

**2020 Yokogawa
Sustainability Report**





To pass on our rich Earth to future generations.

An electric meter research institute, founded in 1915, expanded its business in fields of measurement and control and evolved into the Yokogawa Group as we know today.

Since its foundation, Yokogawa has been aiming to contribute to society and supporting industries worldwide for over a century.

In recent times, unforeseeable social and environmental changes have been taking place, such as the increase in extreme weather events and the COVID-19 pandemic.

In order to adapt to such changes and realize a sustainable future, it is necessary to take a leap forward beyond past initiatives.

It is our responsibility to pass on our beautiful and healthy planet to our future generations by resolving issues in the changing society and industries while transforming ourselves.

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.

(Statement released in 2017)

The Yokogawa Philosophy

As a company, our goal is to contribute to 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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2020 Yokogawa Sustainability Report



Based on the Yokogawa Philosophy, we are working on sustainability management through its businesses to make the world a better place for future generations.



Through co-innovation with customers, Yokogawa will achieve a sustainable society by resolving social issues with innovative technologies.



To achieve sustainable growth and increase corporate value, Yokogawa operates its businesses by setting medium/ long-term sustainability targets, having incorporated sustainability into the focus of management.

03 Introduction

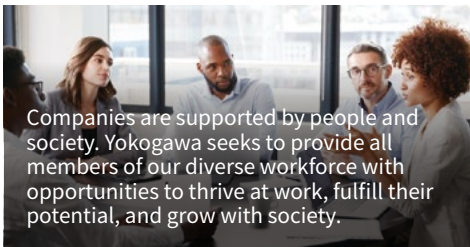
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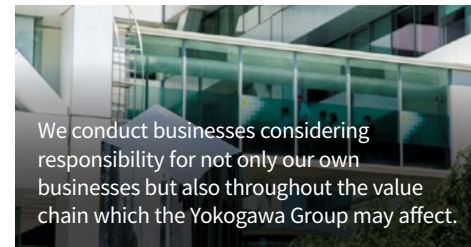
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Companies are supported by people and society. Yokogawa seeks to provide all members of our diverse workforce with opportunities to thrive at work, fulfill their potential, and grow with society.



Climate change and resource problems may impact the continued existence of not only business activities but also humankind. Yokogawa has taken initiatives to protect the global environment.



We conduct businesses considering responsibility for not only our own businesses but also throughout the value chain which the Yokogawa Group may affect.



This chapter contains social and environmental data, third-party verification, editorial policy and other information.

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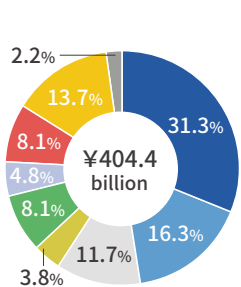
Yokogawa at a Glance

Yokogawa operates its businesses over 80 countries around the world.

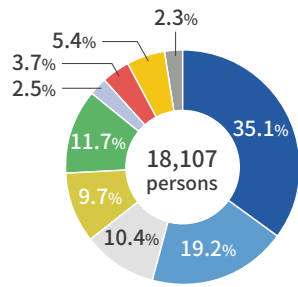
We have proactively employed local human resources at our sites worldwide and built a long-term relationship based on trust with customers and local communities.

We are engaged in business operations with the aim of making the world a better place as a good citizen, pursuant to the Yokogawa Philosophy.

Net Sales by Region



Employees by Region



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

Global Network



📍 World Headquarters/
Regional Headquarters
 📍 Office/services
 📍 Manufacturing

External Ratings

Global



Japan



2020 CONSTITUENT MSCI JAPAN
 ESG SELECT LEADERS INDEX

2020 CONSTITUENT MSCI JAPAN
 EMPOWERING WOMEN INDEX (WIN)



Activities with External Organizations



United Nations
 Global Compact



News and External Ratings in FY2019

Yokogawa makes CDP Water Security A List and CDP Supplier Engagement Leader Board

Yokogawa achieved a place on the Water Security A List of CDP, a non-profit organization known as a world authority in the environmental field, in recognition of its sustainable water management initiatives and disclosure of information on these initiatives. Yokogawa was also selected to the CDP's Supplier Engagement Leader Board, having been recognized for its efforts in measures to tackle climate change through supply chains.



