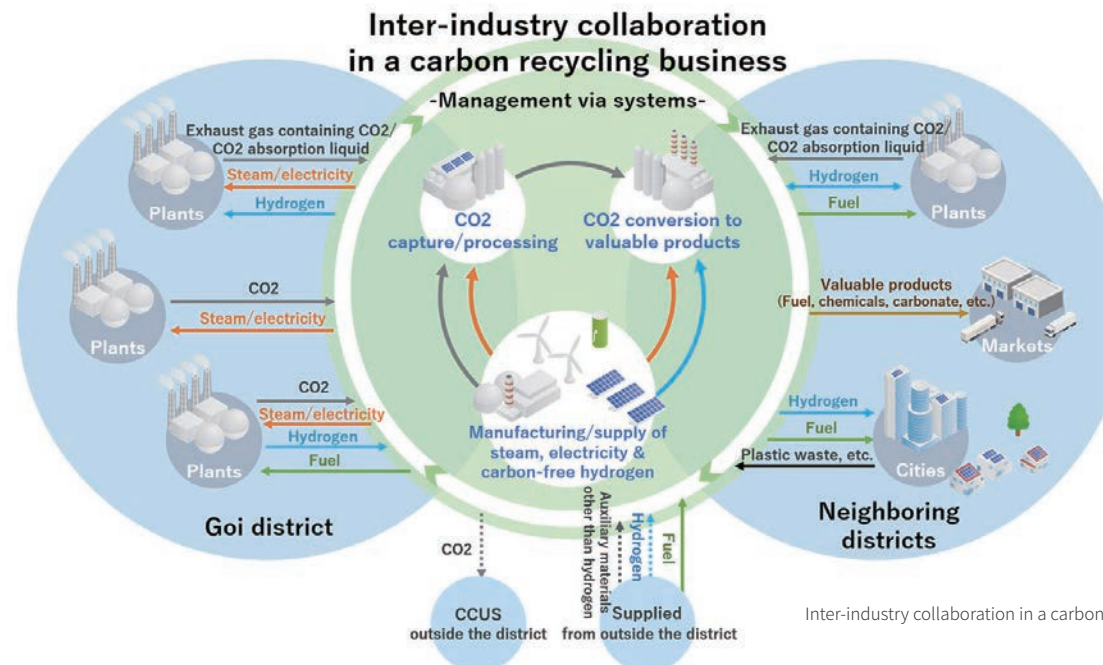
Yokogawa has begun work on an inter-industry collaborative study project for the achievement of carbon neutrality at an industrial complex in the Goi district of Ichihara City in Chiba Prefecture. Multiple companies in the district are members of the project. The study will examine the feasibility for collaboration by multiple companies in the carbon recycling business and will involve surveys on the current status of the energy balances of their industrial plants and the amount of carbon dioxide (CO₂) emitted by them. The goal for this project is to lay the groundwork for a business that will aim to achieve net-zero CO₂ emissions for the entire industrial complex by 2050.

This study was commissioned by the New Energy and Industrial Technology Development Organization (NEDO) in February 2021. We contacted and requested the cooperation of companies in the Goi district and its neighboring districts that operate plants with high CO₂ emissions, and also conducted a survey of technologies and other subjects, and began

collaborating with these companies to examine the feasibility of a carbon recycling business, focusing on the aspects of the effective use of materials and energy and CO₂ capture and utilization.

We leverage the Yokogawa Group’s expertise such as the knowledge of manufacturing processes that has been cultivated through work for many different types of plants both in Japan and overseas, expertise in the improvement of processes and energy efficiency for single sites as well as the integration of multiple industrial sectors’ sites, regional energy management systems that optimize control based on supply and demand, and simulation technology that supports the execution of optimal production planning.

Yokogawa contributes to the achievement of a carbon-neutral society by cooperating with partners across multiple industries.



Inter-industry collaboration in a carbon recycling business



Initiatives Toward “Achieving Carbon Neutrality”

case
2

Contribution to the development of geothermal power generation in the Republic of Kenya

Focus area Supporting power generation by renewable energy

In the Republic of Kenya, power consumption is increasing with population growth and economic development. Securing a stable power supply has become an issue. The Republic of Kenya has one of the world’s largest geothermal resources, and we are promoting development focusing on geothermal power generation as a stable power source with extremely low greenhouse gas emissions.

Yokogawa introduced an IoT system that remotely and centrally manages performance such as power generation output and power generation efficiency of multiple power plants of the Olkaria Geothermal Complex of Kenya Electricity Generating Company PLC (KenGen). The Olkaria Geothermal Complex has the largest geothermal power generation capacity in Africa. The farthest power plant from the control office is about 20 km away by road, and until now, the operation of scattered power plants was managed individually, and KenGen had difficulty in effectively managing operation of those plants from a bird’s-eye view.

Yokogawa built an IoT system that can perform integrated management from the remote

control office by integrating data from distributed geothermal power plants. The system uses mobile communication networks, etc. to integrate data into a single platform.

We also provided training for using the system. This system utilizes Exapilot, an operation efficiency improvement support package and plant information management systems such as Exaquantum. It monitors the performance of each power generation unit, analyzes it when the power generation efficiency deteriorates, and centrally manage the maintenance status of related equipment. Automatic analysis enables appropriate maintenance, maximizes power generation efficiency, and contributes to the realization of a stable power supply.

Renewable energy is increasingly important for securing a stable supply of electricity while reducing greenhouse gas emissions. Yokogawa will leverage digital transformation (DX) to contribute to the development of renewable energy, including geothermal power generation.



Olkaria II Power Station

case
3

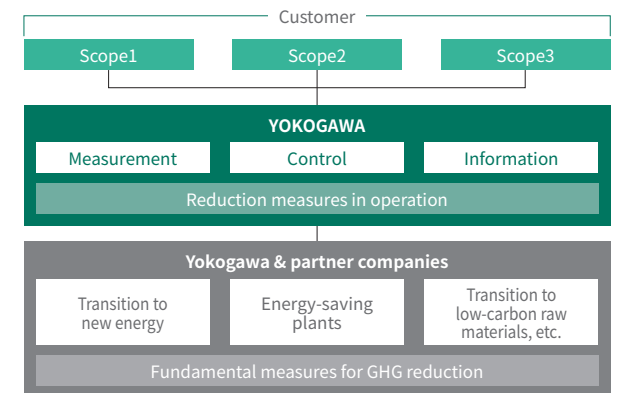
Carbon Management Solutions

Achieving carbon neutrality, a universal goal agreed upon as part of the Paris Agreement in 2015, is becoming a significant management issue related to the very existence of the company, especially in industry. In this context, demand for disclosure of the amount of GHG (Greenhouse Gas) emissions, including in supply chains, are increasing, and there are an increasing number of cases where companies request suppliers to disclose emissions data.

By visualizing GHG emissions in customers’ entire supply chains, from raw material procurement to disposal and recycling, based on actual values and process models, Yokogawa is striving to commercialize “carbon management solutions” that contribute to the reduction of emissions. With the catchphrase of “Co-achieving zero carbon,” we are focusing both on “reduction measures in operation,” such as plant data integration and optimal control of energy, and “drastic reduction measures,” such as switching procurement energy and updating to energy-saving equipment, in order to support GHG reduction throughout supply chains. Currently, we are conducting field tests in cooperation with multiple customers and partner companies, mainly in the chemical industry to accelerate

efforts toward commercialization.

In order to achieve carbon neutrality, Yokogawa will utilize its knowledge of “measurement,” “control,” and “information” to tackle issues and collaborate with customers to limit GHG emissions and shift to inexpensive, reliable, and sustainable energy using our original technology and know-how.



Overview of Carbon Management Solutions (simplified diagram)

[For more details, see the Carbon Management Solutions website](#)



2. Improving Efficiency in Society & Industry

Yokogawa contributes to optimization, enabling autonomy, and facilitating the efficient use of resources and energy through DX. In the AG2023 plan, Yokogawa sees initiatives of “Smart manufacturing, consultation, ERP, MES, LIMS, EQMS,” “Value chain optimization for pharmaceutical and food customers (ERP, MES, LIMS, EQMS),” and “Optimization of internal operations” as focus areas with the aim of creating value through solving social issues.

This page outlines stories of contribution and growth for “Value chain optimization for pharmaceutical and food customers (ERP, MES, LIMS, EQMS).”



Focus Areas of AG2023

Smart manufacturing, consultation, ERP, MES, EQMS

Value chain optimization for pharmaceutical and food customers (ERP, MES, LIMS, EQMS)

(within Yokogawa) Operational optimization

Stories of growing our businesses and contributing to society

■ Value chain optimization for pharmaceutical and food customers (ERP, MES, LIMS, EQMS)



Why

Social issues to face

Pharmaceutical manufacturing plants are being required to control R&D costs for drug discovery and to improve the efficiency and sophistication of operations, while facing issues such as quality, compliance with increasingly sophisticated regulatory requirements, stable supply, and globalization. In addition, efforts are accelerating to realize smart factories by analyzing and utilizing various data through digital transformation (DX) with IoT/AI.

Food manufacturing plants are required to reduce costs while further improving quality and safety. There are a wide variety of issues, such as the shift to high-mix, low-volume production, the decrease in the working population, dealing with the passing down of skills, and efforts to improve new lifestyles and working environments. In addition, efforts to realize smart factories for factory automation and labor saving, such as the use of IT technology and robotics, are accelerating.

How

Approach

Leveraging its strengths in measurement and control technologies, Yokogawa has introduced production control systems, various sensors, field instruments, and other equipment closely related to the production process. Yokogawa has a delivery track record of more than 1,000 products and solutions such as MES, LIMS, QMS, and ERP, which can collect and analyze vast amounts of information from production sites. We contribute to high quality, safety, productivity improvement, and stable supply by providing one-stop information solutions that support a wide variety of people from the field to senior executives. In the future, we will make use of these experiences and technologies to contribute to the realization of autonomous operations and smart factories in which equipment and devices learn and adapt themselves. In addition, we have knowledge and experience in the life science field, and we support productivity improvement and optimization throughout the value chain, from basic and applied research and development to production, logistics, and services.

Impact

Value created

Impact on Yokogawa’s business growth

We will strengthen our engineering system in Japan and promote human resource development outside Japan for solution business proposals. In the AG2023 plan, we will expand the experience and know-how in MES, LIMS, EQMS, ERP, and so on that we cultivated in Japan to overseas markets. We will also support the optimization of the value chain in the pharmaceutical and food industries, and further evolve MES, with the aim of increasing sales.

Impact on society and the environment created through customers

In the pharmaceutical industry, technology transfer of research and development data, scaling up, and early production start-up have been realized, shortening the lead time across the entire value chain from new drug application to supply. As a result, providing safe and secure pharmaceuticals to more people will become viable. In the food industry, highly efficient automated operations based on demand forecasts will become possible, optimizing the value chain from the primary industry to the consumer, thereby contributing to the stable supply of safe and secure food.

KPI

Order intake growth rate of pharmaceutical and food value chain optimization business (base year FY2020) (FY2021 Performance) **1 times** / (FY2023 Target) **1.3 times**



Initiatives Toward “Improving Efficiency in Society & Industry”

case
1

Yokogawa becomes the world’s first company to have a chemical plant operate autonomously for 35 consecutive days using AI

Focus area Smart manufacturing, consultation, ERP, MES, EMS

Yokogawa and ENEOS Materials Corporation (formerly JSR Corporation elastomer business unit) succeeded in autonomously controlling a chemical plant using reinforcement learning, an AI technology. This is the first time in the world that a chemical plant in operation has successfully achieved autonomous control at a practical level of continuous control for 35 consecutive days.

Through this test, Yokogawa 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 judgements of plant personnel. The initiative described here was selected as one of the 2020 Projects for the Promotion of Advanced Industrial Safety subsidy programs 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 doing so, it stabilized quality, achieved high yield*1, and saved energy. Utilization of waste heat is an effective means of saving energy, but the amount of heat generated by waste heat is highly unstable and affected by factors such as plant operating conditions and weather conditions, so automating production processes that use waste heat has been very difficult. Autonomous control by AI solves this problem and greatly contributes to energy saving.

Given the numerous complex physical and chemical phenomena that impact operations in actual plants, there are many procedures that rely on the know-how of veteran operators for these controls. A very significant challenge has been instituting autonomous control with as little effort as possible while ensuring a high level of safety, and it is hoped that the results of this study will serve as a clue to the solution of this problem. Yokogawa will continue to promote co-creation with various partners in order to support customers’ activities toward the realization of Industrial Autonomy.

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



ENEOS Materials chemical plant (former JSR chemical plant)

case
2

Realization of effective and efficient remote FATs—a success story of ENEOS Corporation’s Mizushima Oil Refinery—

Focus area Optimization of operations

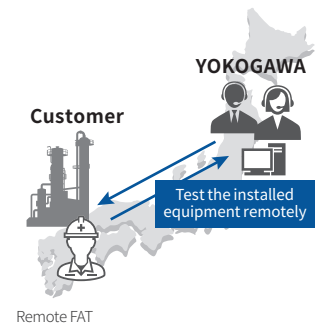
Before delivering control systems such as CENTUM to a customer, we need to perform tests, known as a FAT (Factory Acceptance Test), by using actual equipment to confirm whether the system meets the customer’s functional requirements. FATs used to be conducted face-to-face with the presence of the customer, but the spread of COVID-19 has increased the need for remote FATs.

ENEOS Corporation’s Mizushima Oil Refinery is a modern integrated oil refinery with the largest crude oil processing capacity in Japan. While operating safely and efficiently, the refinery is taking active measures to reduce environmental impact. Many Yokogawa products, including CENTUM, have been installed at the refinery to contribute to its operations.

FATs usually take long time for a renewal project of control systems of large-scale plants. After the spread of COVID-19, remote FATs were performed using web cameras and web communication tools, but for projects that require large-scale and long-term FATs such as the Mizushima Oil Refinery, conventional remote FATs could not be performed due to communication performance issues.

Yokogawa worked to optimize FAT operations through digital transformation (DX) in order to improve customer operational efficiency and ensure safety. Specifically, regarding the issue of communication performance, we were able to use wireless LTE connections with the cooperation of the Mizushima Oil Refinery. This allowed us to establish high-performance communication that can withstand large-scale and long-term use, and achieved remote FATs with the refinery. After the remote FAT, the customer highly appreciated it, saying, “Even compared to a test on the actual machine, we were able to operate it without feeling out of place.”

Since FY2021, the annual number of remote FATs performed has been increasing. Demand for FATs is forecast to continue to grow. As a partner of our customers, Yokogawa will continue to realize optimal operations by leveraging DX.



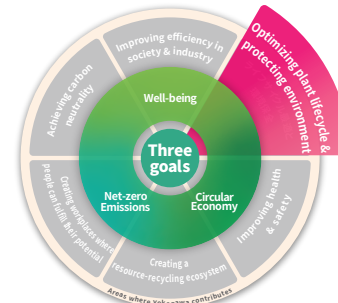


3. Optimizing Plant Lifecycle & Protecting Environment

Yokogawa contributes to supporting both the long-term optimal operation of plant assets and the reduction of their environmental footprint.

In the AG2023 plan, Yokogawa sees initiatives of “Supporting long-term optimal operation solutions of the plant,” “Supporting reduction of environmental footprint of the plant” and “Reduction of Yokogawa’s environmental footprint (water and biodiversity)” as focus areas with the aim of creating value through solving social issues.

This page outlines stories of contribution and growth for “Supporting long-term optimal operation solutions of the plant.”



Focus Areas of AG2023

Supporting long-term optimal operation solutions of the plant

Supporting reduction of environmental footprint of the plant

(within Yokogawa) Reduction of Yokogawa's environmental footprint (water, biodiversity)

Stories of growing our businesses and contributing to society

■ Supporting long-term optimal operation solutions of plants



Why
Social issues to face

Energy and resource depletion is becoming an increasingly serious issue, requiring reductions in energy and resource losses, as well as reducing the risks of losses. To this end, it is also becoming necessary to maximize the use of equipment and maximize the production volume per unit of input resources in plant operations.

How
Approach

Yokogawa's control systems are used by many customers around the world. By providing maintenance services to those customers, we have earned their trust as partners throughout their life cycles. Through further strengthening the following three points, we can contribute to solving the social issues above.

- Optimizing maintenance costs ---- Draft an appropriate maintenance plan taking into consideration the lifespan of each product and parts, and implement preventive maintenance according to the plan
- Maximize facility capacity ---- Understand the condition of plants and implement preventive and predictive maintenance based on the condition of the plants
- Minimize operating costs and risks ---- A 24 hours a day, 365 days a year monitoring service by experts to protect systems from the threat of cyber-attacks and network abnormalities.

In order to achieve these three points, we will undertake the outsourcing of maintenance work of our customers and will provide Managed Service based on condition-based maintenance that are well-balanced with sustainable and safe plant operations.

Impact
Value created

Impact on Yokogawa’s business growth

In the AG2023 plan, we aim to increase sales by increasing the number of life cycle support contracts.

Impact on society and the environment created through customers

We will contribute to environmental conservation through safe operations while maximizing the use of resources we input. In addition, by using existing facilities long-term, we will minimize the use of additional construction resources. Furthermore, we will optimize operating costs and increase asset efficiency.

KPI | Number of life cycle support contracted plants (FY2021 Performance) **5,322 plants** / (FY2023 Target) **6,000 plants**



3. Optimizing Plant Lifecycle & Protecting Environment

case 1 Sushi Sensors' contribution to the transformation of equipment monitoring

Focus area Long-term optimal operation solutions of plants

Against the backdrop of aging equipment and the retirement of veteran employees, there is a need to quickly detect signs of failure and to realize efficient condition-based maintenance according to the condition of equipment. Sushi Sensors are an industrial IoT solution that transforms the way equipment is monitored by online monitoring of a large number of pieces of equipment scattered over a vast area using wireless communication.

A subway operator with multiple routes in a big city has hundreds of huge blowers and exhaust fans in stations and tunnels to take outside air, condition air, and exhaust air. Blowers and exhaust fans play a role in air conditioning and exhaust smoke in the event of a fire, and are essential equipment for maintaining the environment inside subway stations. Yokogawa provided a solution using Sushi Sensors to detect abnormalities in this important equipment at an early stage.

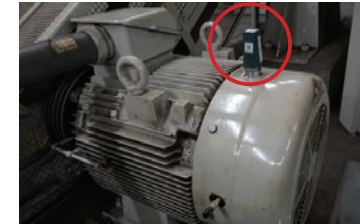
For traditional tests, inspections used to be conducted every three months and special inspections every month, with inspections relying on the so-called five senses, such as touching equipment and listening to sounds. Sushi Sensors, however, visualize the vibration measurements of the equipment through long-term trend monitoring, detect abnormalities early and improve work efficiency. We have received high praise from a customer saying, "Now we can respond quickly if we find an abnormality in important equipment." Sushi

Sensors have been installed only in a limited number of pieces of equipment, but they are planned to be installed in more parts of air conditioning equipment.

Yokogawa will contribute to the long-term optimal operation of customer equipment through the transformation of equipment maintenance with Sushi Sensors.



Sushi Sensor



A Sushi Sensor attached to the blower motor

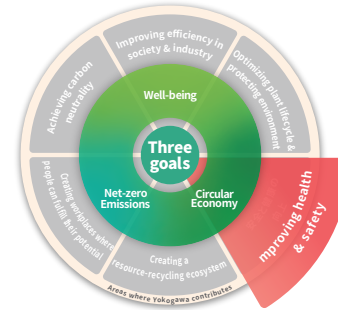


4. Improving Health & Safety

Yokogawa contributes to promoting life-related innovation and improving safety in plants and communities.

In the AG2023 plan, Yokogawa sees initiatives of “Support for the safety of plants and workers,” “Life science,” “Support for lifeline, water and sewage,” and “Occupational health and safety of workers at Yokogawa and respect for human rights” as focus areas with the aim of creating value through solving social issues.

This page outlines stories of contribution and growth for “Life science.”



Focus Areas of AG2023

Supporting safety and security of plant and workers

Life science business

Supporting lifeline, water and sewage businesses

(within Yokogawa) Occupational health and safety of workers at Yokogawa, respect for human rights

Stories of growing our businesses and contributing to society

Life science



Why

Social issues to face

The fields of drug discovery and life science research are becoming more complex and sophisticated. While the development of measurement technology enabled researchers to obtain a large amount of diverse data, data management and analysis have become issues. In addition, there is a need for collaborative research across organizations, data sharing, and efficient research styles that do not depend on location.

How

Approach

Yokogawa has over 25 years of experience in the life science business, holds nearly 90 confocal technology patents, and has delivered over 3,600 CSU confocal scanner units. In addition, our unique microscope installed in the drug discovery support systems CV8000 and CQ1 boast the world-class imaging speed and image resolution. In recent years, we added a single cell analyzer and an advanced control bioreactor system to our product portfolio. With these products, Yokogawa supports customers at each stage from basic research and application to practical application.

In the future, we will promote collaboration with partners and expand our business into fields such as contract services for experiments and equipment management, and virtual laboratories.

Impact

Value created

Impact on Yokogawa’s business growth

In the AG2023 plan, we will expand the functions of existing products and develop new products to expand our business outside Japan, mainly in North America, Europe and Asia. We will also consider M&A and alliances with other companies with the aim of increasing sales.

Impact on society and the environment created through customers

Yokogawa provides products and services to researchers around the world who are at the forefront of COVID-19 research. We contribute to the observation of viral infection processes and self-defense mechanisms of human cells, research on viruses and genes, and the discovery and development of effective drugs. In addition, we will support the development of an environment where researchers can concentrate on their research and the revitalization of the researcher community.

KPI | Sales growth rate of drug discovery development support products (base year FY2020) (FY2021 Performance) **1 times** / (FY2023 Target) **2.5 times**



Initiatives Toward “Improving Health & Safety”

case
1

Subcellular sampling system’s contribution to drug discovery research and regenerative medicine

Focus area [Life science](#)

A cell, the smallest unit that makes up an organism, has its own individuality. There is, therefore, growing interest in single-cell analysis that captures individual cells rather than groups of cells. In recent years, there is also a need for analysis of specific components within cells, not just single cells. In the analysis of subcellular components, cells were mainly collected in a manner that crushes them, which prevented sampling of individual cells, and there were many components that cannot be recovered. In addition, there was also the issue of losing positional and morphological information of cells.

Yokogawa developed the Single Cellome™ System, “SS2000,” which automatically and accurately performs the sampling process of specific cells and subcellular components by capturing high-definition images of cells in culture with a confocal microscope.

SS2000 Features

1. Live cell imaging using confocal microscopy

This technology is based on the technology used in live-cell imaging products developed by Yokogawa. It enables high-speed, high-resolution 3D imaging by using our unique

confocal microscope technology. Samples can be taken from targeted cells under a confocal microscope in an incubator environment.

2. Subcellular component sampling

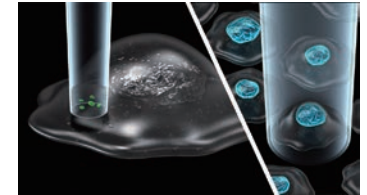
Intracellular components can be sampled at a single-cell level. This includes intracellular components that are difficult to sample by biochemical methods, such as organelles without lipid membranes.

3. Maintaining positional and morphological information of cells

SS2000 can sample only the target cells while maintaining the culture state without dispersing the cells in liquid, which makes it possible to sample cells while maintaining positional and morphological information.

Elucidating the characteristics and functions of cells and studying the reasons and mechanisms of cell degeneration is extremely effective in investigating the causes of diseases, preventing them, and verifying pharmacology, and is indispensable for drug discovery research and the development of regenerative medicine.

Yokogawa will continue to contribute to cutting-edge life science research through single-cell analysis solutions.



Subcellular sampling

case
2

Contribution to improving the supply of safe water in Senegal

Focus area [Lifeline, water and sewage support](#)

Around 80% of Senegal’s industrial activity takes place in the Dakar region, and the population of the region has been increasing in recent years. Improving the ability to supply safe supply of water that can be used in daily life is an issue. Especially in the center of the Dakar region, about 40% of the water pipes are over 40 years old, and the percentage of water that cannot be collected due to water leaks or theft from water pipes (non-revenue water rate) is about 27%, the highest in Dakar. Along with the development of water sources, there is a need to improve water distribution and capacity, such as reducing water leaks.