Yokogawa Group Sustainable Procurement Guidelines revised

We have revised the "Yokogawa Group Sustainable Procurement Guidelines" in order to build a sustainable society in cooperation with business partners. We have also conducted a survey on the awareness of major business partners in accordance with these Guidelines. In each of the fields of Labor and Human Rights, Health and Safety, Environmental and Ethics, we engage in procurement activities in accordance with international codes of conduct in electrical and electronics industries.

Sustainability as a theme for FY2019 Yokogawa Innovation Fair

The Yokogawa Innovation Fair is an annual event for employees to present cutting-edge technologies and ideas to each other and hold discussions on them. Under the slogan "Co-creating for a sustainable society," the FY2019 Fair included holding such events as a lecture by an expert invited from outside the Group and a workshop in which employees



discussed the connection between their work and the Sustainable Development Goals (SDGs) and what each of them could do at the individual level. Visitors to the Fair totaled approx. 1,800 persons over the two-day period, including exhibitions and participation from overseas sites.

Sustainability category "Award for Three goals" created in Yokogawa Group Awards

Yokogawa Group Awards is an annual awards ceremony held on the anniversary of Yokogawa's foundation in which team members who have made outstanding achievements and employees serving as a role model are presented with an award and all employees of the Yokogawa Group are given the opportunity to learn a lesson. In the new category named "Award for Three goals" established in FY2019 for commending contributions to sustainability goals, members involved in creating a business model for making demand and supply adjustments for electricity required for the widespread popularization of renewable energy won the Award.



Sustainability Meeting

Yokogawa held a briefing session on sustainability for the first time with the aim of deepening its shareholders/investors' understanding of its sustainability initiatives. Board Members and department heads in charge provided an explanation of solution cases related to renewable energy and initiatives in the life innovation business and exchanged opinions actively with participants.





Message from the President

Yokogawa will continue to transform as we adapt to the “new normal”

Adapting to the new normal

Yokogawa does business with customers who serve as the backbone of society, such as those in the materials and energy industries. While giving due consideration to employee safety, we are making an all-out effort to support our customers with digital and network technologies that will allow them to continue their production and service activities even during the COVID-19 pandemic. We are taking stringent workplace hygiene management measures, relying on online meetings instead of business travel, and exploring ways to change how work is performed while taking individual circumstances into account.

Thanks to advances in IT in recent years, people can now choose where and when they will perform many kinds of work. This trend has gained great momentum during the COVID-19 pandemic, as demonstrated by rising demand among our customers for remote engineering and remote maintenance solutions. And just as with the driverless vehicles that one hears about today, some day unmanned plants will be able to use artificial intelligence (AI) and sensors to anticipate incidents and autonomously initiate corrective measures to keep operating efficiently. There will be less of a need for people to perform dangerous tasks and simple labor, freeing their hands for more creative work in safer environments. Digital technology will allow us to create more value with fewer resources, thereby reducing the burden on people and the impact on the environment, and improving efficiency across the board in every industry. While leveraging such new technologies, Yokogawa is committed to working with its customers to overcome challenges and adapt to the new normal during and after the COVID-19 pandemic.

Achieving our Three goals

Climate change is having an increasingly serious impact on our world, as evidenced by the rising frequency and severity of weather-related natural disasters. Under these circumstances, any business that wishes to survive must be able to flexibly adapt to change and have resilience in the face of adversity. Moreover, companies must be willing to tackle global issues such as resource shortages and environmental pollution, and in concert with their customers and business partners shift toward practices that support a circular economy.

In our 2017 statement on our aspirations for sustainability, we affirmed that Yokogawa’s “Three goals” for the year 2050 would be to achieve net-zero emissions, ensure well-being for all, and make the transition to a circular economy, and we set out a direction for transformations that would allow us to achieve these goals. Then, to help ensure the fulfillment of these goals, Yokogawa set mid-term sustainability targets for the year 2020 that are aligned with the measures specified in the Transformation 2020 mid-term business plan. For the net-zero emissions goal, in FY2019 we had a hand in the construction of LNG and renewable energy infrastructure that will help to curb greenhouse gas emissions. Regarding the goal of ensuring well-being, we made progress in expanding and enhancing partnerships that will facilitate the efforts by our life innovation business to improve the overall efficiency of the pharmaceutical and food industries’ value chains. And for making the transition to a circular economy, we can report a rising number of success stories in which we have introduced AI and other digital technology solutions that are helping companies run their businesses more efficiently, and we are currently picking up the pace of these efforts.

Yokogawa has been engaged in initiatives that help its customers resolve issues they face in their businesses as they adapt to a changing business environment. Under the present difficult circumstances, where society is in flux and the future is uncertain, it is more important than ever for each and every one of us to think for ourselves and not be bound by precedents. Together with our stakeholders, let’s use our collective strength to forge ahead in pursuit of a sustainable society that leaves no one behind.



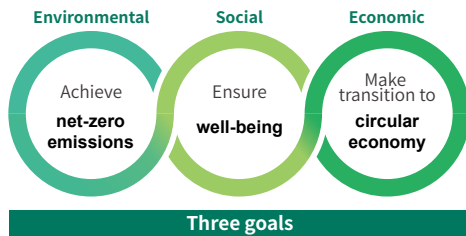
President and CEO *T. Nara*



Sustainability Initiatives

Yokogawa incorporates the resolution of global issues into the focal point of its business activities.

Following the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement in 2015, there has been a growing sense of crisis worldwide over the future of humanity. Yokogawa, which has long been working to contribute to society through its businesses, clearly set out that it would incorporate the resolution of global issues into the focal point of its business activities and announced the “Statement on Yokogawa’s Aspiration for Sustainability” in 2017. The sustainability statement presents our “Three goals,” depicting



Outline of Initiatives to Achieve “Three goals”

- Net-zero emissions**: We aim for net-zero emissions—i.e., a state in which greenhouse gas (GHG) concentrations in the atmosphere do not rise due to the balance maintained between GHG emission and absorption—by introducing renewable energy and contributing to efficient use of energy.
- Well-being**: We support people’s health and prosperous lives at safe and comfortable workplaces and in a wide range of fields such as life sciences and drug discovery. We promote human resources development and employment creation in local communities, as well as diversity and inclusion.
- Circular economy**: We aim to realize a social framework and ecosystem in which various resources are circulated without waste and assets are utilized effectively. We also help efficiently use water resources circulating the Earth and secure safe drinking water.

our vision to make the world a better place for future generations (targeting around 2050).

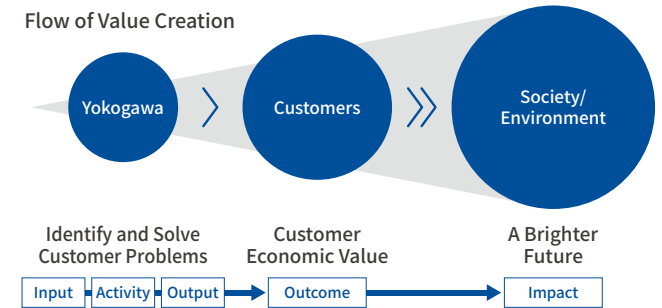
The “Three goals” consist of three components, namely, Net-zero emissions, Well-being and Circular Economy, symbolizing the society we are pursuing for future generations.

Furthermore, we indicated that the direction of the transformation of Yokogawa itself aimed at contributing toward the “Three goals” in the drastically changing, unpredictable society would involve: becoming more adaptable and resilient, evolving our businesses to engage in regenerative value creation, and promoting co-innovation with our stakeholders. In accordance with such a direction of transformation, Yokogawa will uncover and resolve customers’ issues and increase customers’ economic value. The outcome of such efforts will translate into contribution to society and the environment, such as a reduction in greenhouse gas emissions and the development of products that enrich people’s lives.