Yokogawa received an order from the National Water Company of Senegal to install sensors to collect flowrate and pressure data at around 200 locations in Dakar’s water pipe network and construct a water supply management system that can monitor water supply status on a

real time basis and locate water leaks and other such problems. We will build a water supply management system and a water leakage management system, and conduct efficient operation and human resource development through training on systems and maintenance management methods. This will contribute to a significant reduction in the non-revenue water rate and an increase in the 24-hour water supply rate from the current rate of nearly 70% to 100%.

Yokogawa will continue to improve water pipe networks and access to safe water in emerging and developing countries by leveraging its extensive experience and know-how in the water and sewage field in Japan.



Water supply management system and measuring equipment



5. Creating a Resource-Recycling Ecosystem

Yokogawa contributes to fostering the development of the bioeconomy and a circular economy. In the AG2023 plan, Yokogawa sees initiatives of “Contributing to specialty chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses” as focus areas with the aim of creating value through solving social issues.

This page outlines stories of contribution and growth for “Contributing to specialty chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses.”



Focus Areas of AG2023

Contributing to specialty chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses

Stories of growing our businesses and contributing to society

■ Contributing to specialty chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses



Why
Social issues to face

The chemical industry faces multiple challenges. Among them are the efficient use of energy, recycling, a shift to raw materials with low environmental impact, and new product development through changes in raw materials and manufacturing methods. In the field of functional chemicals, there is a need for new materials such as rechargeable batteries (EV materials, etc.), structural materials, and adhesives. As demand for semiconductors is increasing worldwide due to the high-functionality of CASE and smartphones and the spread of 5G and IoT, the development and stable supply of materials and products with low environmental impact have become issues for society as a whole.

How
Approach

- Strengthen batch solutions: Functional chemicals products are mostly manufactured with the batch method that requires switching production for a wide variety of products, and the process is divided into multiple stages. Strengthening solutions for batch processes will allow us to provide solutions to the entire industry, including small and medium-sized chemical plants, thereby contributing broadly to the chemical industry.
- Deployment and expansion of solutions for improving operations: By analyzing data using Yokogawa’s unique method called Digital Plant Operation Intelligence (DPI), we discover problems with customers and create value by solving them. We have accomplished more than 120 projects in Japan, and we also plan to expand outside Japan.
- Carbon management solutions: The new carbon management solutions that we recently developed visualizes emissions in the entire supply chain, from raw material procurement to disposal and recycling, and reduces GHG emissions from the perspective of optimizing the entire supply chain.

Impact
Value created

Impact on Yokogawa’s business growth

In the AG2023 plan, we will expand the scale of the business to 10 billion yen while focusing on establishing the business foundation.

Impact on society and the environment created through customers

Under the concept of “Co-achieving zero carbon,” we will work with customers to improve storage battery productivity, save energy, reduce environmental impact, and reduce GHG emissions from the entire supply chain. In addition, we will contribute to the achievement of a resource-recycling society by supporting efficient reuse and recycling of functional chemical products.

KPI | Order intake growth rate for specialty & fine chemical industry (base year FY2020) (FY2021 Performance) **1.2 times** / (FY2023 Target) **1.6 times**



Initiatives Toward “Creating a Resource-Recycling Ecosystem”

case 1 Contribution to efforts to solve problems with DPI and workshops —a success story of Osaka Gas Chemicals Co., Ltd.—

Focus area Contributing to functional chemical and biochemical industries, Supporting efficiency improvement of the recycling businesses

Troubles in the manufacturing process will lead to lower production efficiency, higher costs, and heavier operator workload. At manufacturing plants, efforts to achieve improvement are made on a daily basis, but it is a very difficult task to identify the true causes for troubles and eliminate them.

Osaka Gas Chemicals Co., Ltd. is a chemical company that plays an important role in Japan’s leading carbon fiber industry. It had been a long-standing problem for the company that troubles would occur in the heating process, which is part of the carbon fiber manufacturing process with a large number of parameters and frequent changes in operating conditions.

Yokogawa supplied a quality stabilization system, Digital Plant Operation Intelligence (DPI), to help Osaka Gas Chemicals solve the problem. DPI analyzes data accumulated from a customer’s plant centering on 4Ms, which are the basic elements of manufacturing, and monitors them in real time to detect and take countermeasures against quality problems. We took four-step procedures to hold a “hypothesis verification data analysis workshop”

to solve problems through hypothesis planning and verification. The four steps are (1) define the cause of the problem with a hypothesis, (2) analyze data and test hypotheses using DPI, (3) discuss the certainty of analysis results based on process knowledge, and (4) develop a plan for improvement action. The addition of sensors and the measures taken for improvements based on analysis results realized the effects of stabilizing the manufacturing process and maximizing operational efficiency. Customers who participated in the workshop said, “I’m glad we were able to learn how to reduce the occurrence of this problem from happening” and “The data and discussions back up what I had felt as a rule of thumb.”

Yokogawa will combine on-site knowledge and data analysis to help customers solve problems.



Example of a DPI screen

case 2 Internal task force for realizing sustainable product design

Yokogawa has a task force named “I SEE.” We established it to have every employee wonder what sustainable product design really means and find the answer, saying, “I See!” The task force have been considering sustainability in product design.

Yokogawa Electric has been designing products based on lifecycle assessment (LCA) since 1999, and we have a design culture that considers the global environment. We started to consider further guidelines for design and development toward “circular economy” and “net-zero emissions,” which are among Yokogawa’s Three goals, and “creating a resource-recycling ecosystem” and “achieving carbon neutrality,” which are among the six contribution areas.”

What we always keep in mind in these efforts is to contribute to both customers and our business while protecting the global environment. Product design that considers resource recycling, while it may require additional costs, creates new value, such as promoting digitization

to provide the same functionality with fewer resources. We are considering design guidelines to protect the global environment, provide value to customers, and develop ourselves.

Through these activities, we examined the resource recycling of product parts, considered reducing CO2 emissions associated with products, and conducted educational activities for employees. In addition, in order to make it easier for customers to understand, we added 13 products to the LCA data disclosed on our website. We will continue these activities to achieve sustainability in product design.

Consider carbon neutrality in product design

Consider circular economy in product design

Strengthen disclosure of product LCA data

Internal awareness raising, blogs and webinar

FY2021 activities



6. Creating Workplaces Where People Can Fulfill Their Potential

Initiatives for “creating workplaces where people can fulfill their potential”

case 1

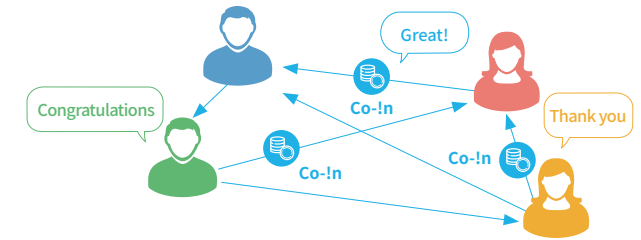
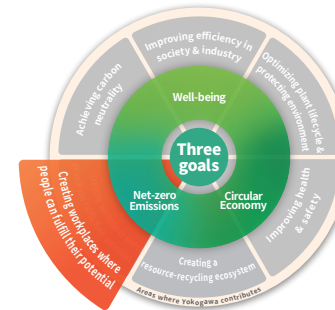
Initiatives to improve employee engagement with Co-!n

Focus area Employee well-being & engagement

Yokogawa has introduced the “Co-!n system” to all Group companies in Japan. The Co-!n system is Yokogawa’s unique system with a function that allows employees to send “thanks and praise” to each other with tokens (internal currency). The system serves all people working at Yokogawa, regardless of their employment status.

We have received comments from employees saying, “It increased my self-esteem,” “I received a token at the beginning of the week, so I got a bright start,” and “The system clarifies contributions and outputs. That is encouraging.” In addition, 92% of the employees who have received tokens say that they were “happy to receive a Co-!n.” These comments show that we have taken the first step in “improving engagement with the Co-!n system.”

The Co-!n system was born as a result of discussions about an evaluation system that would stimulate cross-departmental activities. Based on a proposal by volunteers with a



strong desire to “revitalize the workplace more than ever,” we built a system that utilizes blockchain technology. It is one of the environments where activities that are difficult to recognize can be visualized and recognized. The name “Co-!n” contains the idea that “With Coins (tokens), Co-Innovate while feeling ‘! (fun and excitement).”

The results of a global engagement survey of all Yokogawa Group employees indicate that the “praise” culture is not sufficient, and the connection between employees seemed to be weakening, so we began using the system in October 2021 after a one-year trial. 40,000 messages of “thanks and praise” were sent in the eight months immediately after the launch.

We make a certain amount of donations to organizations working for the SDGs according to the distribution volume of Co-!n. That allows every employee to contribute to the SDGs. While promoting global expansion, we will visualize various experiences of employees with “Co-!n” and further motivate them to take action. Thus, Yokogawa will improve engagement and lead to further sustainable growth.

case 2

SDGs promotion activities with a bottom-up network

Focus area People capability development for change

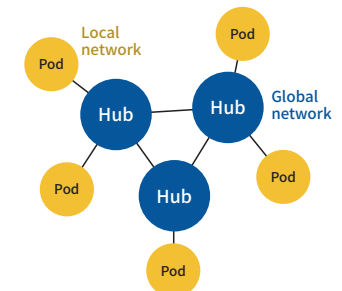
To create ideas for solving social issues, it is important for employees to have active discussions from diverse perspectives and transform their mindsets.

Yokogawa launched the Group-wide bottom-up network “SDGs Hub & Pod” in May 2022 and started SDG promotion activities. The name Hub & Pod is intended to start with a single activity (Hub), with the aim of expanding bottom-up activities that contribute to SDGs for each region and theme (Pod). The name contains our desire to spread the activity to the entire Group.

In the first half of 2022, 18 motivated employees from 12 countries voluntarily participated in a lively discussion on the theme of “Well-being of employees in the new normal era,” in which Professor Junko Edahiro, Department of Leadership and Innovation, Graduate School

of Leadership & Innovation, Shizenkan University participated as an advisor. Triggered by the expansion of COVID-19, the way employees work has changed significantly, and we have repeatedly considered what should be done to keep employees in good physical, mental, and social condition. The ideas considered will be proposed to senior executives in the future. A participant said, “It was a valuable experience because we usually have no opportunity to exchange opinions with Group employees across regions.”

Through these activities, Yokogawa will change the mindset of its employees and accelerate its efforts to solve social issues.





Climate Risks and Opportunities (Response to TCFD)

Environment Surrounding Yokogawa

Climate change is an urgent issue that the world must work together to tackle.

The UK-hosted COP26 was held from October to November 2021, in which countries around the world agreed, as an official target, to limit the temperature increase to 1.5°C above pre-industrial levels (the 1.5°C target). This 1.5°C target has gone a step further than the 2°C target of the 2015 Paris Agreement in view of the increasingly noticeable damage caused by heavy rains, strong winds, droughts, and other effects associated with climate change in recent years around the world. Companies are also being urged to take further actions for climate change.

Yokogawa’s customers and investors are changing their behaviors dramatically. Our customers are working towards reducing greenhouse gas emissions throughout their supply chains, demanding that Yokogawa also accelerate its efforts to reduce emissions. Furthermore, capital markets have seen a growing call for improved disclosure of information related to greenhouse gas emissions. As such, we, with our business spanning the globe, are under pressure to take appropriate action.

Yokogawa has set net-zero emissions as the vision for society in 2050 and listed achieving carbon neutrality as one of the six contribution areas established in AG2023. Viewing curbing GHG emissions and switching to inexpensive, reliable and sustainable energy as priority issues, we are not only reducing GHG emissions from our own operations but also contributing to the spread of renewable energy and more efficient energy use through our business.

Endorsement for the TCFD

Yokogawa is determined to proactively address climate change and prepare itself for the future, and it has expressed its support for the recommendations of 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 (February 2019).

Based on the TCFD’s recommendations, Yokogawa analyzes risks related to climate change and assesses their financial impact as shown in the following table, incorporates its findings into its management strategies and discloses related information.

Climate-related Financial Information

Governance Governance regarding climate-related risks and opportunities

Recommended disclosures: a) Board of Directors’ monitoring structure
b) The role of management

■ The Role of the Board of Directors

The Board of Directors formulates basic policies for addressing climate change and basic policies regarding the improvement of the system for managing risks and opportunities, monitors and supervises the effective operation of the system and appropriate response to sustainability issues. The Board considers the climate-related impacts during its discussion of business strategies and plans.

In appointing directors and auditors, we take into account their experience, skills, and expertise that are highly needed in our company. Climate-related issues are of paramount importance in Sustainability ESG.

■ The Role of Management

Management, whose top decision-making body is the Management Board, takes into account the impact of climate change in terms of both risks and opportunities when formulating business strategies and plans. Management works to achieve the sustainability targets linked to the mid-term business plan, including the targets related to climate change, and reports progress regularly to the Board of Directors.

For Group-wide risks including climate change risks, management has established the Risk Management Committee which selects the priority management risks that should be managed preferentially at the Group level, monitors the management of these risks, and reports to the Board of Directors. As the chair of the Risk Management Committee, the President and CEO is responsible for overseeing all matters related to risk management.



Climate Risks and Opportunities (Response to TCFD)

Strategy Impact of climate-related risks and opportunities on businesses, strategy and financial planning

Recommended disclosures: a) Mid- and long-term risks
b) Impact on businesses, strategy and financial planning
c) Resilience of climate scenario strategies

Strategy Overview

Energy, chemical and other manufacturing industries that greatly influence global GHG emissions are the clientele of Yokogawa's businesses. Yokogawa helps its customers reduce GHG emissions through its solutions that achieve stable operations, the conservation of energy and greater comprehensive business efficiency.

Mid- and Long-term Changes of the Business Environment

Yokogawa analyzed the changes in the business environment around 10 years later regarding climate change from the perspectives of politics, economics, society, and technology. From the perspective of politics, we predict that laws and regulations will become more strict to respond to climate change and increased geopolitical risk caused by energy shortages due to a larger population. From the perspective of economics, we predict a diversification of energy sources assuming the ubiquitization of renewable energy, a shortage of food and water, and resource depletion. From the perspective of society, we predict that global warming will continue and that environment pollution will be aggravated because of consumption rise along with economic growth. Also, from the perspective of technology, we predict that the structure of society will drastically change due to AI, IoT, and other digital technologies and that biomass materials contributing to resource recirculation will widely spread. Against the background of those environmental changes, our customers are transforming into companies that operate low-carbon businesses including renewable energy or that produce materials with little environmental impact such as bio materials, thereby increasing their business opportunities.

Long-term Business Framework and Mid-term Business Plan

Based on the drastically accelerating change in business environment, we aim for growth through the provision of shared value based on actions such as our response to climate change in the long-term business framework, and are working to expand business by seizing business opportunities created by the transformation of our customers' business strategies based on renewable energy-related market growth and climate-related issues in the AG2023 plan. Yokogawa also helps its customers reduce GHG emissions through its solutions that achieve stable operations, the conservation of energy and greater comprehensive business efficiency. More specifically, we have determined six mid- and long-term contribution fields and established focus areas and sustainability targets (for fiscal year 2023 and fiscal year 2030) for

each contribution field. In one of the contribution fields, the achievement of carbon neutrality, where our goal is to reduce GHG emissions and shift to affordable and reliable sustainable energy sources, we have set renewable energy infrastructure support, storage battery production support, and GHG reduction in our business facilities and the supply chain as focus areas. We have also set the improvement of customers' efficiency and new businesses that will contribute to the reduction of GHG emissions, such as smart manufacturing business which improves efficiency in society and industry, and the support of new businesses, which aims to create a resource-recycling ecosystem, as focus areas.

To achieve the sustainability targets, we are expanding our main business, the control business, in three business segments, Energy & Sustainability, Materials, and Life, and steadily expanding our businesses in different industries. In the Energy & Sustainability segment focusing on businesses for a carbon-free society, the renewable energy industry is our target. We will establish a business to provide energy optimization management solutions for complex energy supply chains including storage batteries. In the Materials segment, we are expanding our solutions in the functional chemicals market. As the shift to carbon neutrality and a circular economy accelerates, we will respond to the needs of new materials such as rechargeable batteries for EVs against the backdrop of CO2 reduction efforts in the mobility market. Our carbon-neutral solutions will help our customers who consider GHG emissions as a management issue to pursue decarbonization. In the Life segment, we are committed to creating new value through various initiatives such as the expansion of businesses related to MES and productivity improvement in the pharmaceutical and food industries that contribute to the adaptation to climate change, overseas expansion of wide-area wastewater management and seawater desalination in the water business, and proof of concept experiments for the use of recycled water. In the measuring instruments business, we will contribute to solving customer issues in the fields of automotive electrification and electrification and renewable energy aimed at a carbon-free society.

Implementation of Internal Carbon Pricing (ICP)

Achieving carbon neutrality and reducing greenhouse gas (GHG) emissions is a corporate social responsibility and of great importance for Yokogawa in terms of both opportunity and risk. In fiscal year 2022, we began operating the ICP system to promote GHG reduction measures that provide high economic rationale.

When considering capital investment or planning the adoption of clean energy, we will make decisions based on the impact of GHG emissions by converting the expected increase or decrease in GHG emissions into monetary values and taking them into account in financial decisions.

We set a carbon price for the entire Group in the first year that targets the procurement of electricity from renewable energy sources, which greatly contribute to Scope 2 reduction, and investment of manufacturing equipment. The ICP policy and carbon price are deliberated by the Sustainability Committee and determined by the Management Board. We will apply, in stages, the ICP to Scope 1, Scope 3, and business planning as well.



Climate Risks and Opportunities (Response to TCFD)

Resilience of Climate Scenario Strategies

When developing the long-term business framework and the AG2023 plan, we evaluated risks and opportunities and planned measures to address them in the 1.5 °C and 4 °C scenarios that we had established internally. In the 1.5 °C scenario, along with acceleration of the transition in energy caused by the increasingly strict carbon-free policies of each country, we predict the need for renewable energy and energy conserving businesses, etc. will grow while fossil fuel business will shrink. In the 4 °C scenario, we predict the expansion of disaster prevention solutions and pharmaceutical and food production-related businesses due to physical risks such as damage to business facilities and supply chains in conjunction with increased flooding and other natural disasters and reduced yields of agricultural products and increase of diseases resulting from an abnormal climate. We have incorporated measures based on these risks and opportunities in our business strategies.

Main opportunities related to climate change

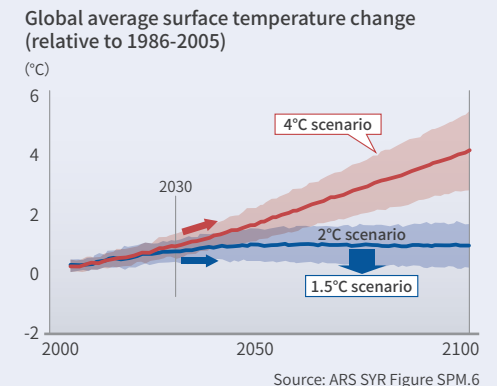
Classification	Industry segments	Main opportunities	Direction of actions
Direction of actions	Energy & Sustainability Business	<p>Establishment of energy management that enables the optimal operation of the entire energy transmission and distribution infrastructure for energy supply chains that include the utilization of batteries, hydrogen, and other energy storage solutions</p> <p>Contribution to customers' business transformation by leveraging Yokogawa's deep domain knowledge amid the accelerating global decarbonization trend</p>	<ul style="list-style-type: none"> Expand the range of providing solutions to the entire value chain Explore co-creation with customers through PoC and pilot projects Investigate different business models and examine the profitability of these businesses in collaboration with stakeholders in related industries in business areas such as CCUS and hydrogen Accelerate business development through M&A and participation in government-support schemes Set and promote renewable energy infrastructure support as a focus area for achieving carbon neutrality
	Materials Business	Expand the portfolio of solutions to contribute to solving issues including those from the site level to the management level, such as carbon neutrality in supply chains and achieving a recycling-oriented economy	<ul style="list-style-type: none"> Strengthen the ability to provide solutions on a global level Contribute to solving environmental and social issues, including CO2 reduction through the provision of carbon management solutions Set and promote manufacturing support for the EV supply chain (functional chemicals, storage batteries, and semiconductors) as a focus area for achieving carbon neutrality
	Life Business	Support for productivity improvement throughout pharmaceutical and food value chains on the back of energy reduction and efficiency needs	<ul style="list-style-type: none"> Accelerate overseas business expansion and new product development Continue to engage in M&A and alliance activities
		Provide solutions in the water sector against the backdrop of growing needs for a stable supply and improved quality of water	<ul style="list-style-type: none"> Facilitate digital transformation by introducing measurement technology developed in genetic analysis and scientific instruments
	Measuring Instruments Business	Contribute to a transition from fossil fuels of power supply companies to renewable energy with the aim of net-zero CO2 emissions	<ul style="list-style-type: none"> Further enhance high-precision, wideband power analyzer technology to contribute to technical development and production line inspections aimed at improving the power generation efficiency of renewable energy equipment manufacturers Expand solutions to meet needs such as tests for renewable energy power generation equipment manufacturers to determine their compliance with power quality standards, with a focus on conversion efficiency measurement of power conditioning systems

Main risks related to climate change

Classification	Type	Category	Main risks	Direction of actions
Risks	Transition risks	Policies and laws	<p>Impact on businesses from the introduction of measures such as carbon taxes, taxes on fuel/energy consumption, and emissions trading</p> <p>Business opportunity losses due to changes in laws and regulations</p>	<ul style="list-style-type: none"> Set targets for Scopes 1, 2, and 3 and implement emission reduction plans Efficiently carry out investment and measures for decarbonization by introducing ICP
		Technology	Sales opportunity losses due to delays in technical development of new products and services aimed at a carbon-free society	<ul style="list-style-type: none"> Accelerate the development of new products and services for carbon neutrality and expand existing products Promote to develop environmentally friendly products based on evaluations using the Lifecycle Assessment (LCA) standards Pursue investments including M&A and alliances to acquire technology
		Markets	Business opportunity losses due to a delayed implementation of climate change initiatives in response to changes in the market environment	<ul style="list-style-type: none"> Consider initiatives for environmental changes such as energy shifts and respond to changes in the market environment Utilize domain knowledge and DX and expand the solutions portfolio
		Reputation	Decline in Yokogawa's reputation and corporate value due to delayed actions in addressing climate change	<ul style="list-style-type: none"> Set the "Three goals" sustainability goals based on Yokogawa's vision for society in 2050 in light of growing public interest in climate change and expectations for the role of companies Improve information disclosure
Physical risks	Physical risks	Impact on businesses from social disruption caused by climate disasters resulting from the impact of climate change, such as cyclones and floods (acute) and changing weather patterns and rising average temperatures (chronic), as well as damage to business facilities and impact on supply chains	<ul style="list-style-type: none"> Prevent, avoid, and reduce the impact of social disruption through efforts such as information gathering within the Group and contract with external organizations Conduct regular risk assessment on major manufacturing bases and formulate and review business continuity plans (BCPs) 	

Assumed climate change scenarios

To address the uncertainty surrounding the effects of climate change, we are considering the form that society should take on by 2030, including our response in the 4°C scenario with severe, pervasive, and irreversible global impacts and the 1.5°C scenario where even stricter reductions in greenhouse gas emissions and other efforts will be required.





Climate Risks and Opportunities (Response to TCFD)

Risk Management

Processes for the identification, assessment and management of climate-related risks

- Recommended disclosures:
- a) Risk identification and assessment processes
 - b) Risk management process
 - c) Process for integrating climate-related risks into overall risk management

Risk Management Structure

We identify, assess and prioritize risks and establish and implement countermeasures and targets while confirming and improving the effectiveness of our countermeasures. In order to realize effective risk management within the Group, we also have established the Risk Management Committee chaired by the President and CEO, who is responsible for supervising all matters related to risk management.