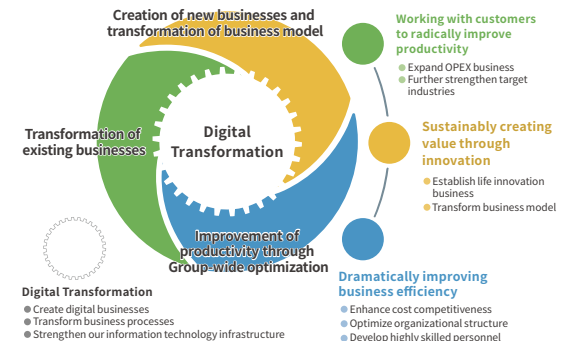
Direction of Transformation



Flow of Value Creation



The Transformation 2020 mid-term business plan (“TF2020”), launched in 2017, is focused on three transformations, namely, the transformation of existing businesses, creation of new businesses and transformation of business model, and improvement of productivity through Group-wide optimization. We are expanding our existing businesses such as energy-saving, resource conservation, improvement of efficiency and enhancement of safety at customers’ plants while expanding our areas of contribution to resolving social issues by developing new businesses also in the life innovation business that supports people’s health and enrichment of lives, as well as renewable energy-related businesses such as biomass, geothermal, solar and wind power generation.





To steadily make headway toward the “Three goals,” it is necessary to make the outcome of our initiatives described above visible and manage the progress. We have set forth ten value creation themes based on activities under TF2020 and specified the key performance indicators (KPI) with respect to each theme from the viewpoint of sustainability. From an even longer-term perspective, we have also set ambitious targets for 2030 with respect to each of the three components of the “Three goals.”

Furthermore, we have set targets relating to diversity and inclusion as well as employee engagement, given the high importance of human resources at Yokogawa as a solution services company. We have established targets in the environmental field, including those for in-house energy usage and reduction of greenhouse gas emissions in consideration of the significance of the issue of climate change.

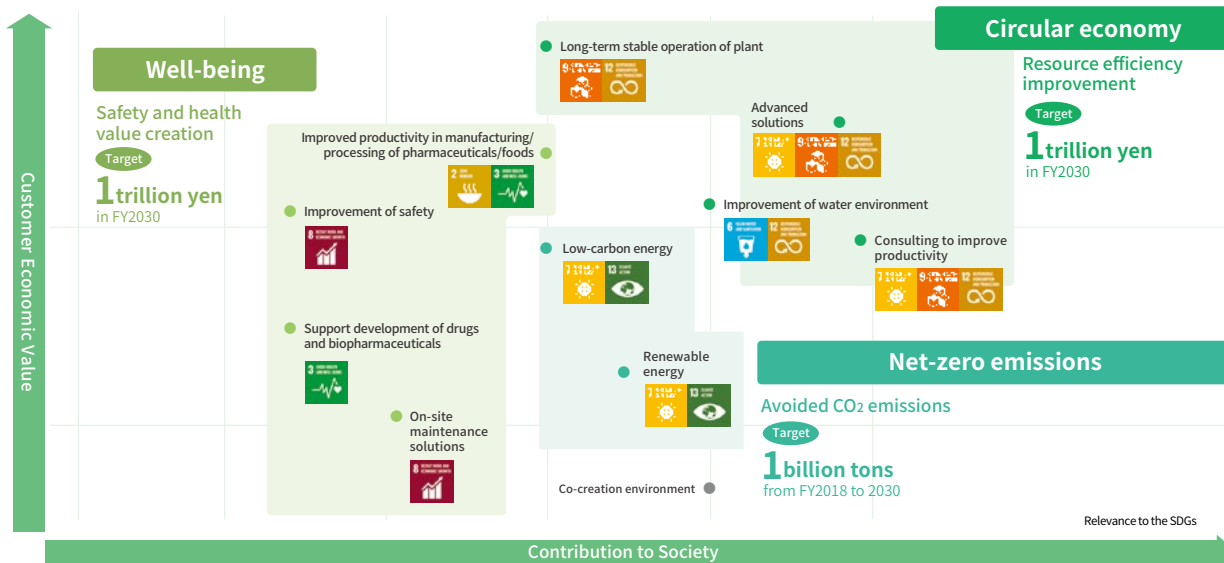
Regarding structures for promoting sustainability, Yokogawa has established a department dedicated to sustainability and a department specializing in Enterprise Risk Management (ERM) in its Corporate Administration Headquarters. In addition, Yokogawa has set up the Risk Management Committee and the Crisis Management Committee, both of which are chaired by the President. The Board of Directors exercises governance by receiving a report on sustainability in general once a year.

Going forward, Yokogawa will incorporate sustainability initiatives more deeply into management and pursue the sophistication of sustainability management. In the course of aiming to improve productivity through group-wide optimization, we will transform our value creation platform, including human resources, organization, mechanisms and facilities, and expand our businesses that contribute to society and the environment.

Value Creation Themes

Theme	Description
Renewable energy	Contribute to the widespread adoption and expansion of renewable energy by providing solutions for monitoring/ control, data measurement and maintenance of facilities aimed at the stable and effective operation of wind power and biomass power generation, etc.
Low-carbon energy	Based on our wealth of experience and extensive track record in the field of instrumentation for natural gas and Liquefied Natural Gas (LNG), we will realize a safe and efficient LNG supply chain in cooperation with customers and partner companies and meet the increase in demand for LNG, which is a low-carbon energy source.
Improved productivity in manufacturing/ processing of pharmaceuticals/ foods	Make the most of our measurement, control and information technologies as well as our wealth of experience in diverse industry sectors, we will realize higher productivity in the value chain as a whole from basic research to logistics and services.
Support development of drugs and biopharmaceuticals	Support the efficient development and production of pharmaceutical products with a high level of safety through confocal microscopes, cell image analysis technology, bioreactors and other technologies that support drug discovery.
Improvement of safety	Help improve safety at customers' plants by providing systems that integrate process control and safety instrumentation, as well as simulators for operation training, security solutions against cyberattacks, etc.
On-site maintenance solutions	Assist in safe and efficient plant management involving light workload through consulting solutions for equipment management.
Improvement of water environment	Help effectively utilize water resources by expanding the safe and efficient supply of clean water through technologies and solutions to improve the water environment, such as water supply and sewerage surveillance/control/leakage monitoring.
Advanced solutions	Realize higher product yield and efficient use of energy by operating complex production processes through the optimization of temperature, flow rate, pressure, etc.
Consulting to improve productivity	Realize higher operational efficiency and improved safety of plants by providing consulting services and solutions to assist in optimized operations.
Long-term stable operation of plant	Improve the efficiency of the use of resources by providing products and services that support stable operation throughout the lifecycle of customers' plants.

Focus Areas for Achieving the “Three goals” and the SDGs





Renewable Energy and Energy Management Improvement of Productivity Leveraging Digital Technologies Improvement of Safety Through Remote Monitoring Technology Making Safe Drinking Water Available Innovation in Cell Research Response to COVID-19 Pandemic

Sustainability Stories

Through co-innovation with customers, Yokogawa will achieve a sustainable society by resolving social issues with innovative technologies.

Renewable Energy and Energy Management

Improvement of Productivity Leveraging Digital Technologies

Improvement of Safety Through Remote Monitoring Technology

Making Safe Drinking Water Available

Innovation in Cell Research

Response to COVID-19 Pandemic



▶ Renewable Energy and Energy Management Improvement of Productivity Leveraging Digital Technologies Improvement of Safety Through Remote Monitoring Technology Making Safe Drinking Water Available Innovation in Cell Research Response to COVID-19 Pandemic

Renewable Energy and Energy Management



In 2019, global carbon dioxide (CO₂) emissions reached a record-high*¹, while the world’s average temperature became the second-highest on record*². As calls for measures to tackle climate change are becoming louder worldwide, the shift toward a carbon-neutral society has begun. Demand for clean energy with zero CO₂ emissions in the form of solar power, wind power and other renewable energy sources has been increasing. Amid the fall in energy demand due to lockdowns enforced in response to the COVID-19 pandemic, renewable energy is the only energy source that has been increasing in demand and growing in terms of

market share*³. Yokogawa will take advantage of its strengths in monitoring/control, data measurement, maintenance of power generation facilities, etc. with the aim of realizing net-zero emissions by providing more solutions in the field of energy management, including electricity demand/supply adjustment and electricity storage that enable stable electricity suppl in addition to power generation facilities.