We define uncertainties that might affect the Group's corporate value (e.g., our external environment including climate change, strategies, product quality, environmental impact, crisis management, and corporate ethics) as risk. Under the basic policy of integrally managing various internal and external uncertainties relating to the business to maintain and increase the corporate value of the Yokogawa Group, we categorize and manage these uncertainties in terms of business opportunities, compliance, and crisis events.

Promoting Risk Assessment and Management

Macroeconomic trends and large-scale disasters such as floods caused by climate change are assessed as common risks for all organizations, and their outcomes are incorporated into the selection of material risks with the assessment results of individual risks. As part of their independent risk management activities, each organizational unit of the Group identifies and assesses risks once a year, establishes countermeasures and targets, and implements these countermeasures including risk reduction. Moreover, each organizational unit has a risk manager and a network for the Group's risk management. Based on risk assessments, the Risk Management Committee selects priority management risks whose management should be prioritized at the Group level and decides the methods for monitoring them while regularly checking countermeasures, targets, and the progress of activities and reporting to the Board of Directors.

In risk assessment, we assess the severity of risks from the perspectives of impact and likelihood of occurrence: The risks assessed include business opportunity risks, e.g. external

environment and strategies including climate change, compliance and crisis event risks, such as product quality, environmental impact, health and safety, information security, crisis management, and corporate ethics (embezzlement, accounting fraud, data falsification, bribery, harassment, etc.). When we assess the impact of risks, we also take into account the social and environmental impact of risks such as human rights risks and responses to climate change, as well as financial and human aspects. We take a comprehensive approach to assessment considering both bottom-up and top-down perspectives, including changes in our management environment.

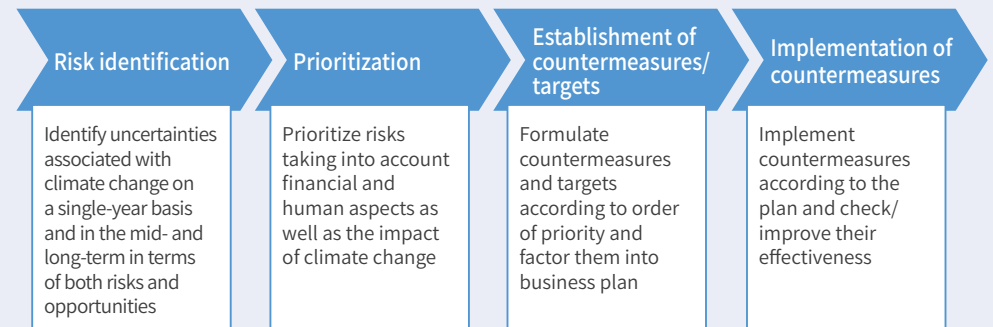
In addition, we have established the Crisis Management Committee chaired by the President to respond to crises such as events, affairs, disasters and accidents that may seriously impact risk management. When a crisis occurs, we will collect information, give instructions for quick and appropriate action, secure human safety, minimize economic loss, and fulfill the social responsibilities of the company.

The department in charge of internal audits evaluates the effectiveness of Yokogawa Group's risk management process and reports important findings to the Board of Directors and the Audit & Supervisory Board Members.

Priority management risks

In fiscal year 2020, the Group selected and managed the risk of rapid changes in market requirements due to the SDGs including responses to climate change as a priority management risk. This risk was again selected as a priority management risk in fiscal year 2021.

P.57 for Risk Management





Climate Risks and Opportunities (Response to TCFD)

Metrics and Targets

Metrics and targets for assessing and managing climate-related risks and opportunities

- Recommended disclosures:
- a) Metrics for assessment
 - b) GHG emissions and related risks
 - c) Targets and performance

Metrics and Targets

In its AG2023 plan, Yokogawa set the achievement of carbon neutrality through the reduction of GHG emissions and the transition to affordable reliable, and sustainable energy as a contribution area with the goal of achieving it by 2030.

We have set the target of reducing the CO₂ emissions from our customers' businesses by 1 billion tons (fiscal year 2018 to fiscal year 2030). It is a target we will work together with customers to achieve. The amount of renewable energy and low carbon electricity which customers generate is compared with the average CO₂ emissions from electricity generated using fossil fuels, and the difference is recorded as actual results. Further, we have set indicators and targets (fiscal year 2023) for our support of the development of renewable energy technology and the provision of systems used in storage battery production.

To track GHG emissions performance at our business facilities, we also set targets for Scopes 1, 2 and 3 and calculate emissions based on the GHG protocol methodologies. In Scopes 1 and 2, we aim to achieve a 50% reduction by fiscal year 2030 when compared to fiscal year 2019 and the carbon neutrality of our business facilities by 2040. In Scope 3 (Categories 1 and 11), our aim is to reduce emissions by 30% compared to fiscal year 2019 by fiscal year 2030. These targets are in consideration of a GHG emission reduction level that strives to limit the global temperature rise to 1.5°C over the pre-industrial level, which is one of the goals of the Paris Agreement. As of August 2022, the Company is in the process of applying for validation of these targets as Science Based Targets (SBT).

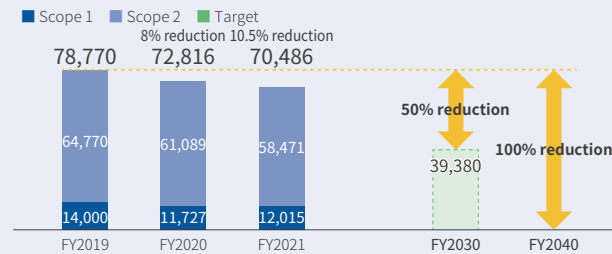
For details of Scopes 1, 2 and 3 emissions, see page 50 and 51

CO₂ emissions control amount through customers (billion t-CO₂)

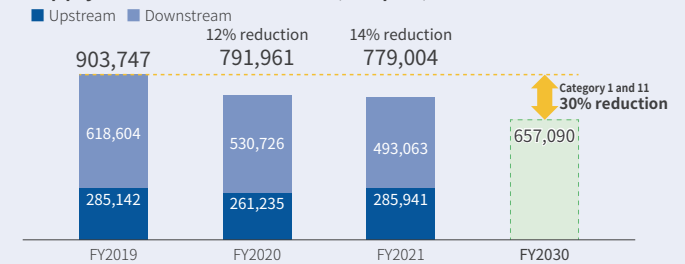
Cumulative total from fiscal year 2018 to fiscal year 2030



GHG emissions (Scope 1, 2) (t-CO₂e)



Supply chain GHG emissions (Scope 3) (t-CO₂e)



Fiscal year 2030 (Fiscal year 2040 target)

Indicator	Fiscal year 2030 (Fiscal year 2040 target)	Fiscal year 2021 result
CO ₂ emissions control amount through customers	1 billion t-CO ₂ (50% or more from renewable energy and new technologies), cumulative total from fiscal year 2018 to fiscal year 2030	330 million t-CO ₂ (220 million t-CO ₂ from renewable energy)
GHG emissions (Scope 1, 2)	50% reduction by fiscal year 2030 (base year fiscal year 2019) 100% reduction by fiscal year 2040	10.5% reduction
GHG emissions (Scope 3*) base year fiscal year 2019	30% reduction	12.7% reduction

Fiscal year 2023 target

Focus area	Indicator	Fiscal year 2030 target	Fiscal year 2021 result
Support renewable energy power generation	(cumulative total since fiscal year 2018) CO ₂ emissions control amount through customers	500 million t-CO ₂	330 million t-CO ₂
Support for transportation, storage and utilization of renewable energy	Sales growth rate of measurement instrument to renewable energy customers (base year fiscal year 2020)	2.2 times	1.7 times
	Sales growth rate of measurement instrument to renewable energy customers (base year fiscal year 2020)	1.7 times	1.6 times
(within Yokogawa) GHG reduction at Yokogawa sites and in supply chain	GHG emissions (Scope 1, 2) base year fiscal year 2019	10.0% reduction	10.5% reduction
	GHG emissions (Scope 3*) base year fiscal year 2019	10.0% reduction	12.7% reduction

* Emissions from purchased goods and services (Category 1) and emissions from the use of sold products (Category 1) are included.

Performance

In fiscal year 2021, the CO₂ emissions from our customers' businesses reduced since fiscal year 2018 amounted to 330 million tons, mainly due to significant growth in contribution to wind power generation. GHG emissions (Scopes 1 and 2) were reduced by 10.5% compared to fiscal year 2019 as a result of measures to reduce energy consumption, replacement of equipment with equipment that emits less GHGs, and a shift to electricity generated from renewable energy, while restraining effects of the COVID-19 pandemic. GHG emissions in our supply chain (Scope 3) were also reduced by 14% compared to fiscal year 2019 by reflecting the expansion of business related to solutions and products with low GHG emissions. We will accelerate our efforts to achieve our targets.



Society

Companies are supported by people and society.

Yokogawa seeks to provide all members of our diverse workforce with opportunities to thrive at work, fulfill their potential, and grow with society.

This chapter introduces our initiatives relating to human resource management, occupational health and safety and human rights.

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Metric	Engagement survey score
Performance and Targets	At a level comparable to other leading companies (FY2023 Target) 81% (FY2023 Target) 80% (FY2021 Performance)



Human Resource Management

Human Resources strategy

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.

Improvement of Employee Engagement

Importance of Employee Engagement

We believe increasing sustainable employee engagement is essential to YOKOGAWA's corporate value and sustainable growth. When employees are engaged, enabled and energized, they are independently and enthusiastically committed to their work and feel ownership of the achievements of the organization's goals, performance and ultimately the value provided to the company's stakeholders. We help each employee contribute by providing a work environment that supports productivity and performance while ensuring individual physical, interpersonal and emotional well-being at work.

Global Employee Engagement Survey

Employee engagement is the intensity of employees' connection to their organization toward achieving organizational goals which is sustained by an environment that supports productivity and a work experience that promotes well-being. Its improvement also requires employees' understanding of the organization's vision, mission, and values, the provision of career development opportunities for employees, and appropriate performance evaluations. To understand the current situation, we regularly conduct global employee engagement surveys. Analyze the results of the surveys and reflect the lessons learned in our strategies and improvement measures to increase employee engagement.

Sustainability Goal: Engagement Survey Scores

In order to improve employee engagement, we have defined engagement survey scores as one of our sustainability goals. The Engagement Survey Score measures employees' satisfaction with their work environment, the state of their well-being, and the level of employee engagement. Based on this, we try to achieve high-level employee engagement on par with

global high performing companies.

The result of 2021 survey and Yokogawa's next action

The 2021 survey results tell us we must do more to improve Efficiency, both at the Corporate level and the department level. We have already started looking into this as it is a key driver to employee engagement. Efficiency is also key to the achievement of Yokogawa's vision. We encourage every organization to talk to their teams and identify work processes that can be more efficient.

Secondly, we need to strengthen the Manager and Employee Connection. Given that many employees are working remotely due to COVID, relationships, communication and engagement can suffer. We need to strengthen the ties between managers and employees and ensure conversations are being held with each employee about their goals, career aspirations, career development, and how Yokogawa's vision applies to them personally. In the end, it is our employees that will help us succeed.

Measures for the Group	
1. Improve efficiency	2. Enhance connections between managers and employees
The 2021 global employee engagement survey showed an increase in scores in all categories except "efficiency". We will identify specific problems decreasing efficiency at the corporate level and also at the department level, and take actions for improvement.	The 2021 global employee engagement survey showed an overall trend of lower scores for employees compared to managers. This is a trend that is generally observed in many companies, but we see one reason for the decline in the connection between employees under work from home situation and will take actions to improve this situation.



Human Resource Management

DE&I (Diversity, Equity and Inclusion)

Our DE&I Statement

Yokogawa believes in building a culture that accepts, values and celebrates individual differences. Yokogawa is committed to providing an equitable and inclusive environment where everyone can belong, contribute, succeed and demonstrate their full potential without fear of harassment, verbal abuse, or other behaviors that inhibit someone from fully contributing or harms their dignity.

To achieve this, Yokogawa 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, and in so doing will not discriminate based on ethnicity, nationality, gender, religion, age, social position, or disability. By utilizing digital technology and cultivating an inclusive working environment, we will make it possible for every employee to demonstrate his or her full potential and to work comfortably with a flexible workstyle. Engaging communication and constructive collaboration based on mutual respect facilitates innovation and the co-creation of new value for our customers, partners, suppliers, and in so doing, improves our planet.

DE&I initiatives Over the World

The diversity of our people is our strength as well as a requirement for Yokogawa to expand its businesses globally. To enable this, we have expanded the scope of the global job opportunity system to allow employees to apply for open job opportunities anywhere around the world. In addition, during the past year, Yokogawa has conducted many DE&I mindset trainings to deepen our understanding of the importance of promoting diversity and inclusion in Yokogawa and recognizing unconscious bias and how it affects our actions. Last year, more than 1,000 leaders from overseas took the training, and in July 2021, the training was held for the top executives. DE&I promotion activities are spreading around the world, including recognition of International Women's Day and promoting Women in STEM networks.

A Human Rights training was also developed and translated into multiple languages. More than 12,000 employees globally have taken the course. Steps are being taken to ensure all employees attend both the DE&I training and the Human Rights training over the next year.

We expect advancing our diversification and removing barriers will improve employee engagement, our ability to respond to customers, innovate, and will fuse diverse sense of values to create new value.



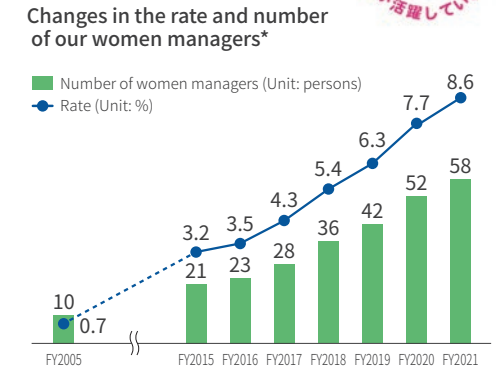
International Women's Engineering Day in Singapore

Metric	Proportion of women in managerial positions	Disability employment ratio (Japan)
Performance and Targets	20.0% (FY2030 Target) 12.5% (FY2023 Target) 12.6% (FY2021 Performance)	2.5% (FY2023 Target) 2.46% (FY2022 Performance)

Promoting Active Participation by Women

Yokogawa is promoting women's empowerment as a part of its diversity promotion activities based on the human asset strategy of the mid-term business plan. In April 2015 Yokogawa established a work section that is dedicated to the promotion of diversity. Yokogawa is pursuing its goal of achieving a ratio of Women managers of 12.5% (global) by fiscal year 2023, and 20% (global) by fiscal year 2030. Two women have been appointed as executive officers in 2021.

In Yokogawa Electric Corporation, we are actively helping women in Japan achieve success in their jobs by providing assistance with formulating career development plans and career development training. In March 2022, a panel discussion "Career and Leadership" was held with the president and women managers which increased motivation of the participants. In 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. In March 2016, we formulated a General Employer Action Plan based on the Act on the Promotion of Female Participation and Career Advancement in the Workplace and disclosed it on the website of the Ministry of Health, Labor and Welfare.



*Originally employed by Yokogawa Electric Corporation

Promoting Active Participation by People with Disabilities

Since it launched a normalization project in 1992, Yokogawa Electric Corporation has consistently continued its activities to recruit employees with disabilities. In Yokogawa group, employees with disabilities (e.g., disability with upper or lower limbs, auditory disorder, visual disorder, internal organ disease, mental disorder, developmental disorder, intellectual disability) engage in various fields, such as engineering, manufacturing, sales, and office work with holding up independence, autonomy, ambition, and rising to challenges as its keywords. Yokogawa Foundry Corporation, a Group company, has been certified as a special subsidiary conforming to The Act for Promotion of Employment of Persons with Disabilities. We will continue to promote the active participation of employees with disabilities in cooperation with labor organizations.



Metric	Training time per person	
Performance and Targets	40 hour per year per person 28 hour (Yokogawa Electric Corporation)	(FY2023 Target) (FY2021 Performance)



Human Resource Management

Human Resources Development

A diverse workforce is an indispensable management resource and a key driver for Yokogawa’s growth and creation of value. To achieve the targets of the AG2023 midterm business plan, Yokogawa is pursuing transformation through accelerated strengthening of human resources, for creation of new value through co-innovation with our customers.

Moreover, to be a trusted partner and a respectful citizen to our various stakeholders, we will advance group-wide efforts to cultivate a rewarding corporate culture by instilling Yokogawa’s mission and purpose in the hearts of each employee and establishing a framework that enables employees to pursue their career goals.

Fostering a Corporate Culture That Inspires Employees to Grow with the Company

■ Initiatives of Yokogawa University to Realize a “Learning Company”

With the goal of ensuring Yokogawa can continue to create greater value for our customers and society in a fast-changing world, in October 2018 we established Yokogawa University, an inhouse institution, to provide our employees with an environment to acquire and increase their level of expertise and skills in a broad range of areas. E-learning is used as the primary method of training so that our employees around the globe have an equal opportunity to learn without time or location constraints. At the same time, we are developing instructors globally to ensure the availability of instructors at all our locations.

Further, our officers serve as instructors to educate our employees.

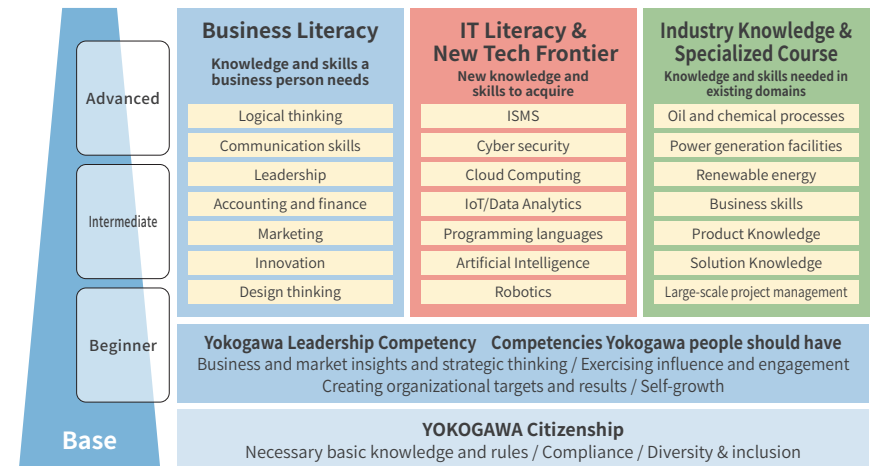
By offering employees opportunities to take on new challenges and helping motivated employees grow faster while cultivating a corporate culture where employees can learn from one another (“Learning Company”), Yokogawa aims to transform itself into an enterprise that is able to achieve sustained growth through employee growth and development.



E-learning class with internal lecturer

■ Expanding the Program Content to Contribute to AG2023

Education programs are divided into three major themes: Business literacy, which is a set of basic skills in leadership, finance, and other areas expected of a professional; themes based on functional areas of business such as sales and services needed to transform existing businesses and to impart knowledge; and themes based on new technologies and other resources needed to create new businesses and transform business models. External e-learning resources have also been incorporated to expand the programs. While the University started with some 120 programs when it opened in October 2018, it was increased to about 2,700 by the end of March



Yokogawa University Learning Categories

2022. We intend to keep expanding hard and soft types of contents geared toward achieving our AG2023 targets. Employees will apply what they learned from the programs to work and generate more value, so as to realize growth for the Company.

Global Talent Management System

To sustain growth and enhance its corporate value over the medium to long term, Yokogawa is prioritizing the development of leaders who are capable of achieving success in the global business arena. To systematically recruit and develop global human resources and prepare them for managerial roles, in fiscal year 2018 Yokogawa established an organization to pursue a group-wide, strategic approach to human resources allocation and development.

Moving forward, we will further expand our efforts to develop more leaders at an early stage.



A Safe and Comfortable Work Environment

Promotion of Work-Life Management

The environment surrounding employees and their values are constantly changing as they go through different stages of life. We support employees to manage their work and family life by establishing new flexible work systems, including a flextime system without core time, a telecommuting system, and a time-unit leave system, so that they can focus on work with peace of mind as they adapt to various life changes. Yokogawa Electric offers programs that help its employees balance work and family, including an hourly childcare leave, which is available until the child enters elementary school, and a childcare leave for sick/injured children. In addition, the Company's next-generation childcare assistance program supplies ¥100,000 per child once a year. Many employees, both men and women, take advantage of these programs, and almost all of those who take childcare leave return to their former positions, thanks to the many programs supporting workers returning from leave and a workplace culture based on mutual understanding and support. To make it easier for employees to take childcare leave, the Company informs those with a new child and their superiors of the availability of its childcare programs. We have also developed related programs, including full pay for the first week of childcare leave.

As a consequence, the percentage of male workers who take childcare leave increased from the 1% range to 36.8% (fiscal year 2021). Further, the Company was successful in attracting Poppins Nursery School Musashino, a nursery certified by the Tokyo metropolitan government, to the premises of our head office to help not just employees but local residents balance childcare and work. As a result of these efforts, the Company received Platinum Kurumin Certification by the director-general of the Tokyo Labor Bureau as a company supporting childcare in February 2021. The telecommuting system and time-unit leave system introduced by Yokogawa Electric in fiscal year 2016 are used by many employees, including those who need childcare and nursing support, as a work style unconstrained by time or location. In an effort to create a corporate culture that encourages employees to use these systems, our in-house newsletter features the work styles of employees who are using the programs effectively and a message from the president. We have also opened an information site on the intranet to introduce various examples of work styles and programs. In this way, we have employed many different media channels to encourage the use of the programs.



The Kurumin mark

New Work Styles

We have made it a global policy in this new normal era to switch from the assumption that work is carried out at the office to a work style of independently selecting where to work to create output most efficiently in accordance with work contents, goals, and lifestyle. In responding to the COVID-19 pandemic, we have transitioned to remote work for the most part and maintained our business operations even after the state of emergency was declared, which has been functioning well from the perspective of business continuity plans (BCP). As such, we are promoting new work styles centered around telecommuting. Yokogawa Electric introduced a remote work system that allows work from any location in April 2021. As of June 2022, about 40 employees were working further away than commuting distance. These efforts were highly evaluated, and we received the 22nd Telework Promotion Award, Award of Excellence from Japan Telework Association. We are trying out new work style reforms not only to acquire excellent human resources and improve engagement but also to enable sustainable growth of Yokogawa.



Harassment Prevention

Yokogawa works to prevent harassment and prescribes that “harassment is not allowed” in the Yokogawa Group Code of Conduct. In order to promote diversity and develop an environment where all employees can thrive, we revised the “Corporate Policy for Harassment” and established the “Harassment Prevention Guidelines” in fiscal year 2016. We encourage the employees of Yokogawa Electric and its group companies in Japan to be respectful of one another and inform them that we do not tolerate any acts of harassment, including sexual harassment, abuse of authority, harassment that interferes with the use of childcare and nursing care leave, stalking, and discriminatory acts against members of the LGBT community, and are making efforts to ensure compliance and implementation.

Further, Yokogawa Electric has established the “Yokogawa Group General Hotline,” where the employees of Yokogawa Electric Corporation and its group companies in Japan can receive consultations on various issues including harassment. When consulted, we conduct necessary interviews and investigations on workplace conditions based on the intentions of employees seeking advice while taking their privacy into consideration. If harassment is found to have occurred, we take strict disciplinary actions against the person who committed the harassment and give appropriate guidance such as requesting measures to prevent reoccurrence. We ensure that employees seeking consultation and employees who contribute to fact-finding investigations will not be treated disadvantageously.



A Safe and Comfortable Work Environment

Management of Health and Productivity

In order for Yokogawa to provide sustainable value and lead the way in solving social issues, it is essential to promote health and productivity management in which health is considered from a management perspective and strategically practiced. Our health and productivity management is aimed at helping employees autonomously maintain their health while improving their physical and mental health, satisfaction, and happiness in order to increase work engagement and productivity across the Group.

In 2016, Yokogawa formulated a Health Declaration as a basic policy for health and productivity management with the aim to further accelerate initiatives related to employee health. 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 Medical Center of the Human Resources and General Affairs HQ, the Japanese Human Resource Administration Department, and the General Affairs Department coordinate with occupational physicians and the Yokogawa Electric Health Insurance Association and the 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. As a result of these initiatives, Yokogawa Electric has been continuously certified as an outstanding health and productivity management organization* by the Ministry of Economy, Trade and Industry since fiscal year 2017. The Company was also certified in fiscal year 2017 through fiscal year 2019 and in fiscal year 2021 as an outstanding health and productivity management organization (White 500).

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

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.



Yokogawa's senior executives are also taking part in the program (body composition measurement).

Health Improvement Measures

Yokogawa Electric has been running the Health Development Program as a measure to promote health since fiscal year 2015. In this, employees independently check their condition and are encouraged to provide self-care and improve their health. The program includes counting the number of steps in a one-week period, an interview with a physician on the day of the program (about exercise, diet, drinking, smoking, sleep, and cognitive habits, etc.), and the measurement of body composition and physical fitness. In addition, occupational physicians refer to findings from previous checkups and give each employee tips to improve lifestyle. Amid changes to telework-centered work styles during the COVID-19 pandemic, we reviewed the existing Health

Development Program that operates under the assumption that employees are all located on-site. We will roll out a new health improvement program called "Let's Shine!" going forward from fiscal year 2022.

There are plans to organize initiatives such as a walking event for each organizational unit so that employees feel connected to each other and acquire healthy lifestyle habits in a fun way.

Utilizing Data on Health

We started tallying and analyzing data from health examinations, stress checks, the Health Development Program, and work attendance in fiscal year 2020. The results are shared within the Health and Safety Committee and used in various health improvement measures. By implementing measures based on data to improve employees' health literacy, we aim to energize the organization and increase work engagement and productivity.

Providing Learning Opportunities to Promote Mental and Physical Health

We are working to raise our employees' health awareness by implementing e-learning, managerial training, health education in various seminars, and a range of events on exercise and smoking, thereby hoping to encourage them to take health action from themselves.

EAP for a Healthy, Fulfilling Company Life

We offer an Employee Assistance Program, which is designed to help employees maintain high performance and avoid a situation in which they are unable to demonstrate their full potential due to health problems and life changes. Under EAP, we establish a comfortable working environment while improving the program to adapt to the current situation and support employees to manage both their mental health (e.g., stress care) and careers (e.g., reinstatement support). It is our goal to ensure that all our employees stay in good health and enjoy a fulfilling company life.

Employee Assistance Program (EAP)

Education/PR	Utilize e-mail and web pages to provide relevant information that will help employees gain a better understanding of mental health.
Mental health training	Implement training for new employees and managers in an effort to prevent or early detect mental health problems.
Stress check	Based on the results of the stress check, identify causes of stress in the workplace. Implement programs and activities involving the entire workplace to prevent, contain, and eliminate these causes so as to ensure a more comfortable workplace.
Assistance for returning to work	To care for employees who suffer from mental health problems or take a leave of absence, and to ensure the smooth reinstatement of those who return to work after recovery so as to prevent recurrence, we have a system to provide proper support for each individual and workplace in all stages of mental health response.
Health development (health improvement measures)	To promote employees' physical and mental health, we offer health development programs centered around improving lifestyle habits, particularly exercise habits. Physical exercise is effective in the prevention of mental disorders as well as physical illness. As such, we support our employees to improve their health by checking their health condition and providing self-care.
Consultation	We have a system to help our employees seek consultation within or outside the Company regarding not only mental health but also various areas of human relationships, career issues, sexual harassment, abuse of authority, and discrimination against individuals including LGBTs.



A Safe and Comfortable Work Environment

Workplace Reform

We are creating offices to allow employees to choose a safe and secure environment where they can work independently. These spaces are intended for many different purposes. For example, the Concentration Space is for individuals to concentrate on their respective tasks, the Collaboration Space is designed to facilitate internal collaboration; and the Relaxation Space helps staff members come up with ingenious new ideas.



We can change how the free workspaces are used depending on the situation. Changing from collaboration-oriented (top photo) to solo work-oriented (bottom photo) is also possible

Trying Workplace Reform at Development Workplaces Too

Our development workplace offices used to be difficult in terms of workplace reform because of the work conducted there. However, as employees at development workplaces increasingly expressed their desire to try new work styles, we started work to renew the offices by having the employees there set up projects.



Renewed development workplace

Introducing the Shared Office as a Third Place

It used to be taken for granted that you work at the office, but working from home has now become part of our daily lives. It has now become possible to use shared offices where you can choose to work according to your personal situation, outside the office and the home.



Shared offices where employees can independently choose to work

Facilities Dedicated to Human Resources Development

Yokogawa has a “learning center” used for various human resources development, including new employee training. We have prepared an environment for comfortable training, both in person and online, with rooms that can be changed into different sizes and layouts according to number of participants and training contents.



Learning center YOKOGAWA Campus

Building an Environment That Accepts Diversity

As our employees become more diverse, we are working hard to create an environment where everyone’s “differences” are understood and everyone feels comfortable working.

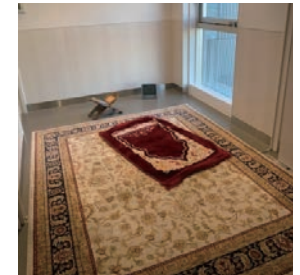
• Prayer rooms

We have set up facilities for employees who need to pray during working hours for religious reasons.

• Break rooms for women

When communicating with employees in the middle of childrearing, they said things like “there’s nowhere I can comfortably pump my breast milk,” “I’d like somewhere to relax during pregnancy,” and “it would be good to have somewhere to lie down a while.” It is an important task to create a working environment where everyone is respected and equal, so it was urgent for us to create a workplace environment where pregnant and child-rearing women can also feel comfortable. This is why Yokogawa Electric created the “break rooms for women” as spaces where women can pump milk, manage their health, and relax comfortably.

We have prepared the required environment by including a fridge and freezer for storing breast milk and a microwave oven to sterilize the milk pump, thereby making it easier for women to choose to raise toddlers while working. Feedback from female employees using the rooms has been things like “I use it when I go to work and it’s a great help” and pregnant employees commenting that “I generally telework, but just having the break room is an assurance when I do go to the office.”



Prayer rooms



Break rooms for women



Metric

ISO45001 certification acquisition

Performance and Targets

Principal locations certified (12 companies) (FY2023 Target)
Principal locations certified (9 companies) (FY2021 Performance)



A Safe and Comfortable Work Environment

Occupational Health and Safety Initiatives

The Yokogawa Group has introduced an Occupational Health and Safety Management System and seeks to continuously enhance the levels of activities related to occupational health and safety and promote risk reduction. With the goal of improving the levels of occupational health and safety in phases, the Group is undertaking initiatives to eliminate and reduce potential risks identified through risk assessment and is regularly conducting internal audits of the Group companies to evaluate and review the initiatives. Yokogawa is also enhancing the effectiveness of the system by combining these initiatives with its existing activities, including analysis of and countermeasures against near-misses and health and safety patrol. We have introduced telework (working from home) as a measure to stop the spread of the COVID-19 pandemic. As with the environment at the workplace, we are implementing measures to prevent occupational hazards in the telework environment too.

Occupational Health and Safety Policy

In recognition that occupational health and safety are a basis for the management of the Yokogawa Group, Yokogawa shall pursue the following initiatives to promote, create and maintain health and safety for all of its personnel involved.

- Establish an occupational health and safety management system, clarify roles, authorities, and responsibilities, and promote occupational health and safety management activities.
- Work to improve occupational health and safety by observing relevant laws and regulations as well as establishing the necessary independent standards.
- Seek to eliminate or lessen risks to occupational health and safety by first assessing their danger level.
- Promote open communications with Yokogawa Group personnel, customers, shareholders, members of the local community, and contractors.
- Provide the education and training to all Yokogawa Group personnel to ensure occupational health and safety.
- Perform audits on a regular basis and make continual improvements in our occupational health and safety system.

Operation of the Occupational Health and Safety Management System

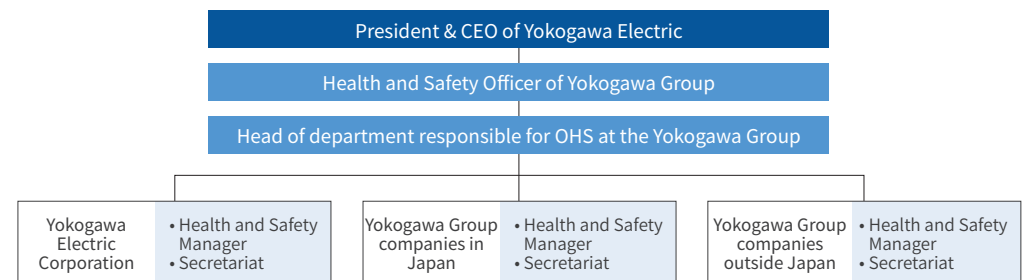
With the goal of improving the levels of occupational health and safety in phases, the Group is undertaking initiatives to eliminate and reduce potential risks through risk assessment carried out periodically or at the time of the change in operations, operating procedures or others as well as the implementation of countermeasures, while also conducting internal audits of the

Group companies to evaluate and review the initiatives. The Occupational Health and Safety Management System is being operated while maintaining communication with people working at the Group, including temporary staff and contract workers. Yokogawa is also enhancing the effectiveness of the system and activities by combining its existing activities, including analysis of and countermeasures against near-misses and health and safety patrols. In order to increase the effectiveness of our system and activities, we aim to have all 12 principal locations certified with ISO 45001, which is the international standard for occupational health and safety management, by fiscal year 2023.

Yokogawa Group Occupational Health and Safety Objectives

- **Elimination or reduction of occupational accidents**
Secure safety and promote health of all personnel working for the Yokogawa Group.
- **Establishment, maintenance, and improvement of the Occupational Health and Safety Management System**
 - (1) Make continual improvements in OHS activities, through implementation of PDCA cycle and sharing OHS activity information.
 - (2) Conduct risk assessments in all Yokogawa Group companies, for eliminating or reducing risks.
 - (3) Maintain and improve the current OHS level by carrying out internal audits.
- **Observing laws and regulations**
Observe OHS-related laws and regulations.
- **Conducting OHS activities**
 - (1) Activities to ensure safety as well as to maintain and improve health
 - (2) Activities to build awareness of traffic safety
 - (3) OHS training
 - (4) Fire and evacuation drills
- **Disclosure of OHS information**
Communicate openly with Group personnel and the local community about OHS activities and results.

Occupational Health and Safety Management System Structure





A Safe and Comfortable Work Environment

Occupational Health and Safety Education and Training

To maintain and improve the standards of activities throughout the entire Yokogawa Group and eliminate occupational accidents, we are committed to providing awareness activities for all group employees. We offer an educational program to reiterate the importance of preventing “slips, trips, and falls,” as well as “Yokogawa QHSE Month,” an awareness program related to quality, occupational health and safety and the environment. We also provide education targeting newly-appointed personnel in charge of occupational health and safety activities, etc., hold workshops in the Health and Safety Committee, conduct training sessions for ensuring safety while performing tasks at our customers’ plants, factories, etc., and give lectures on traffic safety, among others.



Evacuation drill (Yokogawa Electric)

We have introduced telework (working from home) as a measure to stop the spread of the COVID-19 pandemic. We provide training for ensuring safety and maintaining health during telework (working from home) as well as education and training at the workplace during telework periods.

Yokogawa Safety Handbook

As part of our measures to reduce and eliminate occupational accidents, we published the Yokogawa Safety Handbook. Shared by the entire Yokogawa Group, the handbook is intended as a guide to help employees ensure safety and behave in a safe manner. It comprises nine safety principles and three tips on occupational



Yokogawa Safety Handbook

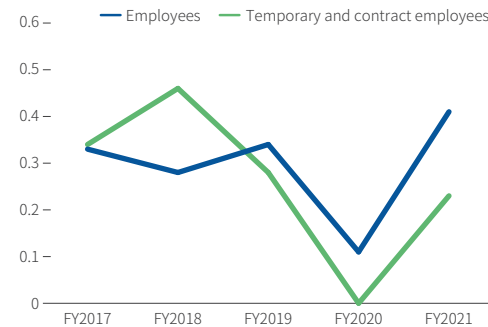
health and safety. The nine safety principles focus on reducing the risk of occupational accidents. The three tips introduce topics helpful in building and maintaining a safe workplace environment. The handbook was translated into multiple languages and distributed to all staff members of the Yokogawa Group.

Elimination and Reduction of Occupational Accidents

In fiscal year 2021, the number of occupational accidents increased due to the increase in opportunities to come to work and travel on business. In the event of an occupational accident, including cases temporary staff and contract workers are affected, we investigate the cause and implement countermeasures. On top of that, the lessons learned from accidents are shared throughout the Group to prevent the recurrence of similar accidents. In addition, to eliminate and reduce occupational accidents and improve the quality of health and safety activities, we aggregate and analyze data and information on occupational accidents on a quarterly basis

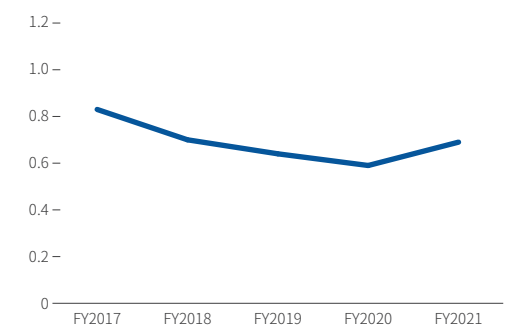
Frequency rate of lost time accidents (Yokogawa group)

Frequency rate of lost time accidents = Number of lost time accidents ÷ Aggregate number of work-hours × 1,000,000



Frequency rate of occupational accidents (Yokogawa group)

Frequency rate of occupational accidents = (Number of lost time accidents + Number of no lost time accidents) ÷ Aggregate number of work-hours × 1,000,000





Respect for Human Rights

Yokogawa Group Human Rights Policy

Yokogawa Group's corporate philosophy is "As a company, our goal is to contribute to society through broad-ranging activities in the area of measurement, control, and information." and "Individually, we aim to combine good citizenship with the courage to innovate." Based on this philosophy, the Group has supported industry and society by providing a range of solutions that help our customers improve productivity and transform their businesses. Together with our customers and partners, we continue to create new value for the future under our corporate brand slogan, "Co-innovating tomorrow".

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.

1. Compliance with Human Rights-related Laws and Regulations and Respect for the International Code of Conduct
2. Implementation of Human Rights Due Diligence
3. Yokogawa's Priority Human Rights Issues
4. Communication and Engagement

The Policy is disclosed on the Group's website.

Human Rights Management

Yokogawa Group Human Rights Policy was established with the approval of the Board of Directors. 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

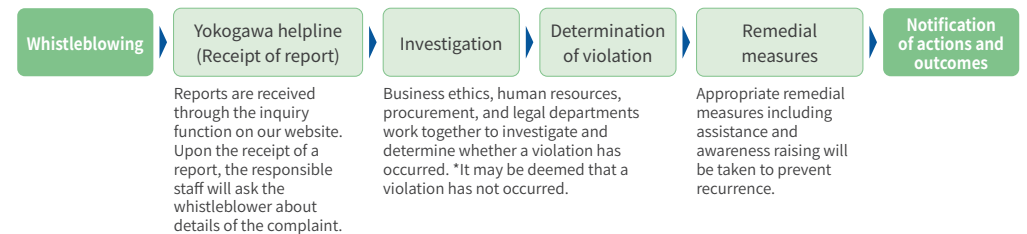
Yokogawa is committed to implementing human rights due diligence to identify, prevent, and mitigate any potential negative impacts on human rights throughout our business and the supply chain and to achieve responsibility for our activities.

We have built internal control systems for the entire Group for occupational safety and health, labor management, and purchasing and sales management, and are working to reduce risks, taking corrective actions when we identify problems.

Whistleblowing/Consultation Hotlines and Remedial Measures for Human Rights Violations

We have set up internal whistleblowing and consultation hotlines for everyone working at the Yokogawa Group to detect early and remedy human rights violations directly caused by Yokogawa or in which it may be indirectly involved, while also making a helpline available to our suppliers. Furthermore, we accept reports from and listen to the problems of our customers, business partners, community members, and other external stakeholders about human rights violations through the inquiry function of our website. People can whistleblow or seek consultation anonymously, and there are provisions in place to protect the privacy of whistleblowers and prohibit retaliation or any disadvantageous treatment. Business ethics, human resources, procurement, legal and other departments work together to investigate incidents of human rights violations reported by various stakeholders, implement appropriate remedial measures such as advice and awareness raising, and take steps to prevent recurrence.

Process flow from consultation to issue resolution on human rights issues





Respect for Human Rights

Human Rights Risk Assessment

The human rights risk assessment identifies human rights issues of high priority by confirming company policies, business activities and the operating status of the internal control systems, and interviewing relevant parties in the Group as well. The priority is determined by two perspectives: salience of the risk of creating an adverse impact through our business activities and business relationships, and Yokogawa’s ability to manage the risks.

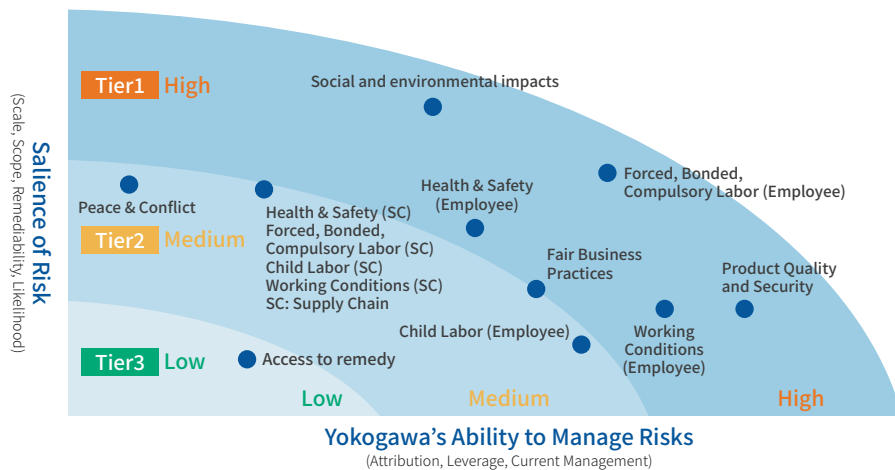
Process of identifying human rights risks



Key stakeholders subject to due diligence:

Employees (directly/indirectly employed), women and girls, children, local community members, migrant workers, indigenous peoples, supply chain workers, and others (rural people , low-income people , less-educated people)

Human Rights Risk of the Yokogawa Group



As a result of risk assessments, the following six items were identified as human rights risks with highest priority; social and environmental impacts, forced, bonded or compulsory labor

(employee), health and safety (employee), fair business practices, product quality and security, and working conditions (employee). Regarding high priority human rights risks, we will continue striving to reduce the risks, taking into account the characteristics of each country and region. If we identify a problem, we will take appropriate measures.

In fiscal year 2021, Yokogawa asked 13 of its own manufacturing factories to complete the self-assessment questionnaire (SAQ) on matters such as forced, bonded or compulsory labor, health and safety, and working conditions. Although it was found that none of the 13 factories were exposed to high risks requiring countermeasures, we will continue to communicate with them to reduce the risk of human rights violations. To reduce the risk of human rights violations in the supply chain, we also ask our business partners to carry out the SAQ on environmental conservation and human rights at their facilities and assessed their responses, thereby maintaining communication with the 17 high-risk (SAQ score less than 50%) facilities to improve scores toward lower risks.

Major Human Rights Initiatives in fiscal year 2021

- **Human rights risk assessment activities**
We have asked our own manufacturing factories to complete the SAQ on matters such as "forced, bonded or compulsory labor," "health and safety," "working conditions," and other issues.
- **Human Rights Due Diligence for important business partners**
We have selected business facilities of our business partners based on experts’ knowledge and industry assessment and introduced Human Rights Due Diligence using the SAQ by business partners.
- **Human rights education and awareness raising for the Group employees**
We have provided education and awareness raising regarding respect for human rights for all people working at Yokogawa to understand and comply with the Human Rights Policy. We have made continuous improvements, such as making educational materials available in several languages (English, Spanish, Portuguese, and Japanese) to further spread education and awareness and revising materials based on feedback from participants.
- **Whistleblowing and consultation hotlines and remedial measures for human rights violations**
We have established whistleblowing and consultation hotlines for employees and a helpline for suppliers to detect early and remedy human rights violations. To make transparent the response process after receiving whistleblowing reports, we have disclosed the process flow from consultation to issue resolution on human rights issues.



Community Engagement

Yokogawa strives for harmonious co-existence with local communities as a good citizen, recognizing that companies are also members of society. We not only contribute to society through our businesses but also promote a wide range of local contribution activities and cooperate to achieve common regional and social goals in all of the countries and regions in which we do business, thereby contributing to their progress.

We also assist our employees in their own participation in local contribution activities as good citizens and provide volunteer programs in which employees are able to make the most of their diverse skills and capabilities, including local human resources development and environmental conservation activities in local communities.

Policy for Corporate Citizenship Activities

Based on the Yokogawa Philosophy and the Yokogawa Group Code of Conduct, we engage in corporate citizenship activities by prioritizing fields related to our core business.

Priority areas

- Regions in which we conduct business
- Our business fields
- Large-scale disasters
- Contribution to social progress

corporate citizenship activities that involve donations and expenditures by clarifying their resolution/approval procedures and standards.

Corporate Citizenship Activities

Yokogawa's corporate citizenship activities for fiscal year 2021 took the form of financial assistance (199.45 million yen), donations of goods and the opening of its facilities to the public (equivalent to 12.71 million yen), and support activities by its employees (equivalent to 18.73 million yen).

When classified according to SDGs, our activities related to Goal 4, promotion of education, were the largest in number of all of the corporate citizenship activities in which we are engaged.

Our activities contribute to 15 of the 17 SDGs.

Guidelines for Corporate Citizenship Activities

Yokogawa Group has established its Guidelines for Corporate Citizenship Activities and promotes its corporate citizenship activities accordingly. We ensure the transparency of our



Children from a Red Cross orphanage visited the Yokogawa Nigeria office for social studies



Supporting an orphanage in partnership with the Taiwan Fund for Children and Families (TFCF)



Community cleanup at the Komine Factory (Akiruno City)



Major Corporate Citizenship Activities and Contribution to SDGs in fiscal year 2021

Goal 1. No poverty

- Providing aid in the form of clothes, livelihood support and assistance for school supplies (Japan, China, USA, and South Korea)

Goal 2. Zero hunger

- Providing meals and livelihood support (Singapore, India, and South Korea)

Goal 3. Good health and well-being

- Supporting cultural events (Japan)
- Supporting activities of sports organizations and events (Japan, Malaysia, Australia, and Netherlands)
- Supporting activities to enhance maternal and child health (Japan, Cambodia, and Myanmar)
- Giving support to low-income people and people with disabilities (Japan, India, Taiwan, and China)

- Visiting and supporting facilities for the elderly (Malaysia)

- Blood donation activities and donations to medical institutions (Japan, Philippines, India, Taiwan, USA, and Bahrain)

- Disaster relief and support (flooding and typhoons) (Malaysia)

- Contributions and donations to support COVID-19 control measures (Singapore, Vietnam, India, and UK)

Goal 4. Quality education

- Supporting community education programs and education activities (Japan, Singapore, Vietnam, China, India, South Korea, Netherlands, Germany, UK, Scotland, Italy, Spain, Portugal, Austria, Croatia, Poland, Norway, Russia, USA, Canada, Mexico, Brazil, Peru, Paraguay, UAE, Saudi Arabia, Qatar, and South Africa)

Goal 5. Gender equality

- Supporting the empowerment of women (Japan and Australia)

Goal 6. Clean water and sanitation

- Cleaning rivers and supporting water supply (Japan, China, and Netherlands)

Goal 8. Decent work and economic growth

- Providing procurement-related tools (Japan)

Goal 10. Reduced inequalities

- Commemorative ceremony for honoring indigenous peoples (Australia)

Goal 11. Sustainable cities and communities

- Supporting disaster-affected areas (Philippines, Germany, and Turkey)
- Local volunteer activities (Japan)
- Contribution to community events (Vietnam)

Goal 12. Responsible consumption and production

- Utilization of waste materials (Thailand)
- Supporting reuse of plastic bottles (Thailand)

Goal 13. Climate action

- Tree-planting activities (Japan and Russia)

Goal 14. Life below water

- Activities to reduce plastic waste (Japan and Bahrain)

Goal 16. Peace, justice and strong institutions

- Donations to Ukraine (Netherlands)

Goal 17. Partnerships for achieving the goals

- Cooperation with external organizations (Japan, China, and South Korea)



Environment

Climate change and environmental problems are feared to affect not only business but the very survival of humanity.