*1 Global CO₂ emissions in 2019; IEA *2 WMO Statement on the State of the Global Climate in 2019; WMO *3 Global Energy Review 2020; IEA

Sustainability Goal



Sustainability KPI

CO₂ emissions avoided (cumulative from FY2018)

(FY2019 result) **85.13** million tons / (FY2020 target) **60** million tons

Yokogawa’s Solutions

Japan’s Largest Wind Farm Adopts Yokogawa’s Control System

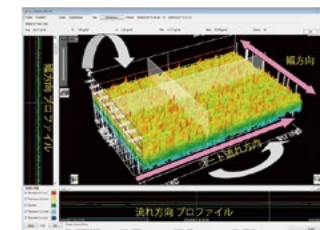
Wind Farm Tsugaru is Japan’s largest wind farm consisting of 38 windmills with a total power-generating capacity of 121,600kW. Constructed in Tsugaru city, Aomori prefecture by Green Power Investment Corporation, Wind Farm Tsugaru commenced operation in 2020. Yokogawa provided a total solution covering engineering, introduction and all other processes up until trial operation by delivering wide-area distributed monitoring FAST/TOOLS Supervisory Control and Data Acquisition (SCADA) software for executing monitoring control by integrating the monitoring of all windmills with electrical substations and switching stations for interconnected systems in remote locations, real-time OS controller “e-RT3,” and network infrastructure equipment. By making the most of this experience, Yokogawa will contribute to projects for introducing renewable energy all over the world.



Wind Farm Tsugaru

Coat Weight Measurement System Contributing to Manufacturing of High-quality Lithium-ion Batteries

Demand for rechargeable batteries that can be repeatedly recharged and discharged has been increasing rapidly on the back of the widespread adoption of power generation by wind, solar and other renewable energy sources, as well as the popularization of electric vehicles. Yokogawa’s “WEBFREX3ES” is a system for online measurement and control of the thickness of agents coated on electrode sheets on the production line of lithium-ion batteries, which are the mainstay of rechargeable batteries. The system adopts a proprietary linear servo drive mechanism, enabling not only the high-speed/high-precision measurement of coat weight—which affects battery performance—but also the prevention of fine metal powder from falling onto the sheets—which causes fire. Yokogawa is contributing to the realization of a carbon-neutral society by helping to improve the performance and safety of lithium-ion batteries, whose demand is on the increase.



3D Profile View function



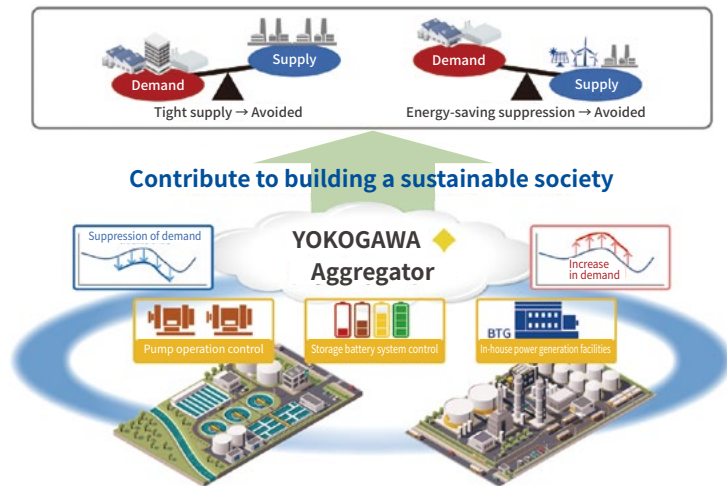
► Renewable Energy and Energy Management Improvement of Productivity Leveraging Digital Technologies Improvement of Safety Through Remote Monitoring Technology Making Safe Drinking Water Available
Innovation in Cell Research Response to COVID-19 Pandemic

Yokogawa's Solutions

Virtual Power Plant (VPP): Integrated Control of Dispersed Energy Resources

For the widespread adoption and effective utilization of renewable energy, Virtual Power Plant (VPP)* is drawing attention. Customers' plants are equipped with many facilities, including electricity-guzzling equipment and in-house power generation/storage battery facilities. Peak electricity usage can be suppressed by staggering the usage hours and varying the power generation output of such facilities. This will realize higher efficiency in terms of making electricity supply meet demand, as well as lower CO2 emissions. In the lead up to the establishment of a new electricity market to be created by electricity system reform including retail electricity liberalization, the Japanese government is currently conducting a VPP demonstration project in which Yokogawa is serving as a resources aggregator who manages the operation of energy resources. Yokogawa will build a new energy system with customers by making the most of our expertise in energy management that we have gained to date, as well as our network with customers.