Yokogawa is proactively working to protect the Earth's environment.

This chapter introduces our initiatives for environmental protection.

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Environmental Management

Environmental Policy

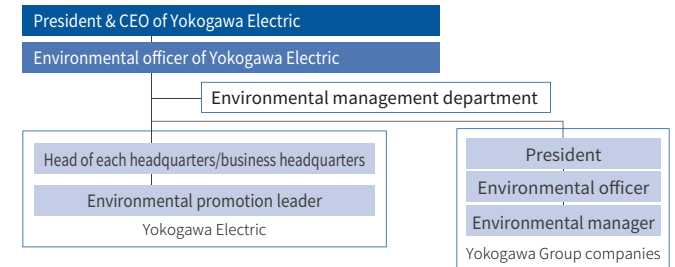
In accordance with Yokogawa's corporate philosophy "contribute to the realization of a sustainable society through broad-ranging activities in the areas of measurement, control, and information", we will promote environmental preservation activities to help realize a sustainable society and try to achieve our three goals for 2050.

- We will: Establish an environment management system, clarify roles, authorities and responsibilities, and promote environmental preservation activities.
- Prevent pollution by observing laws and regulations and, if necessary, setting voluntary standards.
- Promote environmental conservation by tackling environmental issues such as climate change, biodiversity, and use of resources and by setting environmental targets.
 - (1) Pursue resource recycling management by endeavoring to save, reuse, and recycle resources, conserve energy, and prevent global warming, while reducing the risks of environmental pollution by minimizing the substances having a negative impact on the environment in all operations.
 - (2) Develop and produce environmentally friendly products by evaluating the environmental impact throughout the product lifecycle from material procurement, manufacturing, distribution, and use to disposal.
 - (3) Provide society with higher-value-added solutions and services that contribute to global environmental conservation through measurement, control, and information technologies.
 - (4) Strive to co-exist with society as a good corporate citizen by participating in environmental conservation activities and encouraging employees to take part in voluntary activities.
- Provide all Yokogawa Group personnel with the education and training necessary to pursue environmental conservation activities.
- Disclose relevant information and promote open communications with Yokogawa Group personnel, customers, shareholders, members of the local community, and business partners to deepen and cocreate environmental conservation actions and initiatives.



- Make continual improvements on the Yokogawa Group environmental management system by evaluating environmental performance and conducting audits on a regular basis.

Environmental promotion structure



Promotion Structure

The Yokogawa Group's promotion structure for environmental activities is managed by the environmental officer of Yokogawa Electric. The structure promotes the Group's environmental conservation activities and preventive measures against global warming.

Environmental Management System

The Yokogawa Group is implementing an environmental management system in the Group companies to ensure full compliance with the laws, regulations, and agreements for the prevention of environmental pollution. Moreover, we are working to reduce the impact on the environment by means such as saving energy and transitioning to alternative technologies with smaller environmental footprint.

Yokogawa has acquired ISO 14001 certification at its major offices and manufacturing sites as part of its effort to improve the environmental management system.

Internal Audits

Internal audits for ISO 14001 are conducted at least once a year.

Annual Audits

Regular audits (renewal audit or surveillance) are conducted once a year at each ISO 14001-certified Group company by a certifying organization in order to maintain ISO 14001 certification.

ISO 14001 Certification at Yokogawa Group

The Yokogawa Group has achieved ISO 14001 certification primarily at its major offices and manufacturing sites in and outside Japan.

[See our website for our certification status.](#)



Environmental Management

Environmentally Friendly Design

Yokogawa actively develops environmentally friendly products through the implementation of its own strict standards of design and assessment for long-term usability, energy-saving performance and other aspects. New products are evaluated for energy consumption as well as the emission of carbon dioxide (CO₂), nitrogen oxide (NO_x) and sulfur oxide (SO_x) based on our "Lifecycle Assessment (LCA) standards". Some of the evaluated products bear the LCA label, which shows the LCA results.

(1) Environmental Assessment Standards for Product Design

We have established assessment standards in eight areas: ease of recycling and treatment, resource conservation, energy conservation, long-term usability, ease of collection and transport, safety and environmental protectiveness, information disclosure, and packaging. These standards are used in conducting assessments during each inspection (initial design, intermediate design, and final design).

(2) Lifecycle Assessment (LCA) Standards

The LCA standards are used for preliminary assessments of energy use, CO₂ emissions, NO_x emissions, SO_x emissions, and the like throughout the lifecycle of a product. These standards are used in conducting assessments during each inspection (initial design, intermediary design, and final design).

(3) Environmentally Friendly Product Design Guidelines

These guidelines state for long-life design, energy-saving design, resource-saving design, design considering recycling and disposal, design considering processing and assembly, and the guideline for selecting materials and components.

(4) Management criteria for hazardous substances contained in products

Yokogawa has established chemical substance management categories to be the criteria for selecting environmentally friendly components and materials in the design stage.

Banned Substance 1: Substances globally prohibited for use in products

Banned Substance 2: Substances nationally/regionally prohibited for use in products

Banned Substance 3: Substances prohibited for use in products for specific uses

Controlled substance: Substances whose content should be known and notified

(5) Recycled Product Design Standards

These standards encourage the three Rs: the reduction of waste, the reuse, and recycling of used products.

(6) Energy-Saving Design Guidelines

These guidelines state the matters to be ensured in energy-saving design in product use and manufacturing processes.

LCA Label

Yokogawa began to conduct the lifecycle assessment (LCA) in 1999 in the design phase of all new products as part of efforts to minimize our products' environmental impact. Some of the results of the LCA are disclosed on our website. When LCA data is disclosed for a product, the applicable product is "LCA labeled" in the product webpage and/or sales brochure. This corresponds to Type 2 environmental labelling as stipulated by ISO 14021.



■ Concept/Implementation of the LCA

Yokogawa has set its unique LCA standards based on JIS Q 14040 "Environmental management - Life cycle assessment - Principles and framework." We compare a new product with our previous product for assessment purposes. The results of the LCA of the previous product are multiplied by the "functional factor" to compare the environmental impacts based on the equivalent functionality of the new product. When the results of the LCA on the previous products clearly suggest how these products would impact the environment, we may only conduct LCA on the elements significantly affecting the environmental impact.

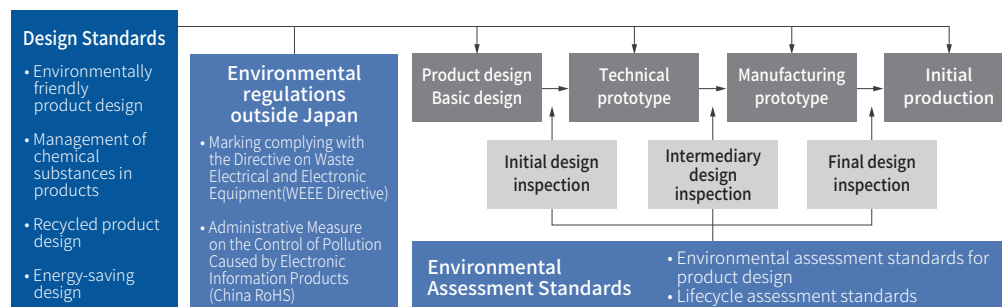
■ Requirements for LCA Labeling

A product will be LCA-labeled if it meets all the requirements described below:

1. Lifecycle assessment has been conducted according to Yokogawa's engineering specifications.
2. The results of lifecycle assessment are disclosed on the Yokogawa website according to the company's internal rules.

[▶ See our website for LCA-labeled products.](#)

Environmentally Friendly Design and Environmental Assessment Standards





Environmental Practices

Data of Environmental Practices

Overview of Environmental Impact

Yokogawa calculates the eco-balance of its overall business activities, or the annual volume of the energy and material inputs for its business activities (including manufacturing, sales, and service) as well as their annual output of waste and other substances into the air and water. Analysis of the ecobalance helps us effectively use resources, raise energy efficiency, and improve the waste recycling rate.

Compliance

In fiscal year 2021 Yokogawa continued its efforts to ensure full compliance with environmental laws, regulations, agreements, and other requirements. As a result, Yokogawa committed no major violations and faced no fines or other penalties resulting from such violations.

Conserving Water and Soil

Yokogawa has been conducting soil and water surveys at former plant sites in accordance with its proprietary control standards since before the Japan's Soil Contamination Countermeasures Act came into effect.

Awareness Programs

To raise employee awareness about the environment, awareness programs are offered to all employees of the Yokogawa Group, including e-learning courses on quality, the environment, and safety, films with environmental themes, and lectures.

Eco-Balance (Annual Input and Output)

Type of Environmental Footprint		FY2021	
Energy	Total Energy	1,387TJ	
	Power	Purchased power	120,196MWh
		Self-generated(Solar)	114MWh
	Petroleum	Light oil	356KL
		Gasoline	2,066KL
		Kerosene	9KL
	Gas	City gas	2,136kNm ³
LPG		355t	
Heat		106GJ	
Water	Utility water	290K m ³	
	Ground water	135K m ³	
Substances	Paper	200t	
	Hydrogen fluoride and its water-soluble salts	1.2t	
	Ferric chloride	12.6t	
	Hydrazine	1.4t	

Type of Environmental Footprint		FY2021	
Atmosphere	Greenhouse gas (GHG)	70,486t-CO ₂ e	
	NOx	4.0t	
	SOx	0.2t	
Water	Industrial wastewater	95K m ³	
	General wastewater	302K m ³	
Waste	Non-hazardous	Recycling	3,142t
		Incineration	434t
		Landfilling	333t
	Hazardous	Recycling	708t
		Incineration	75t
		Landfilling	0t

Environmental Accounting

In accordance with the Ministry of the Environment's Environmental Accounting Guidelines 2005, Yokogawa calculates the costs of its environmental activities and their economic impact.

Environmental Conservation Costs (FY2021) (Unit: millions of yen)

Category	Item	Main Initiative	Capital Investment	Related Costs
Costs for reducing environmental impact of factories (areas of operation)	Pollution prevention costs	Monitoring and measurement	19.7	60.6
	Environmental conservation costs	Energy savings	669.5	648.5
	Resource recycling costs	Waste reduction, water conservation	1.1	120.1
Costs for reducing environmental impact of procurement and logistics (upstream and downstream costs)		Green procurement	0.0	6.4
EMS maintenance costs		EMS updates, education	0.0	178.0
Environmental conservation costs in community activities		Environmental events	0.0	32.7
Costs for correcting damage to the environment		Soil recovery	0.0	1.3
Total			690.3	1,047.6

*Data covers ISO 14001-certified manufacturing sites.

Effects of Environmental Conservation Measures

Category	Description of Effect	FY2020	FY2021	Increase/Decrease
Inputs	Total amount of energy consumed (TJ)	996	1,008	12
	Total amount of water withdrawal (K m ³)	405	338	-67
Global warming prevention	CO ₂ emissions (t)	49,541	47,996	-1,545
Outputs	Total amount of waste generated (t)	3,409	3,946	537

*Data covers ISO 14001-certified manufacturing sites.

Economic Effects of Environmental Conservation Measures (FY2021)

Segment	Amount
Revenue from recycling (sale of valuable resources, etc.)	107.7
Reduction in expenditures due to resource and energy savings (power, water, paper, etc.)	153.9
Total	261.6

*Data covers ISO 14001-certified manufacturing sites.



Environmental Initiatives at Business Facilities

Reduction of GHG Emissions

Undertaking Ambitious Goals

As countries around the world aim to become carbon neutral by 2050, Yokogawa has set a new ambitious long-term goal of reducing GHG emissions (Scope 1 and 2) to net zero by fiscal year 2040. In addition, as a mid-term goal, we also have decided to reduce GHG emissions 50% from fiscal year 2019 by fiscal year 2030. These goals are aimed at limiting the temperature increase to 1.5°C above pre-industrial levels and are in line with the agreement included at the 26th UN Climate Change Conference of the Parties (COP26): “to pursue efforts to limit the temperature increase to 1.5°C.” Furthermore, we have set a goal of reducing GHG emissions in the supply chain (Scope 3) by 30% from fiscal year 2019, targeting emissions from purchased goods and services (Category 1) and emissions from the use of sold products (Category 11), which account for more than 90% of Scope 3 emissions. Discussions have begun on measures to realize this goal.

Applying for SBTi* Validation

The above goals satisfy the requirements of GHG reduction targets consistent with the levels required by the Paris Agreement adopted in 2015 that are promoted by the Science Based Targets initiative (SBTi). In fiscal year 2021, Yokogawa made commitments and submitted a formal application for SBTi validation of those commitments. We steadily carry out plans to achieve our goals.

* Science Based Targets

Introducing Internal Carbon Pricing (ICP)

To efficiently and rationally implement investments and measures aimed at achieving carbon neutrality within the Group, we introduced an internal carbon pricing (ICP) system in fiscal year 2022. We convert the expected changes in GHG emissions into monetary terms when considering capital investment and planning to adopt renewable energy, and incorporate them in our financial decisions. In this way, we will make decisions in light of the impact of GHG emissions.

In fiscal year 2022, ICP start to be applied to contracts for electricity procured from renewable energy sources and capital investment in utilities and production equipment. Furthermore, we continue discussions at the Sustainability Committee with the aim of establishing the scope of application and the optimal price.

Metric **GHG Emission**

Performance and Targets

Scope1,2 (base year FY2019)
100% reduction (FY2040 Target)
50% reduction (FY2030 Target)
10% reduction (FY2023 Target)
10.5% reduction (FY2021 Performance)

Scope3* (base year FY2019)
30% reduction (FY2030 Target)
10% reduction (FY2023 Target)
12.7% reduction (FY2021 Performance)

* Emissions from purchased products/services (Category1) and emissions from use of sold products (Category11)



GHG Emission Reduction Performance for fiscal year 2021

The Yokogawa group’s GHG emissions (Scope 1 and 2) in fiscal year 2021 were reduced by approximately 10.5% compared to fiscal year 2019, the base year. This result exceeds an average annual reduction of 4.6%, a required level to achieve a 50% reduction by fiscal year 2030.

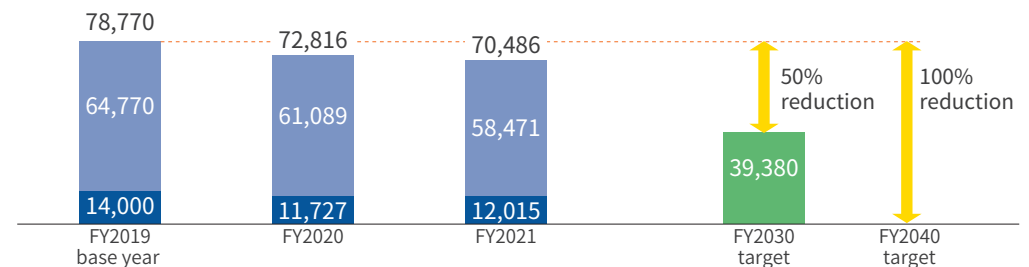
The main cause of the Group’s GHG emissions is indirect emissions from electricity consumption, which account for more than 80% of all Scope 1 and 2 emissions. By focusing on curbing this main source and implementing energy reduction measures at each Group company, we were able to keep energy consumption to about the same level as in the previous year despite the expansion of our business from the previous year.

Furthermore, we were able to reduce Scope 2 emissions by 4% year on year through an accelerated switch to electricity from renewable energy sources.

On the other hand, the amount of gasoline used by Company-owned vehicles and gas consumption in Scope 1 increased by about 2% year on year, partly because COVID-19 regulations were slightly relaxed compared to fiscal year 2020. Although the above amount still represents a 14% reduction from fiscal year 2019, to further reduce emissions in the future, we will systematically replace gasoline vehicles with EVs and FCVs and adopt carbon-neutral gas, which is expected to penetrate the market.

In Scope 3, we are planning and implementing GHG reduction measures to achieve our targets. In fiscal year 2021, the sales ratio of current products with relatively low GHG emissions increased. As a result, emissions from the use of sold products (Category 11), which account for 60% of Scope 3 emissions, decreased, resulting in total Scope 3 reduction of 2% year on year.

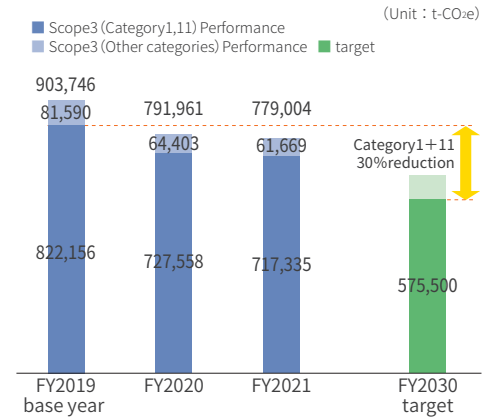
GHG Emission Reduction Performance and Targets (Scope1,2) ■ Scope1 performance ■ Scope2 performance ■ target (Unit : t-CO₂e)



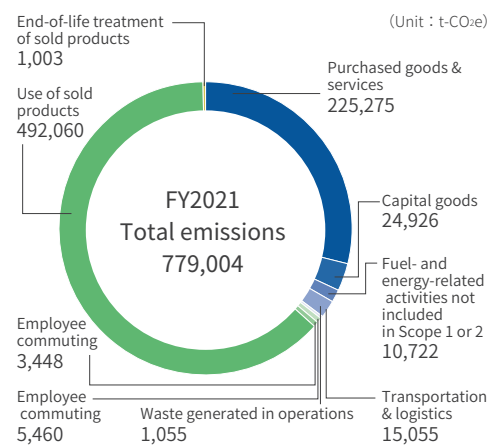


Environmental Initiatives at Business Facilities

GHG Emission Reduction Performance and Targets (Scope 3)



GHG Emissions in Our Supply Chain (Scope 3)



Initiatives for GHG Reduction

Creation of a Roadmap:

To implement the PDCA cycle for carbon-neutral measures over many years, each Group company was asked to formulate a carbon-neutral plan, and a Group-wide roadmap was created by aggregating those plans.

Using this roadmap as a master plan for Company-wide GHG reduction, we will visualize what each company will do and how much emissions will be reduced each year. In addition, this roadmap will be updated to reflect trends in energy markets around the world.

GHG Reduction Activities

Our efforts to reduce GHG emissions are twofold: reduction of energy consumption and adoption of renewable energy.

Initiatives to Reduce GHG Emissions (Scope 3):

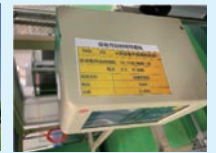
To reduce emissions from the use of sold products (Category 11), the departments in charge of each product have considered energy-saving structures when changing the design of existing products or developing new products. Efforts are being expanded to include, for example, feasibility discussions with suppliers of resale goods.

Example of Energy Consumption Reduction

Our facility in Suzhou, China (Yokogawa Electric China Co., Ltd.; right photograph) is actively reducing energy consumption with an aim to cut down both environmental impact and production costs. Activities carried out in fiscal year 2021 include awareness-raising among employees on carbon neutrality and expanding the activity to all employees. As a result of each department creating energy-saving management rules and efficiently using production facilities and air conditioning, an 8% year on year reduction in CO₂ emissions was achieved. The following are some of the activities.



Yokogawa Electric China Co., Ltd.



Energy-saving label that describes the operation method and the responsible person

It is clearly indicated whether the equipment requires continuous operation or only during production, and an energy-saving label (left photo) that describes the operation method and the responsible person is displayed on the equipment. Workers confirm compliance with the rules daily, and managers of each department also check the operation of the rules on an irregular basis to ensure compliance.

We also continue to improve our production procedures and make our equipment more efficient. By improving the operation of the coating/drying furnace and shortening the operating time by about two hours per day, electricity consumption per product was reduced about 50%. Replacing low-efficiency motors used in production equipment with high-efficiency ones also reduced about 10 MWh/year.

As for utilities that control production condition, we reviewed the operational settings of air conditioners and compressors, introduced high-efficiency controls, and thoroughly cut down losses by investigating and repairing air leaks. These efforts resulted in a significant reduction of about 50 MWh/year.

At the Suzhou office, we encourage employees to share their energy conservation ideas in order to facilitate continuous improvement, and employees who propose excellent ideas are rewarded. (right photograph). We are working toward carbon neutrality by energizing activities through such efforts.



Example of Renewable Energy Adoption

We have also started to switch to renewable power globally. Examples from fiscal year 2021 include our investment in DIGITAL GRID Corporation, a new electric power company, as well as a switch to renewable power at the head office in Japan and Kanazawa office, which achieved a 50% reduction in GHG (Scope 2). At the same time, Group companies in other countries such as Germany, the United States, Singapore, China, and South Korea are also promoting the adoption of renewable energy and are taking systematic steps to become carbon neutral.



Yokogawa group companies that adopted renewable energy

As it is difficult to reduce GHG emissions (Scope 3) in a short period of time, we aim to achieve our goals by formulating plans at an early stage.

Yokogawa continue to make efforts for the realization of a post-global warming society by reducing energy consumption, promoting the spread of renewable energy, and advancing reduction measures through the supply chain.



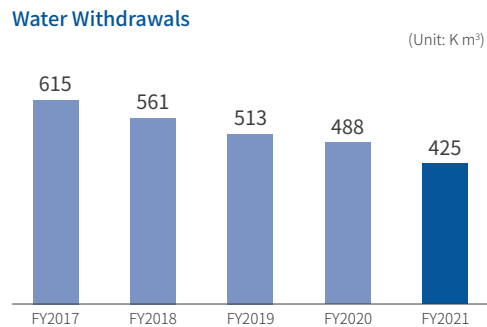
Metric Water intake at business sites

Performance and Targets Water intake at business sites (base year FY2019)
 4% reduction (FY2023 Target)
 17% reduction (FY2021 Performance)

Environmental Initiatives at Business Facilities

Water Resource Conservation

Yokogawa is working to reduce the amount of water usage by improving our production processes and introducing water-saving systems to our office water supplies. 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 devices, we will keep our water withdrawal below the target level while our water demand is likely to increase due to the upturn of office attendance rate and production volume.



Response to Water Risks

In regions where securing water resource is a serious challenge, Yokogawa is promoting efforts related to water resource through measures such as monitoring water usage and securing alternative water resources.

■ Yokogawa Electric Asia, Yokogawa Engineering Asia, Yokogawa Electric International (Singapore)

While Singapore has continued its efforts to ensure water self-sufficiency, it is expected that its total water needs will increase going forward.

Yokogawa's business site in Singapore is carrying out the following initiatives to maintain water resources and utilize alternatives:

- Comply with the guidelines set by PUB (Public Utilities Board) to avoid excess use of water.
- Use NEWater, a recycled water resource, for air conditioning systems.
- Install water-saving devices to washbasins and plumbing systems.
- Regularly check water consumption to find water leakage early

■ Yokogawa Middle East & Africa (Bahrain)

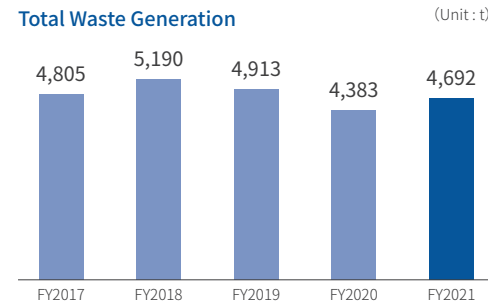
In Middle Eastern countries, water shortage is a serious problem. Yokogawa Middle East & Africa carries out the following initiatives:

- Set annual targets for reduction in water consumption per employee and manage the progress.
- Use normal tap water for non-drinking purposes
- Comply with local regulations on water protection including conservation and contamination prevention.
- Increase employee awareness of water protection.
- Inspect any water leakages during the HSE (Health, Safety, and Environment) inspection tour at all facilities and take immediate corrective and preventive measures on any detected abnormality in the water supply system.

Reduction of Waste

The Yokogawa Group is working to reduce waste by reducing, reusing, and recycling resources in our factories, offices, for example, product packaging.

The increase in fiscal year 2021 was due to temporary factors (Waste resulting from office work-style reform at the head office, increase in liquid waste from a plating line in start-up stage at a 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.



Waste sorting at the recycling center



Environmental Initiatives at Business Facilities

Chemical Substance Reduction

The Yokogawa Group places strict controls on chemicals that are harmful to humans and the global environment. In addition, Yokogawa is developing and introducing alternative processes in an effort to reduce chemical use and waste. Further, to comply with RoHS Directive restricting the use of certain chemicals in electrical and electronic equipment in Europe, as well as with the REACH Regulation (Registration, Evaluation, Authorization and Restriction of Chemicals), we are implementing initiatives for the reduction and proper management of such chemical substances.

PRTR Substances

The amount of substances reported under PRTR* requirements (1,000 kg/year or more handled) is shown in the table below.

*PRTR: Pollutant Release and Transfer Register. The PRTR was established to enable society as a whole to manage chemical substances through the disclosure of toxic chemical emissions data and other information.

PRTR Data (Fiscal year2021)

Factory	Substance	Amount used (kg)	Amount emitted (kg)				Amount transported (kg)	
			Air	Public water area	Soil	Landfill	Sewage system	External site
Yokogawa Manufacturing Komagane Factory	Hydrogen fluoride and its water-soluble salt	1,199	2.5	63	0	0	0	2.3
	Hydrazine	1,395	0	0	0	0	0	0
	Ferric chloride	4,927	0	0	0	0	0	0
Yokogawa Manufacturing Kofu Factory	Ferric chloride	7,708	0	0	0	0	0	0

Improving Coating Efficiency by Robotizing Solvent Coating

Yokogawa Manufacturing’s Kofu Factory has been making efforts to reduce volatile organic compounds (VOCs) by establishing elemental technologies to achieve globally uniform quality, curbing costs, and reducing coatings.

Applying robot coating used for the automobile industry and smartphones to transmitters and other devices for building an automated coating system enables a significant reduction in the amount of coatings used. By improving coating efficiency from the current 15% to 50%, we can expect a significant reduction in the amount of coatings used, thereby contributing to a lower environmental impact. Furthermore, the robotization of solvent coating can facilitate a production process that does not depend on the experience and skills of the person in charge in order to achieve globally uniform quality. We will roll out robot coating to other models and components to make further improvements.

Conserving Biodiversity

In its environmental policy, Yokogawa pledges its commitment to biodiversity issues. Based on the Aichi Goal,* we also promote activities to conserve biodiversity.

* An individual goal established by COP10 (10th Conference of Parties to the Convention on Biological Diversity) in 2010 to be achieved by the global community in the field of biodiversity by 2020

Biodiversity Policy

Biodiversity is a foundation of sustainability in society. Together with our stakeholders, Yokogawa engages in action to conserve biodiversity while taking regional characteristics into account. We will spare no effort to reduce any negative impacts resulting from our various business activities to improve biodiversity and to contribute to creating a better environment in local communities.

Biodiversity Action Guidelines

- **Cooperation with the local community to enhance local value**
Take action in cooperation with government agencies and NPOs to acknowledge and enhance local value.
- **Providing employees with educational opportunities and raising awareness**
Raise awareness of biodiversity among employees by offering them relevant seminars and event.
- **Considering biodiversity conservation within business facilities**
Operate business facilities while giving consideration to the ecosystem by, for example, managing their green areas.

Our Biodiversity Conservation Activities in the Middle East

The largest bodies of water on earth are the oceans. As a habitat for a wide variety of animals and plants, all citizens have a responsibility to keep the oceans and beaches clean so that marine life can thrive far into the future.

Yokogawa Middle East & Africa in Bahrain participated in a beach cleanup day on December 11, 2021, where about 40 employees and 20 of their family members, cleaned up beaches.





Governance

Yokogawa conducts business based on our corporate philosophy and aims to achieve sustainable growth and improve mid- to long-term corporate value.

This chapter introduces our governance and risk management system which are essential foundations of our corporate activities as well as our initiatives for compliance and supply chain management.

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Sustainability Governance

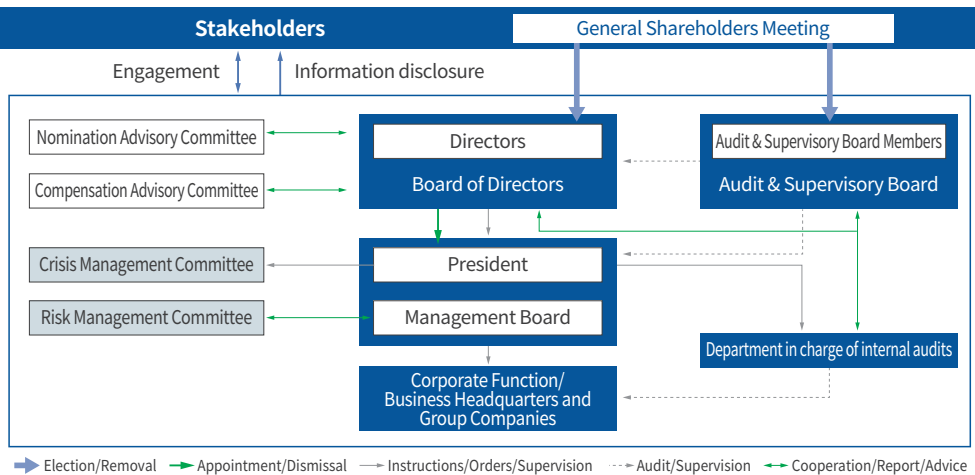
Yokogawa regards sustainability as one of its key management issues and is continuously working on the improvement of governance. Moreover, with the goals of achieving sustainable growth and earning the trust of every stakeholder through continuing contributions to society and the environment in accordance with the AG2023 mid-term business plan, we monitor sustainability indicators and priority management risks.

Corporate Governance Promoting Sustainability

Basic Policy on Corporate Governance

Yokogawa established Yokogawa's Purpose and its corporate philosophy as the basic policies related to its sustainability initiatives and strives to achieve sustainable growth for the company and to increase mid- and long-term corporate value. To maximize its corporate value, the Group has formulated the Yokogawa Corporate Governance Guidelines which serve as the basic policy for continually working on corporate governance and has disclosed them on its website. Following the revision of Corporate Governance Code which came into effect in June 2021, we will continue to strengthen our efforts to improve corporate governance.

Corporate Governance Structure



Board of Directors

The Board of Directors meets once a month in principle with the goals of achieving sustainable growth and increasing the corporate value of the Group over the mid- and long-term as a decision-making body related to management. To achieve these goals, the Board of Directors strives to improve profit-earning capability and capital efficiency, and sets the general direction of the Group, including its corporate strategies. In addition to monitoring and supervising the execution

of business by management, including the Directors and officers, the Board of Directors develops provisions related to Directors' execution of their duties, and it has established a framework to ensure it fulfills its responsibility to supervise the execution of business.

Main Sustainability-Related Agenda of the Board of Directors

- Progress of sustainability strategy and mid- and long-term target
- Sustainability committee report
- Disclosure of sustainability information based on TCFD.
- Yokogawa Group's priority management risks
- Efforts to address human rights issues

Management Board

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, which meets once a month in principle, is required to report its resolutions and other matters to the Board of Directors.

Audit & Supervisory Board

To ensure the Group's sustainable growth and corporate soundness, the Audit & Supervisory Board, which meets once a month in principle, makes appropriate decisions and expresses its opinions from an independent and objective standpoint. Moreover, based on laws and regulations as well as the Auditing Standards for Audit & Supervisory Board Members and the Rules Governing the Audit & Supervisory Board, the Audit & Supervisory Board receives reports from each Audit & Supervisory Board Member on important matters related to audits, deliberates, and passes resolutions as necessary.

Risk Management Committee

The Risk Management Committee selects significant risks whose management should be prioritized, decides the methods for monitoring them, and reports them to the Board of Directors. Respective organizational units of the Yokogawa Group perform the identification and assessment of risks, followed by the preparation and implementation of countermeasures against them. The department in charge of internal audits evaluates the effectiveness of the Yokogawa Group's risk management process and reports important findings to the Board of Directors and the Audit & Supervisory Board Members.

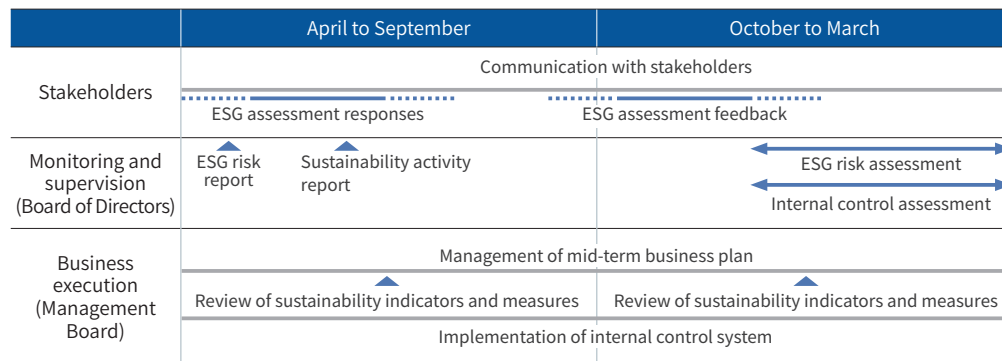


Sustainability Governance

Sustainability Management

Sustainability management is conducted as a part of the company-wide management cycle that includes the mid-term business plan, risk management and the internal control system. From the viewpoint of contributing to society and the environment and increasing corporate value, the Yokogawa Group identifies priority issues relating to sustainability, sets sustainability indicators to address these issues, and defines management cycles, which are subject to monitoring and supervision by the Board of Directors. Non-financial items are reported to the Board of Directors as a part of reports on important matters and the implementation of each management cycle, and the status of sustainability activities is also regularly reported. The Board of Directors monitors and supervises sustainability initiatives based on factors such as changes in social conditions, progress in sustainability indicators, feedback from stakeholders including ESG evaluation organizations, and ESG risk assessment results, while incorporating independent views from outside the company.

Sustainability Management Cycle



Internal Control System

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.

Sustainability Committee

The Sustainability Committee was established in fiscal year 2022 to identify priority issues from the perspectives of both corporate value and social value, and to show the mid- and long-term direction of management and stories of growing our businesses and contributing to society. The Sustainability Committee, chaired by the president and with executive officers as members, is positioned as a forum for intensive discussions on sustainability-related themes from a management perspective.

At the first Sustainability Committee meeting held in July 2022, the committee conducted a materiality analysis, then confirmed that the issues of high importance that the company must resolve and six contribution areas have not changed since AG2023 was formulated.

The thematic subcommittees (Business Subcommittee, Management Subcommittee, and Disclosure Subcommittee) have been established under the Sustainability Committee. The subcommittee held active discussions on a variety of topics, including the stories of growing our business and contributing to society, internal carbon pricing, human capital management, communication, and non-financial disclosure.

We will continue to steadily promote our sustainability strategy through the Sustainability Committee.



Risk Management

The Yokogawa Group has in place within its organizational units a risk management structure to control uncertainty affecting its corporate value, an internal control system to ensure appropriateness of the businesses and a crisis management system to respond promptly to any event that could seriously impact its operations.

Risk Management Structure

We define uncertainties that might affect the Group's corporate value (e.g., our external environment, strategies, product quality, environmental impact, crisis management, and corporate ethics) as risk. 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, we categorize and manage these uncertainties in terms of business opportunities, compliance, and crisis events.

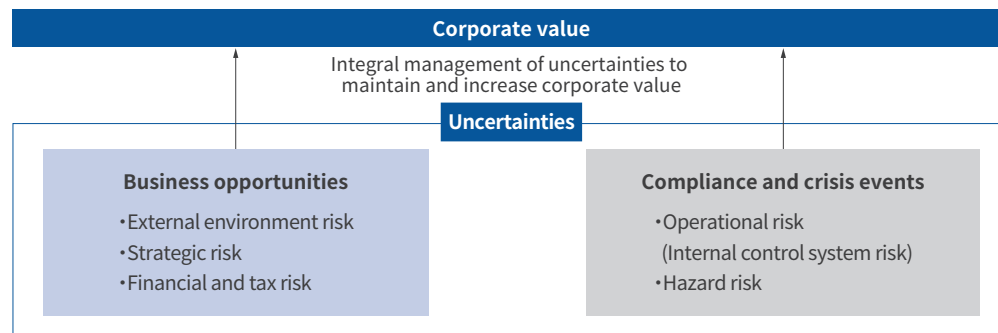
We also identify, assess and prioritize risks and establish and implement countermeasures and targets while improving and confirming the effectiveness of our countermeasures. Alongside these efforts, to realize effective risk management within the Group, we have established the Risk Management Committee chaired by the President and CEO, who is responsible for supervising all matters related to risk management.

Promoting Risk Assessment and Management

As part of their independent risk management activities, each organizational unit of the Group identifies and assesses risks, establishes countermeasures and targets, and implements these countermeasures. Moreover, each organizational unit has a risk manager and a network for the Group's risk management.

Based on risk assessments, the Risk Management Committee selects priority management risks whose management should be prioritized at the Group level. Priority management risks are determined by the Management Board and reported to the Board of Directors. In addition,

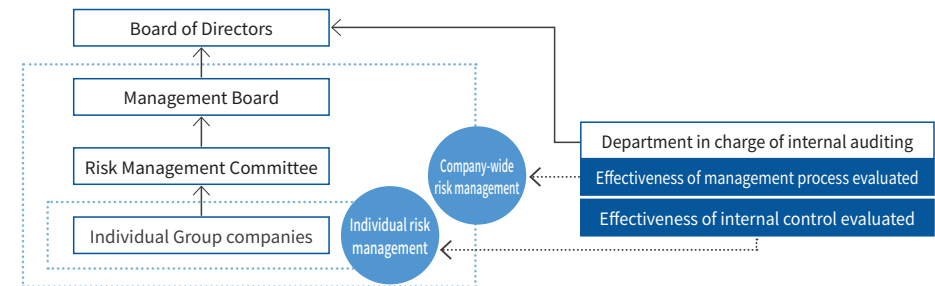
Basic Policy on Risk Management



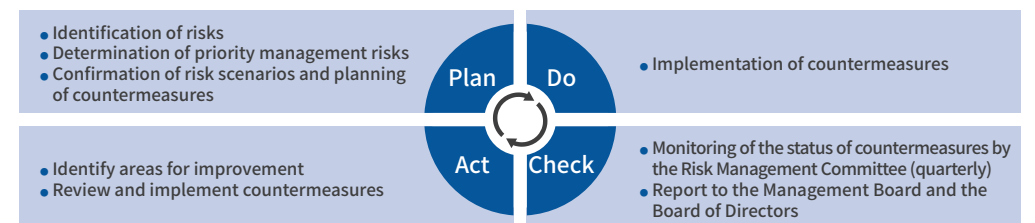
the Risk Management Committee checks countermeasures for priority management risks, the progress of those countermeasures, and the status of risks on a quarterly basis, reports them to the Management Board and the Board of Directors, and incorporates them in the selection of priority management risks for the following year.

In risk assessment, we assess the severity of risks from the perspectives of impact and likelihood of occurrence: The risks assessed include business opportunity risks, e.g. external environment and strategies including climate change, compliance and crisis event risks, such as product quality, environmental impact, health and safety, information security, crisis management, and corporate ethics (embezzlement, accounting fraud, data falsification, bribery, harassment, etc.). When we assess the impact of risks, we also take into account the social and environmental impact of risks such as human rights risks and responses to climate change, as well as financial and human aspects. We take a comprehensive approach to assessment considering both bottom-up and top-down perspectives, including changes in our management environment.

Risk Management Structure



PDCA for Risk Management





Risk Management

Escalation of the Information and Crisis Management System

In the event of a disaster, accident, or incident that could seriously impact the Yokogawa Group companies' management or endanger the lives of their employees, each Group employee must minimize the damage by taking prompt initial action and reporting to senior management. To address this issue, we have established the Yokogawa Group Crisis Reporting Guidelines, which stipulate details such as the information to be reported, as well as reporting routes and processes, and ensure that all Group employees are made aware of them. We regularly revise these guidelines and take steps to improve the escalation of information. In addition to these, we have established a Crisis Management Committee chaired by the President and CEO to ensure human safety, minimize economic losses, and fulfill our corporate social responsibilities in the event of a crisis.

Business Continuity Management (BCM)

Yokogawa's business is closely tied to social infrastructure including electricity, gas, water, and sewerage infrastructure. To continue our business activities in the event of a natural disaster such as an earthquake, windstorm and flood, or anthropogenic disaster including accidents and take action as quickly as possible to help maintain and restore social infrastructure, we developed the Business Continuity Plan (BCP).

We developed response plans and action guidelines assuming risks that could seriously impact the Group's management, such as natural disasters including a huge earthquake, windstorms, floods, or an epidemic of contagious disease. We have been collaborating with Group companies worldwide to improve these plans and guidelines. Further, to increase the effectiveness and workability of our BCP, regular training for the identification of problems is provided by members of the crisis management organization, including senior management, and business continuity management activities are undertaken to continuously improve the BCP. We have also introduced a system to promptly check employee safety and provide regular training to enhance proficiency in using the system, while also offering education on the basics of disaster prevention and BCP in case of an emergency. These activities were utilized to provide a prompt initial response to disasters including the March 2022 earthquake offshore of Fukushima Prefecture. Yokogawa will continue to review its BCP and carry out preparations and countermeasures for business continuity.

Protecting Employees Working Outside Japan from Crisis

Recently we have seen crime, terrorism, and violence occurring all over the world, including international travelers falling victim to crimes. In these circumstances, employees who are transferred to an international post or who travel abroad on business need to do more to prepare and take appropriate safety measures. To protect its employees working all over the world from crises (such as terrorism, riots, and crime), Yokogawa issues alerts. In addition, we hold seminars and provide education to help employees keep themselves safe when they are transferred to an international post or when travelling abroad on business. Yokogawa will continuously consider a variety of new measures and improve existing measures to ensure the safety of its employees.

■ Training for Protection from Terrorism and Crime

Yokogawa holds seminars on self-protection, including specific steps to take to minimize harm in the event of a terrorist attack, violence, or crime. In the seminars, we invite outside security experts to provide instruction and demonstrations both in English and Japanese, and conduct practical training involving the participation of the attendees.



Training in fiscal year 2019



Code of Conduct and Compliance

Yokogawa’s top priority is compliance and it conducts its business activities in compliance with the relevant laws, regulations, and ordinances. We respect social norms and international guidelines, and act with high ethical standards. The Yokogawa Group Code of Conduct sets out the guidelines that its employees should observe in their actions for the realization of Yokogawa’s corporate philosophy, while the Yokogawa Group Compliance Guidelines prescribe specific actions that each and every employee should take.

The Yokogawa Group Code of Conduct

The Yokogawa Group Code of Conduct sets forth guidelines for all employees of the Yokogawa Group to observe in their actions. Chapter 1 describes the Yokogawa Group’s basic policies, including the realization of its corporate philosophy, compliance with laws and regulations, respect for human rights, and contribution to the realization of a sustainable society. Chapter 2 specifies the Yokogawa Group’s ethical standards concerning the Group’s relationship with stakeholders, workers’ rights, and the responsibilities of the management team, among other things.

The full text of the Yokogawa Group Code of Conduct is on our website.

Yokogawa Group Compliance Guidelines

The Yokogawa Group Compliance Guidelines are practical guidelines that provide an easy-to-follow explanation of the Yokogawa Group Code of Conduct and describe specific actions that employees should take. The Guidelines have been prepared to educate employees and set forth the specific rules and standards that all Yokogawa Group employees should observe when they encounter ethical and legal issues in the course of their day-to-day business activities. The Guidelines have been translated into 14 languages and distributed in a booklet to the members of the manufacturing departments. Informing all Group employees of the content of the Guidelines enables Yokogawa to ensure that its corporate philosophy is embraced and upheld by each and every employee.



Yokogawa Group Compliance Guidelines



Supporting International 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, labour, the environment, and anti-corruption. We are working with our stakeholders to uphold the ten principles through efforts such as participation in Global Compact Network Japan, a local network in Japan. The Global Compact was first proposed by former Secretary-General of the UN Kofi Annan at the World Economic Forum in 1999 and was officially adopted in 2000. Participating companies are expected to practice and uphold international standards for human rights, labour, the environment, and the prevention of corruption.

President’s Commitment

The Yokogawa Group Code of Conduct sets out six basic Group policies: the realization of the Yokogawa Philosophy, compliance with laws and regulations and cooperation with society, respect for human rights, fair business practices, contribution to society and the environment, and trust-based relationships with stakeholders. Yokogawa is committed to fulfilling its fundamental corporate responsibilities, including contributing to society through its business activities and ensuring compliance. In 2009, Yokogawa approved and signed the Global Compact, an international initiative proposed by the United Nations and has been endorsing and putting into practice its ten universal principles in the areas of human rights, labour, the environment, and the prevention of corruption. The Company shares these principles with its Group companies and business partners around the world. We will continue to strive to fulfill our responsibilities as a global company that conducts business around the world.



President and CEO
Hitoshi Nara

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 that presents seven core subjects including organizational governance, human rights, labour practices, environmental responsibility, and fair operating practices.

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.



Code of Conduct and Compliance

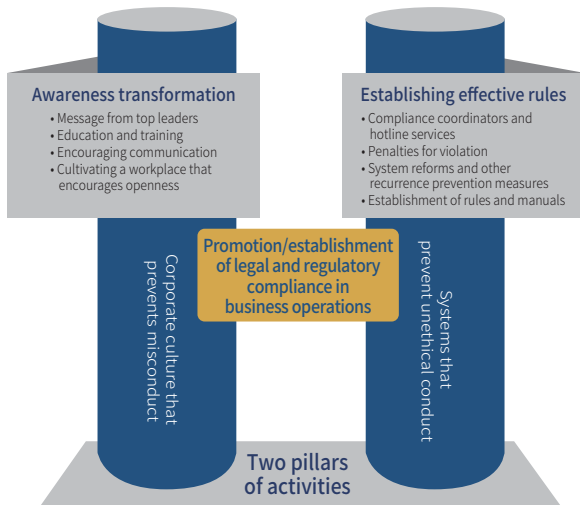
Compliance Promotion Structure

To prevent wrongdoing and scandal, Yokogawa promotes sound and transparent business activities with a corporate culture that prevents misconduct and systems that prevent unethical conduct as the pillars of our compliance activities. The Yokogawa Group aggressively promotes management practices built upon a foundation of compliance through the establishment of a business ethics department that is responsible for developing a compliance promotion structure and identifying and addressing issues pertaining to it. We have established a workplace-based compliance promotion structure in our global offices. In Japan, Yokogawa's compliance coordinators, who concurrently serve as workplace counselors, are pursuing compliance initiatives with the goal of establishing and increasing employee compliance awareness. Further, the compliance secretariat and representatives of the compliance coordinators of the individual organizations attend the regular meetings of the Compliance Committee to share information and monitor progress in compliance activities.

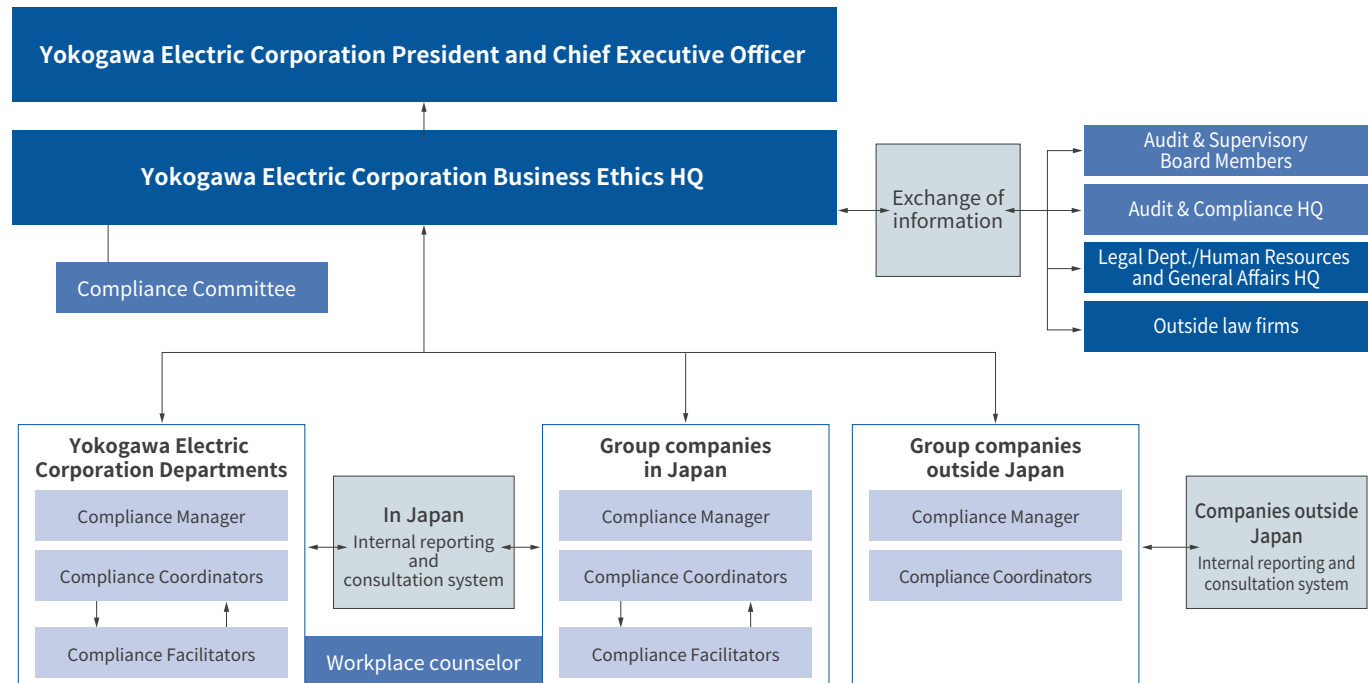
PDCA Cycle for Promoting Compliance



Approach to Compliance



Compliance Promotion Structure





Code of Conduct and Compliance

Anti-corruption Initiatives

Yokogawa is working to prevent all forms of corruption, including the abuse of power for personal gain, coercion and bribery, by prescribing within the Yokogawa Group Code of Conduct appropriate relationships with business partners, politicians, and government officials and prohibiting conflicts of interest. Specifically, we develop and implement rules such as the Yokogawa Group Compliance Guidelines and Yokogawa Group Anti-bribery and Anti-corruption Code and conduct awareness programs as part of our compliance initiatives to spread and entrench anti-corruption awareness.

■ Anti-bribery Initiatives

Yokogawa observes the bribery prevention laws and regulations of all of the countries where its Group companies conduct business activities to prevent bribery involving public servants and private citizens both at home and abroad. The Group assesses and controls bribery-related risks, and the Group companies manage these risks. We prevent bribery and ensure that business activities are fair and appropriate, by fully informing all employees of the Yokogawa Group Anti-bribery and Anti-corruption Code. Further, we have established the Yokogawa Group Sustainable Procurement Guidelines to support the prevention of bribery and are working to implement the guidelines in cooperation with our business partners. No bribery-related violations or penalties were reported in fiscal year 2021.

Measures to Prevent Anti-competitive Practices

Yokogawa considers that the observance of competition law is essential for ensuring the proper management of the Group and has set out its basic policy of fair, transparent, and free competition with competitors in the Yokogawa Group Code of Conduct. To further ensure compliance with competition law, we prescribe specific rules in the Yokogawa Group Compliance Guidelines and the Competition Compliance Code and provide in-house training about the competition law to increase employee awareness. No legal measures were taken against Yokogawa due to any anti-competitive acts, anti-trust law violations or monopolistic practices in fiscal year 2021.

Preventing Insider Trading

To prevent insider trading, we have established the Code of Conduct for the Prevention of Insider Trading in the Group Management Standards (GMS) and have included a section on the prohibition of insider trading in the Yokogawa Group Compliance Guidelines. Further, we have established a Group-wide compliance structure and provide education to thoroughly prevent insider trading. The officers or employees of the Group companies who intend to buy and sell

Yokogawa Electric stock must follow the prior approval procedure through the person in charge of insider trading prevention at their company. In addition, the following individuals are subject to a blanket prohibition regarding the buying and selling of the Company's stock from the last day of each quarter to the date of the announcement of the financial results for the quarter.

1. Officers and managers of Yokogawa Electric Corporation, Yokogawa Solution Service, Yokogawa Manufacturing, and Yokogawa Test & Measurement
2. People directly involved in the preparation and announcement of quarterly results in Yokogawa Electric Corporation and the Group companies in Japan

Tax Policy

In light of the globalization of its business operations, Yokogawa believes it can fulfill its corporate social responsibilities and help realize a sustainable economy by properly meeting its tax obligations in the countries and regions where Yokogawa conducts business activities. Yokogawa takes the following actions in its tax accounting practices to ensure appropriate tax risk management:

1. Placing the highest priority on complying with the tax laws and regulations of each country, and appropriately paying taxes without applying preferential tax treatment by interpreting beyond legislative intent.
2. Implementing appropriate tax-related accounting processes and other related measures
3. Establishing a tax governance structure and striving to increase tax compliance awareness
4. Responsibly performing tax duties in compliance with international tax standards such as the OECD Transfer Pricing Guidelines and the Action Plan on Base Erosion and Profit Shifting (BEPS)
5. Conducting transactions with non-Japanese affiliates on an arm's length basis by properly allocating profit for their contributions in accordance with the roles and risk analysis of the affiliate
6. Neither intentionally avoiding taxes by the act without any substance nor resorting to any abusive tax planning by utilizing low-tax jurisdictions.
7. Not utilizing any tax haven for tax avoidance purposes. Appropriately filling and paying taxes in case becoming subject to the CFC rules by effective tax rate reductions, legislative changes, etc.
8. Optimizing tax expenses by means such as avoiding double taxation and utilizing appropriate tax incentives
9. Reducing tax risk by obtaining advice from external professionals when there is uncertainty regarding the application or interpretation of tax laws and regulations
10. Building, maintaining, and developing sincere, sound, and cooperative relationships with the tax authorities of respective countries.



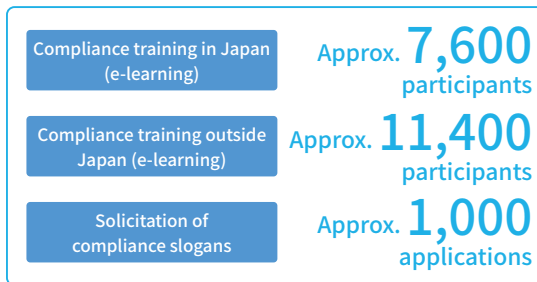
Code of Conduct and Compliance

Measures to Counter Anti-social Forces

The entire Yokogawa Group is taking steps to eliminate antisocial forces and describes in the Yokogawa Group Compliance Guidelines its responses to anti-social forces that threaten social order and safety. In compliance with the Tokyo Metropolitan Ordinance for Eliminating the Organized Crime Groups, we include in our business contracts clauses concerning the elimination of anti-social forces and sign a memorandum on the elimination of anti-social forces with business partners, contractors, and customers.

Awareness Activities

Yokogawa offers a broad range of awareness programs such as compliance education and training, with the aim of fostering employees' awareness and understanding of compliance and a corporate culture that promotes fair, transparent, and open business practices with high ethical standards.



Compliance Training and Education

Compliance training was conducted again in fiscal year 2021 to spread and establish compliance awareness in all Group companies. In Japan, in addition to training for employees and officers, there was an array of opportunities to receive role-specific training, including at the time they join the company, when they are promoted to a managerial position, and when they are transferred to an international post. Due to the COVID-19 pandemic, we have been providing training in the form of e-learning or webinars. Overseas Group companies carry out necessary training by e-learning according to the issues and challenges faced by the individual company.

Compliance Newsletter

We published Compliance Newsletter six times during fiscal year 2021 to communicate information about our corporate culture, recent business scandals, and other timely topics. The Compliance Newsletter helps improve employee compliance awareness through the internal publication of information for the entire Group.

Compliance Week

The Compliance Week campaign is conducted to ensure that the compliance mindset is embraced and upheld. In fiscal year 2021, we provided learning (e-learning) courses on the theme of "Compliance and SDGs" for all of the employees of Yokogawa Group companies, solicited compliance slogans, and showcased them.

Compliance Awareness Survey

In fiscal year 2021, we conducted an engagement survey for all employees of the Yokogawa Group to understand the current situation and improve employee engagement, and employees' compliance awareness was measured in the survey. The survey results showed a score higher than the benchmark of companies in the global high-tech industry in the compliance category and an improvement from the previous results for fiscal year 2019, highlighting the high level of compliance awareness within the Group.

Contact for Whistleblowing and Consulting

Yokogawa has a contact for whistleblowing and consulting for the early detection and prevention of compliance issues. Employees can blow the whistle or consult on compliance issues anonymously or by telling their name by email, over the telephone, in writing or by any other means in their own language.

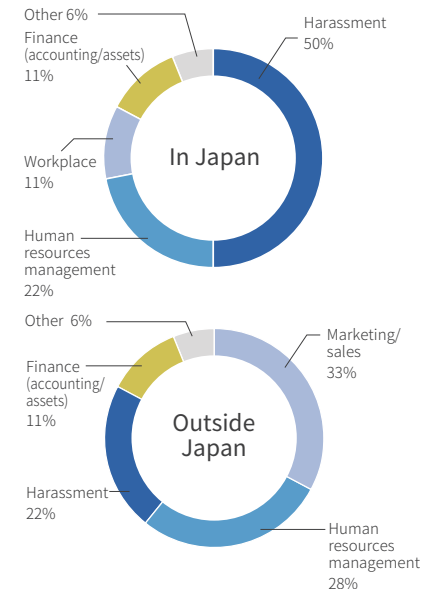
If any issue is reported and is likely to violate the Yokogawa Group Code of Conduct and/or be a compliance issue, then, the department in charge will investigate and try to resolve the situation in cooperation with a person in charge of the investigation appointed under the internal reporting and consultation rules, the human resources department, the legal affairs department, and the external lawyer in accordance with the investigation manual. We protect the privacy of whistleblowers and do not ever tolerate retaliation or any disadvantageous treatment of them.

In fiscal year 2021, about 70% of the issues that were reported or people sought consultation about pertained to harassments and human resources management at domestic sites. At overseas Group companies, the issues were related to unjust sales tasks and human resources management. None of these issues developed into problems that had a major impact on management.

We continue to try to fully communicate information about the internal reporting and consultation system and establish an environment that allows whistleblowers to report without anxiety.

In addition, we accept reports from and listen to the problems of our customers, business partners, community members, and all stakeholders about compliance through the inquiry function (Contact Us) and (Supplier Helpline) of our website.

Issues Reported/Consulted





Supply Chain Management

Enhancement of Internal Control and Communications, and Promotion of Sustainability in the Supply Chain

Yokogawa has formulated the Procurement Process Standards for the entire Group as part of the Group's internal control. The members of the Group are working together to ensure fair and equitable transactions while taking account of sustainability. These initiatives are to apply to all processes involving our business partners.

We contribute to the promotion of sustainability in the industry's supply chain as well as our own, through active participation in industry group committees such as the CSR Committee and the Procurement Committee of the Japan Electronics and Information Technology Industries Association (JEITA) and Global Compact Network Japan's study groups.

Sustainable Procurement Activities

Yokogawa promotes sustainable procurement activities with reference to ISO 20400:2017 - Sustainable procurement - Guideline. We ask our business partners in and outside Japan to observe the Yokogawa Group Sustainable Procurement Guidelines we created based on Version 6.0 of the RBA* Code of Conduct.

We are working with our business partners to identify risks that impede sustainable procurement, focusing on understanding the current state of the following four issues defined in the Yokogawa Group Sustainable Procurement Guidelines for business partners: human rights and labor, health and safety, the environment, and ethics. In case a risk materializes, we work with our business partners to make improvements. We also provide educational programs on sustainable procurement both inside and outside the Company. We set key performance indicators (KPIs) to manage and monitor the progress of these activities.

*RBA: The Responsible Business Alliance is a coalition of businesses that promote corporate social responsibility in global supply chains

[The Yokogawa Group Sustainable Procurement Guidelines are on our website.](#)

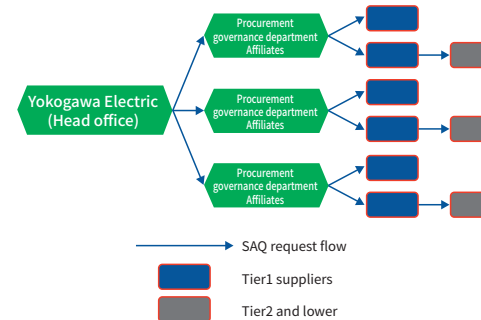
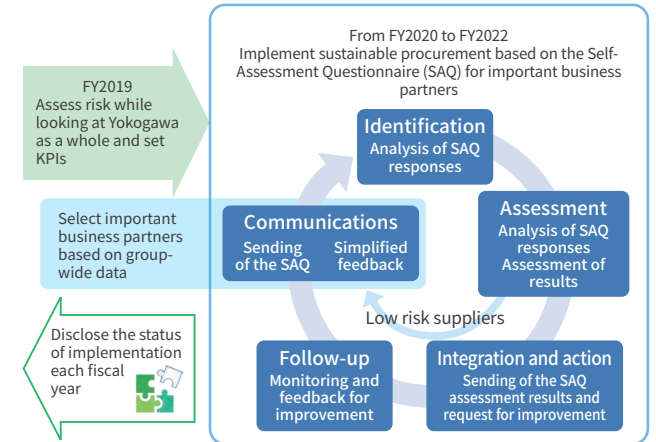
Planned and Underway Activities

Continuing from fiscal year 2020, we reduced CSR risk in the supply chain based on due diligence regarding the protection of human rights in fiscal year 2021. We identify high risk business facilities through the Self-Assessment Questionnaire (SAQ) about environmental conservation and human rights that is sent to the facilities of our business partners and by assessing responses to the SAQ.



1 PDCA Cycle for Activities

Based on KPIs formulated in fiscal year 2019, we work to mitigate CSR risk in the supply chain by communicating with our business partners and perform the PDCA cycle shown in the right figure.



2 Cooperation in Global Procurement

SAQ has been rolled out globally. We ask our business partners to ensure that SAQ responses are provided by facilities that actually manufacture the products supplied to the Yokogawa Group. If a business partner (Tier 1 supplier) purchases a product supplied to the Yokogawa Group from another company, we ask that the facility of that company (Tier 2 and lower) provide a SAQ response.

3 Plan and results of the Self-Assessment Questionnaire (SAQ)

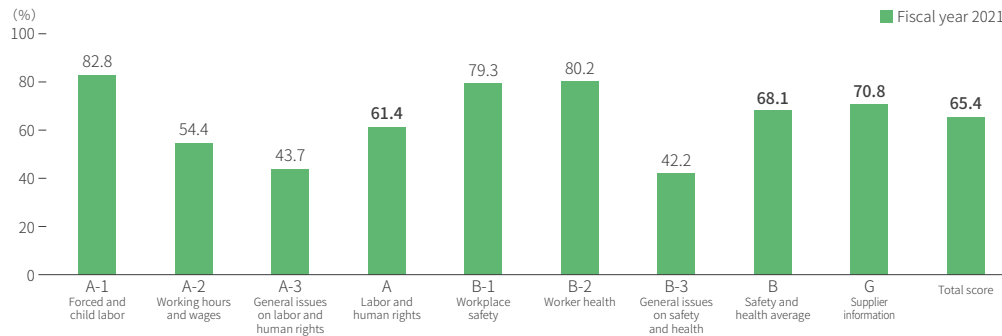
Every year, we analyze 80% of our global orders, conduct risk assessments based on our purchases using logic created under expert guidance, and send the SAQ to 200 selected companies.

KPIs	Total number of companies to which Yokogawa plans to send the SAQ	Companies to which the SAQ was sent	Total number of facilities that returned the filled-in SAQ	Fiscal year
Number of business partners' facilities selected for the SAQ	200	191	166	FY2020
	400	389	333	FY2021
	600	—	—	FY2022



Supply Chain Management

The SAQ is divided into three categories, each of which has multiple questions. The average scores for fiscal year 2021 are shown in the figure below.



4 Improvement initiatives

To improve our activities together with business partners, we ask them to agree to our sustainable procurement activities in the Group’s supply chain. So far we have confirmed with about 80% of them.

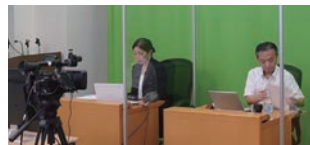
We will give feedback on the results of the SAQ and areas for improvement to the facilities that returned the filled-in SAQ. If a facility falls below a specified level identified through the analysis of their SAQ score, we will communicate with them using an improvement sheet and SAQ will be conducted again to confirm improvements in the next fiscal year.

In fiscal year 2021, we interviewed some business facilities that could not be visited due to the COVID-19 pandemic based on their responses to the SAQ to communicate with them for improvements.

Sustainable Procurement Education

We have established a system that enables employees engaged in procurement activities to participate in on-demand e-learning classes about sustainable procurement.

Global procurement members work together to promote sustainable procurement. Furthermore, we actively participate in not only internal but also external efforts, such as leading a task force for designing the SAQ based on JEITA’s Responsible Business Conduct Guidelines, in addition to giving lectures.



Promotion of Green Procurement

Taking into account the entire lifecycle of products/solutions to be provided to customers, Yokogawa encourages the purchasing of products and services with a small environmental footprint and promotes transactions with the business partners who are proactively involved in supporting biodiversity and environmental action for the reduction of their environmental footprint and the increase of added value. We also consider contribution to the SDGs in our procurement strategy. For example, we use PCs with bioplastic casings as standard products for office equipment. Furthermore, we present the Yokogawa Group Green Procurement Guidelines when concluding transaction contracts with new business partners. Having established a system to promote management of the chemical substances contained in our products, we investigate and manage the chemical substances contained in the materials and components we use for full compliance with the laws and regulations concerning chemical substances (such as the REACH Regulation, RoHS Directive, and TSCA). We also hold briefings as necessary to share information with and educate our business partners.

[▶ The Yokogawa Group Green Procurement Guidelines are on our website.](#)

Strengthening of Partnerships with Business Partners

Yokogawa Electric Corporation is reinforcing its partnerships by regularly interacting with the management teams at key business partners. We participate in JEITA task force activities for the preparation of educational materials about responsible procurement to business partners to build relationships of mutual trust beyond those of mere trading partners, such as extending invitations to seminars. Additionally, the production subsidiaries organize component exhibitions and technical seminars for each business partner in order to introduce business partners’ products - along with market trends, component trends, and other relevant information - to the product development departments of the Yokogawa Group.

Reinforcement of Compliant Procurement

Yokogawa strives to reinforce compliant procurement across the Group by establishing standards for compliance in procurement to serve as group-wide management rules while maintaining close communication with those responsible at the Group companies.

We also specify provisions concerning compliance in the business contracts. A helpline is available for business partners to report actual or suspected compliance violations.



Supply Chain Management

Compliance with the Subcontract Act

To ensure compliance with the Act against Delay in Payment of Subcontract Proceeds, Etc., to Subcontractors (the “Subcontract Act”), Yokogawa strives to raise awareness by having employees attend outside workshops. In addition, we offer regular opportunities for purchasers to study the Group’s original teaching materials via e-learning, as well as short tests to confirm their level of understanding. We also appoint compliance officers in each department and each Group company to share information regarding the Subcontract Act and build a compliance framework.

Procurement BCP

Recognizing that ensuring a stable supply of the products our customers need is an important social responsibility, we are taking action in line with our procurement business continuity plan (BCP). Under the circumstances created by the COVID-19 pandemic and Russia-Ukraine conflict in recent years, our global organizational units for procurement, with the cooperation of our business partners, have been working together to manage information on the areas producing the components used in our products and understand the logistics situation, aiming to minimize any impact on our customers. In addition to short-term activities, we will also reform supply chain management from a long-term perspective by analyzing the procurement information of key components used in our major products and considering future situations.

Initiatives on Conflict Minerals

1 Basic Policy

Based on the Yokogawa Group Human Rights Policy, the Yokogawa Group, as a global company, seeks to prevent the serious risk of being complicit in human rights violations that may arise in connection with the mining, trading, and handling of minerals from conflict-affected and high-risk areas, and ensures responsible mineral procurement. With reference to the “OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance)”* published by the Organisation for Economic Co-operation and Development (OECD), the Yokogawa Group has constructed a structure to conduct surveys on minerals in the supply chain and manage the supply chain as a corporate group. With this structure in place, we are engaged in activities aimed at preventing the purchase of products containing minerals that are associated with risks such as human rights violations and bribery in conflict-affected and high-risk areas.

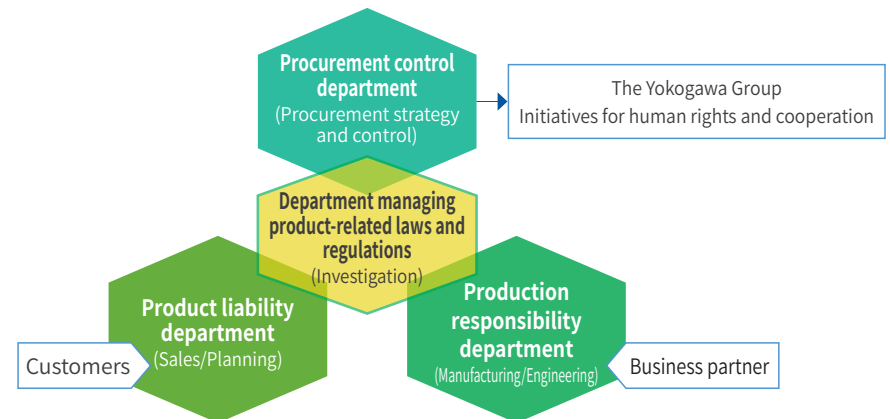
2 Structure

With reference to the steps described in the OECD Due Diligence Guidance, the structure encourages the departments to set the roles suited to their function in the Yokogawa Group’s addressing the conflict mineral issue. We cooperate with our business partners to investigate the use of conflict minerals in certain products based on customers’ requests.

If an investigation reveals that a mineral procured by Yokogawa is a source of funds for armed groups, we immediately take measures to avoid use of the mineral in question.

As a member of the Responsible Minerals Trade Working Group run by the industry group Japan Electronics and Information Technology Industries Association (JEITA), we coordinate our efforts with those of other corporations in the industry and obtain the latest information. The latest information and standardized procedures for investigating conflict minerals are shared throughout the Yokogawa Group.

*The OECD Due Diligence Guidance’s full name is the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas





Information Security

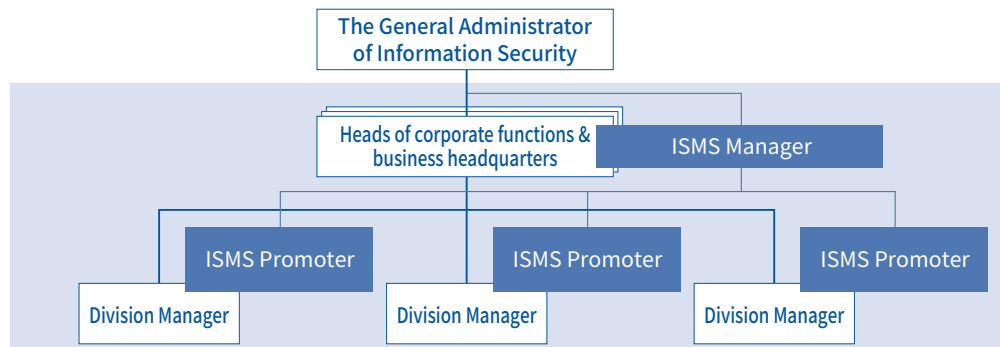
Yokogawa works together with customers to provide solutions. To protect important information entrusted to us by our stakeholders, we implement information security measures from three perspectives: people, equipment, and information technology (IT).

Information Security

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. All organization draws up an action plan at the beginning of year and checks the level of the organization using a maturity confirmation check sheet at the end of the year. In addition, it implements a PDCA cycle, which is the key to smooth information security promotion activities.

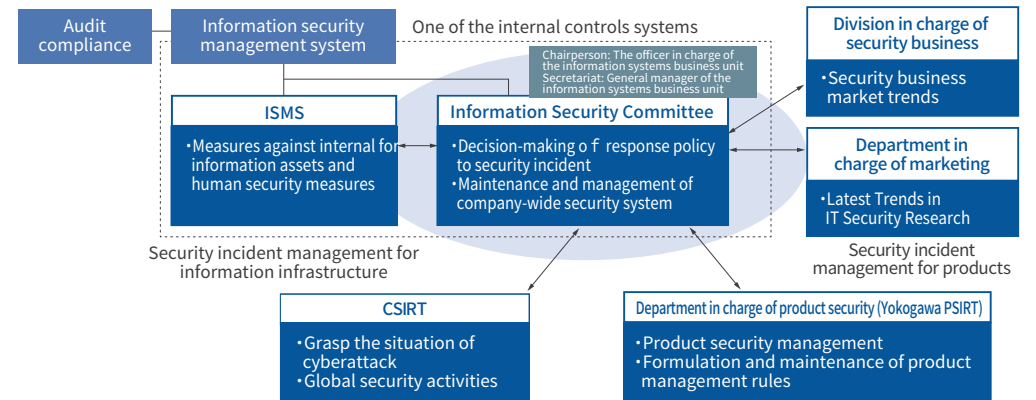
Information security organization



Information Security Committee

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.

Information Security Committee



Response to cyber attacks

Cyberattacks show no sign of slowing down and are becoming increasingly sophisticated. To prevent cyberattack risks, the Computer Security Incident Response Team (CSIRT) act effectively.

In December 2021, serious vulnerabilities in Apache Log4j, a Java-based open-source logging library was announced. Many such cyberattacks exploiting vulnerabilities have been reported all around the world. Such cyberattacks were also identified in Yokogawa, but fortunately did not cause serious damage, because the incident root causes and damage situations were identified correctly in timely manner, and countermeasures were taken quickly.

And partnership with other departments is vital as many people are involved when responding to an incident. In fiscal year 22, we will continue to build a framework to respond to urgent incidents and improve the response capability of CSIRT.

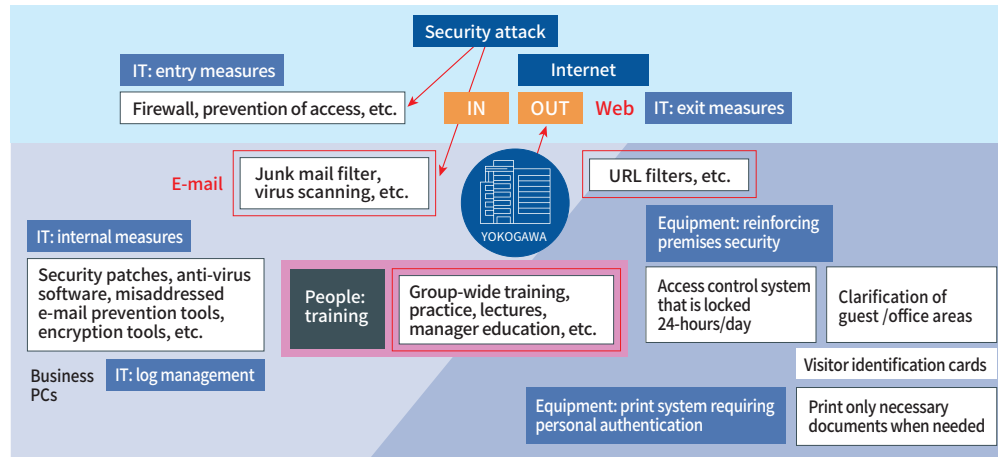


Information Security

Yokogawa's Security Management

In order to properly manage confidential information, it is necessary to be in a state where it can be objectively recognized as confidential. Yokogawa sets confidential information classification for confidential information and manages them according to classification. In addition, in order to protect confidential information, we are working on information security measures from the three perspectives of People, Equipment, and IT.

Information Security Management



People: Information Security Training

To protect information, every individual employee should be aware of information security.

Yokogawa provides training using e-learning to all its employees every year to enable employees to think for themselves about the handling of information they receive and appropriately act. We share up-to-date knowledge regarding information security, and publish internal bulletins whenever necessary to keep our employees informed of responses to security incidents and recurrence prevention measures based on actual events. Further, we provide more practical information in the form of lectures on information security featuring expert lecturers, as well as education and training on responses to targeted attacks, phishing, BEC(Business Email Compromise). In addition, we facilitate education for line managers as well as mobile users according to access & role. Information security audits are also conducted to check whether the results of this training are reflected in day-to-day information security activities.

Equipment: Easy-to-understand and Secure (Security of Office Premises)

Information security must be easy to understand. We have clarified the areas that employees and visitors are permitted to enter. When a visitor enters an area other than a guest area, the visitor must wear a visitor identification card. We protect property and information assets on the premises of the head office using an access control system that keeps the office area locked 24 hours a day.

Moreover, we have introduced a managed print service (MPS) that requires personal authentication for the printing of only the necessary documents at the time they are required, preventing documents from being left behind on printers or mixed in with other documents.

IT: Protection Behind the Scenes

We use IT to prevent human error such as accidental leaks and the inappropriate use of information due to a lack of knowledge, and also adopt a multi-tiered approach to prepare for external cyberattacks. In response to cyber-attacks, which are diversifying day by day, we obtain the latest vulnerability response information, tune security equipment, and install a private SOC(Security Operation Center) using cloud and machine learning technology. Thereby, we are striving to prevent unauthorized access and early detection of signs and incidents.

Protection of Customer Privacy

Yokogawa has developed the Privacy Guidelines and rules that its Group companies should follow for the proper management and use of the personal information entrusted to them by customers. In addition, Yokogawa is making efforts to reduce risks in response to global demand for personal information protection that varies from one country to another.

In fiscal year 2021, we conducted privacy protection training including GDPR (General Data Protection Regulation) for global Yokogawa, and for Japan locally we conducted training on "Amendments to the Act on the Protection of Personal Information". No complaints were filed about breaches of customers' privacy or loss of customer data with Yokogawa's system across all group companies.



Information Security

Security Management for Products and Services

The Yokogawa Group recognizes that the ongoing provision of measures to address cyber threats is important to its customers and society and is committed to addressing security together with its customers through the provision of its products and services. The risk of cyberattacks has increased in recent years, regardless of region, industry, or business scale. There have been numerous instances such as ransomware cyberattacks on oil pipelines and automobile supply chains. In particular, cyberattacks targeting important infrastructure have a profound impact on socio-economic activities given the current global situation, and are therefore becoming a national security issue. In response to these circumstances, the Yokogawa Group has pursued a variety of activities to reduce the risks faced by important infrastructure that originate in cyberspace.

Key Initiatives

At Yokogawa, we see the process from product development to system installation and operation as the system lifecycle. By supporting customers' security activities throughout that lifecycle, we work to reduce the risks to important infrastructure that originate in cyberspace.

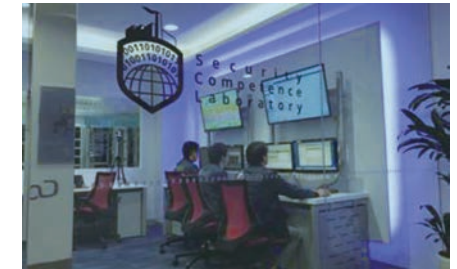
Product Development

- We have established a basic policy and standards for security measures. These are incorporated into our development process to eliminate vulnerabilities from products and enhance security.
- The product development department in charge of our control systems has obtained ISASecure SDLA (Security Development Lifecycle Assurance) certification from the ISCI, an international organization promoting security certification. This certification is given when the development process of control system products is found to meet the requirements for the secure development of products based on evaluations conducted by an independent organization. The review process determines that development processes comply with IEC 62443-4-1, an international standard governing product development security. Yokogawa is the first supplier of control system products in Japan to obtain this certification.



ISASecure SDLA Certificate

- To ensure security quality, our main products, CENTUM VP and ProSafe-RS, have obtained ISASecure CSA (Component Security Assurance) certification. ISASecure CSA certification is designed to comply with IEC 62443-4-1 and IEC 62443-4-2, international standards for the security of control devices.



Security Competence Laboratory (SCL)

System Installation

- Through security training for engineers, the research and study of security technology conducted mainly at the security laboratory, and support for the introduction of security measures to systems, we aim to realize a uniform implementation of security and secure progress for system integration.



System Operation

- Through the operation of a security program, we aim to reduce cybersecurity risks in customer systems throughout their lifecycles, connect OT security risk management to business risk management, and realize optimal security systems so that customers can operate safely and securely in the wake of the era of IT/OT convergence and SoS. The program follows the Plan-Do-Check-Act cycle and offers six phases in total for continuous improvement and updating.

PSIRT (Product Security Incident Response Team)

- We extensively gather information about vulnerabilities related to our products, disseminate the information we obtain throughout the Yokogawa Group, investigate, and disclose relevant information regarding vulnerabilities and countermeasures to customers to support their security activities.



Quality Assurance

The Basic Quality Policy

- 1 Quality management is carried out in order to implement customer focus based on "Quality First," which is the spirit of foundation, and "Healthy and Profitable Management" through improvements in management quality.
- 2 Products that meet statutory and regulatory requirements as well as customer requirements are supplied.
- 3 Appropriate quality management systems conforming to the International Standard ISO 9001 requirements are established and implemented. In addition, the effectiveness of those systems is continually improved.
- 4 Customer requirements are fulfilled and customer satisfaction is increased through the results of quality activities in all organizations and personnel. For this purpose, each employee must feel that the quality of his or her work has a direct bearing on product quality, and that the company believes in "Quality First."
- 5 The head of each organization is responsible for the quality of the relevant businesses. The responsibilities include ensuring that adequate resources are made available.

Customer Satisfaction and Quality

Yokogawa provides quality products and solutions that satisfy our customers. This is built upon the Quality First founding spirit that we have preserved for over 100 years. Our quality management consists of three basic elements: Quality Assurance (QA), Quality Improvement (QI), and Quality mind (the quality-first mindset) (Qm).

Quality Assurance (QA)

Continually seeking to provide better products to customers based on the philosophy of quality being the highest priority

Quality Improvement (QI)

Establishing a system to provide quality products and services

Quality mind (the quality-first mindset) (Qm)

Each and every employee having the quality-first mindset that is the Yokogawa Group's founding spirit.

Three Elements of Quality Management



We believe that we can satisfy our customers' expectations and build long-lasting relationships of trust only when all of these elements are engaged. Yokogawa believes the quality-first mindset is particularly important for maintaining high levels of quality. All Yokogawa Group employees are aware of the importance of having the quality-first mindset, and quality is built into each operation based on Group-wide rules and approaches.

Quality Assurance Activities

Since its founding, Yokogawa has built quality management systems into each process from development, planning, design, and manufacturing to sales and service, in order to deliver products and solutions that satisfy its customers. Yokogawa first obtained ISO 9001 certification in 1992, and its major Group companies in and outside Japan have also obtained the certification. Specialists deal with the issues and problems with products that are encountered by customers. Yokogawa has a service system featuring its Global Response Center that continually watches over customer equipment globally to ensure the equipment's safety. Yokogawa also ensures the traceability of measurement instruments as part of its quality assurance system. Yokogawa was the first company in Japan to obtain Japan Calibration Service System (JCSS) certification for flow meter calibrators.

Yokogawa QHSE* Month

In 1960 in Japan, November was set as Quality Month by the Union of Japanese Scientists and Engineers, the Japanese Standards Association, the Japan Productivity Center, and the Japan Management Association. Yokogawa has continuously engaged in related activities during November. Starting in 2018, we engage in an array of activities within the Group in November every year, having added occupational health and safety and environmental conservation, which are the foundation of management, to quality and renamed the month Yokogawa QHSE Month.

To instill the importance of quality, occupational safety and health, and environmental conservation in the minds of all employees, we have put up QHSE Month posters designed by an employee of a Group company. In addition to the quality-first mindset, we convey the thoughts of senior management regarding occupational safety and health, and environmental conservation to the employees of the Group in a QHSE Month message.

*QHSE: Quality, Health, Safety and Environmental Management



QHSE Month poster

Yokogawa QA Booklet

To maintain and improve quality, Yokogawa has prepared a QA Booklet that explains the attitude that is necessary during work every day in easy-to-understand terms. The booklet has been translated into five languages to facilitate implementation across the Group. Workers carry it at all times to ensure they maintain a quality-first mindset.



QA Booklet for manufacturing workers



Information

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Sustainability Data

Social Data

Item		2017	2018	2019	2020	2021
Number of employees (persons)	Group	18,290	17,848	18,107	17,715	17,258
	Parent	2,590	2,574	2,496	2,536	2,503
Ratio of female managers (%)	Group	9.9	9.4	10.2	11.7	12.6
	Parent	4.3	5.4	6.3	8.5	8.6
Ratio of female employees (%)	Group	21.2	21.9	21.7	21.9	22.5
	Parent	14.7	15.5	16.5	17.4	18.1
Employment rate of disabled persons (%)	In Japan	2.31	2.27	2.27	2.40	2.46
		(2018/6)	(2019/6)	(2020/6)	(2021/6)	(2022/6)
Ratio of employees represented by trade union (%)	Parent	74.8	73.7	73.1	73.7	72.7

Environmental Data

Item		2017	2018	2019	2020	2021
Energy consumption (GJ)	In Japan	676,375	684,085	632,217	623,618	641,173
	Outside Japan	829,572	854,898	831,180	758,685	745,515
	Total	1,505,947	1,538,983	1,463,397	1,382,303	1,386,688
	Intensity (GJ/100 million yen)	370	381	362	369	356
Renewable energy (kWh)	Solar- and hydro-power	83,288	130,915	111,948	174,629	2,593,964
	In Japan	35,185	34,447	30,745	29,850	28,331
Greenhouse gas (GHG) emissions (t-CO ₂ e)	Outside Japan	49,697	49,439	48,025	42,966	42,155
	Total	84,882	83,886	78,770	72,816	70,486
	Intensity (t-CO ₂ e/100 million yen)	20.88	20.78	19.48	19.46	18.08
	Scope 1	15,412	15,015	14,000	11,727	12,015
	Scope 2	69,470	68,871	64,770	61,089	58,471

Item	Classification	Category	2020	2021	
Supply chain GHG emissions Scope 3 (t-CO ₂ e)	Upstream 1	Purchased goods & services	197,858	225,275	
	Upstream 2	Capital goods	26,154	24,926	
	Upstream 3	Fuel- and energy-related activities not included in Scope 1 or 2		10,734	10,722
	Upstream 4		Transportation & logistics	17,660	15,055
	Upstream 5	Waste generated in operations	1,012	1,055	
	Upstream 6	Business travel	4,294	5,460	
	Upstream 7	Employee commuting	3,523	3,448	
	Upstream 8	Leased assets	—	—	
	Downstream 9	Transportation & deliveries	—	—	
	Downstream 10	Processing of sold products	—	—	
	Downstream 11	Use of sold products	529,700	492,060	
	Downstream 12	End-of-life treatment of sold products	1,026	1,003	
	Downstream 13	Leased assets	—	—	
	Downstream 14	Franchises	—	—	
	Downstream 15	Investments	—	—	
Total			791,961	779,004	

A dash (—) indicates “not applicable.”

Item		2017	2018	2019	2020	2021	
Frequency rate of occupational accidents (Number of accidents resulting in lost workdays / aggregate number of workhours × 1 million)	Employees	0.33	0.28	0.34	0.11	0.41	
	Temporary and contract employees	0.34	0.46	0.28	0.00	0.23	
Fatal accidents (cases)	Employees	0	0	0	0	0	
	Temporary and contract employees	0	0	0	0	0	
Donations and community investments (million yen)	Activities	Cash contributions	127.1	194.3	184.4	229.7	199.5
		Employee participation and dispatch	1.4	1.7	1.0	0.6	0.7
		In-kind giving and use of company facilities	14.3	7.4	45.9	4.1	12.7
	In and outside Japan	Management overheads	18.0	18.0	18.0	18.0	18.0
		Total	160.8	221.4	249.3	252.4	230.9
		In Japan	106.4	178.9	175.6	180.7	191.3
		Outside Japan	54.4	42.5	73.7	71.7	39.6
Total	160.8	221.4	249.3	252.4	230.9		

Item		2017	2018	2019	2020	2021
Water withdrawals (K m ³)	In Japan	319	316	247	240	187
	Outside Japan	296	245	266	248	238
	Total	615	561	513	488	425
	Intensity (K m ³ /100 million yen)	0.15	0.14	0.13	0.13	0.11
Water discharges (K m ³)	In Japan	236	267	246	236	184
	Outside Japan	282	232	228	227	219
	Total	518	499	474	463	403
Waste generated (t)	In Japan	2,350	2,566	2,414	1,977	2,530
	Outside Japan	2,455	2,624	2,499	2,406	2,162
	Total	4,805	5,190	4,913	4,383	4,692
	Intensity (t/100 million yen)	1.18	1.29	1.22	1.17	1.20
	Recycled	3,224	3,528	3,333	2,851	3,142
Non-hazardous waste (t)	Incinerated	138	126	393	481	434
	Landfilled	720	784	613	524	333
	Total	4,082	4,438	4,339	3,856	3,909
Hazardous waste (t)	Recycled	—	—	—	—	708
	Incinerated	—	—	—	—	75
	Landfilled	—	—	—	—	0
	Total	723	752	574	527	783



Third-party Verification

To assure the reliability of sustainability information, Yokogawa has received an assurance for social and environmental data by a third-party organization (Lloyd's Register Quality Assurance Limited)



LRQA Independent Assurance Statement Relating to Yokogawa Electric Corporation's Environmental and Social Data within its Sustainability Report 2022 for the fiscal year 2021

This Assurance Statement has been prepared for Yokogawa Electric Corporation in accordance with our contract.

Terms of Engagement

LRQA Limited ("LRQA") was commissioned by Yokogawa Electric Corporation ("the Company") to provide independent assurance on its environmental and social data within its Sustainability Report 2022 ("the report") for the fiscal year 2021 (from 1 April 2021 to 31 March 2022) against the assurance criteria below to a limited level of assurance and the materiality of the professional judgement of the verifier using ISAE 3000 (Revised) and ISO 14064-3:2019 for greenhouse gas ("GHG") emissions.

Our assurance engagement covered the Company's operations and activities in Japan and overseas and specifically the following requirements:

- Verifying conformance with the Company's reporting methodologies
- Evaluating the accuracy and reliability of data for only the selected indicators listed below:

Environmental Indicators:

- Energy consumption (GJ)¹
- Renewable energy usage (KWh)
- GHG emissions^{2,3} (Scope 1, Scope 2 [Market-based] and Scope 3 [Category 3 and 5]) (tCO₂e)
- Water consumption (m³) and Wastewater effluent volume (m³)
- Total waste generated (tonnes) and Total waste landfilled (tonnes)

Social Indicators:

- Frequency rate of occupational accidents⁴
- Number of fatal accidents
- Number of employees in the Industrial Automation and Control, Test and Measurement, Aviation, and other businesses
- Female managers ratio to all managers (%)
- Ratio of the overseas to total employees (%)
- Number of registered / pending patents, designs, and trademarks (in Japan and overseas countries)

LRQA's responsibility is only to the Company. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The Company's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of the Company.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that the Company has not, in all material respects:

- Met the requirements of the criteria listed above
- Disclosed accurate and reliable environmental and social data

The opinion expressed is formed on the basis of a limited level of assurance⁵ and at the materiality of the professional judgement of the verifier.

¹ Indicates the primary energy equivalent under the Energy Conservation Law.

² GHG quantification is subject to inherent uncertainty.

³ LRQA also reviewed the Company's 2021 fiscal year against its 2020 to confirm the year-on-year change in Scope 1 and 2 GHG emissions.

⁴ The number of occupational accidents with lost days in the boundary divided by total working hours (in the unit of million hours).

⁵ The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.



LRQA's Approach

LRQA's assurance engagements are carried out in accordance with ISAE 3000 (Revised) and ISO 14064-3. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- Auditing the Company's data management systems to confirm that there were no significant errors, omissions or misstatements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification.
- Interviewing with those key people responsible for compiling the data and drafting the report.
- Sampling datasets and traced activity data back to aggregated levels;
- Verifying the historical data and records for the fiscal year 2021; and
- Visiting Komagane plant of Yokogawa Manufacturing Corporation to confirm the data collection processes, record management practices, and to physically check their facilities

Observations

The Company should also obtain more specific generation source information for renewable energy source, as much as possible. Having generation source information will help to make the case for decarbonization efforts more clearly.

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases - Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021-1 Conformity assessment - Requirements for bodies providing audit and certification of management systems - Part 1: Requirements that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

LRQA is the Company's certification body for ISO 9001 and ISO 45001. We also provide the Company with a range of training services related to management systems. The verification and certification assessments, together with the training, are the only work undertaken by LRQA for the Company and as such does not compromise our independence or impartiality.

Signed

Dated: 18 June 2022

Yoshinori Shibata
LRQA Lead Verifier
On behalf of LRQA Limited
10th Floor, Queen's Tower A, 2-3-1 Minatomirai, Nishi-ku, Yokohama, JAPAN
LRQA reference: YKA4005469

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Company Profile

- ▶ **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 (Group)
2,503 (Parent)
- ▶ **Subsidiaries and Affiliates:** 110 outside Japan, 11 in Japan
(as of March 31, 2022)

Editorial Policy

This report discloses information about the sustainability of the Yokogawa Group. This information is based on the core option of the GRI Standards, the global guidelines for the disclosure of sustainability information, and includes the disclosure of Yokogawa's priority issues in view of the opinions of its stakeholders. Further, Yokogawa has obtained external assurance to increase the reliability of the information.

This fiscal year, we deepened the sustainability strategy advocated in our AG2023 mid-term business plan and clearly indicated the process for selecting priority issues and contribution areas based on a materiality analysis. We also shared specific information on social issues to face and our approach toward solving these issues, as well as the value being created, in our “Stories of growing our businesses and contributing to society” These disclosures have been expanded regarding initiatives for climate risks and opportunities (response to TCFD), human resources strategy, and the reduction of greenhouse gases.

Please see the Yokogawa Report (Annual Report) for financial information and ESG information closely related to our business strategies. The GRI Standards Index is shown on our website.

▶ Period Covered by Report

FY2021 (April 1, 2021 to March 31, 2022)

This Report also includes some information on major activities in prior years and some of the latest information in FY2022.

▶ Scope of Report

Yokogawa Electric Corporation and its consolidated subsidiaries in Japan and overseas

Where the scope is different, a note is added to the relevant data.

▶ Timing of Publication

November 2022 (published annually)

▶ Intended Readership

This Report is intended for a wide range of stakeholders, including customers, shareholders, investors, business partners, employees, local communities, NPOs, NGOs, and governments.

▶ Company Names

In this Report, “Yokogawa,” “Yokogawa Group” and “consolidated” refer to Yokogawa Electric Corporation and its consolidated subsidiaries in Japan and overseas.

“Yokogawa Electric,” “non-consolidated” and “Yokogawa Electric Corporation” refer to Yokogawa Electric Corporation.

▶ Reference Guidelines

- GRI Standards (Global Reporting Initiative)
- Environmental Reporting Guidelines 2018 (Ministry of the Environment, Japan)

Yokogawa Electric Corporation

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