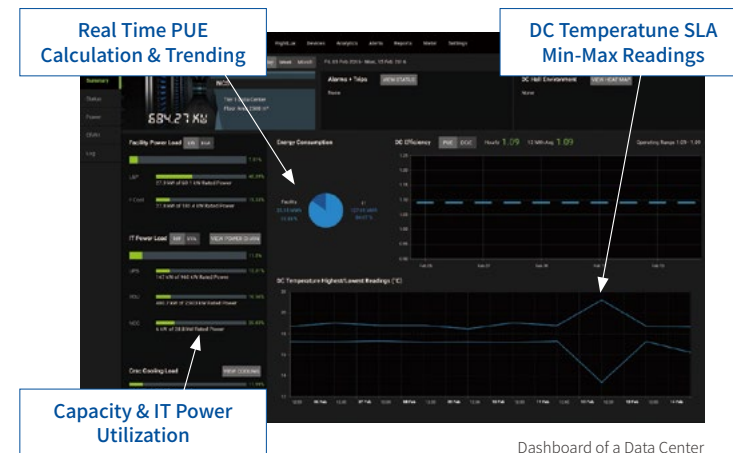
* A system for decentralized, small-scale power generation and storage facilities at factories and houses to make them function as one power plant by integrating, managing and remotely controlling them with IoT devices.



Energy resources aggregation service

Enterprise Energy Management Solution Towards Energy Savings

Manufacturers are facing a compelling need to reduce energy use and improve process performance. Companies are still not able to visualize full energy portfolio in realtime of their operation including facilities energy consumption (i.e. data centre, office building or a control room etc.). Yokogawa has established Enterprise Energy Management Solution (EEMS) entering a global partnership with a Singapore startup GreenKoncepts, which technology connects IoT devices. This solution enables A.I. data analysis and real-time dashboarding monitoring via a multi-cloud environment from PCs and mobile devices. Customer can get a complete picture of your energy portfolio on a single centralized dashboard, which connects various devices (i.e. power monitors, temperature and humidity sensors etc.) from different manufacturers through universal enabled protocols. Yokogawa Engineering Asia has successfully completed a Proof-of-Concept where we are able to identify more than 10% energy saving, which is expected to reduce CO2 emissions in office building and factories.



Dashboard of a Data Center



Improvement of Productivity Leveraging Digital Technologies



A wide range of information exists inside and outside a plant, such as information on facilities, production processes, raw materials, product quality and people. Yet-to-be-measured information also exists in large volumes. Digital technologies can dramatically improve production efficiency and realize plants that are more human- and eco-friendly by measuring, associating and analyzing such data that had not been utilized in the past. Use of digital twin technology—which replicate the manufacturing process in a factory in real-time in a virtual environment—makes it possible to not only prevent abnormalities by forecasting the future

state of the plant but also optimize planning, designing, operation and maintenance of facilities by simulating various situations. Technologies that have been put to practical application include technologies for remote monitoring and maintenance that replace on-site inspection tasks previously performed by persons with constant monitoring based on sensors, and even technologies for detecting signs of abnormalities at plants by utilizing big data and AI. The long-term stable operation of plants by using cutting-edge technologies is a significant contribution toward the realization of a sustainable society.

Sustainability Goals



Sustainability KPIs

Amount of improvement effect proposed to customers (compared to FY2017)

(FY2019 result) **1.6**times / (FY2020 target) **2**times

Maintenance service sales amount (compared to FY2017)

(FY2019 result) **1.1**times / (FY2020 target) **1.3** times

Yokogawa's Solutions

AI-leveraged Analysis and Prediction for Facilities and Product Quality

Many issues that could not be resolved by conventional analysis methods in the operation of plants could be resolved by utilizing AI. Based on cases in which Yokogawa had resolved issues of customers in many industry sectors, Yokogawa consolidated the values that it could provide to plant management by utilizing AI into the following three: (1) Predictive analysis of abnormalities in facilities, which improves the operating rate by forecasting the occurrence of abnormalities and performing maintenance, etc.; (2) analysis for cause identification, which translates the identification of causes of past problems into product quality, etc.; and (3) predictive analysis of product quality, which involves getting a grasp of quality without conducting any destructive examination or test by predicting changes in quality based on past data. Through these solutions, Yokogawa provides new value in plant management by leveraging AI.

Main Track Records

	Industry sector	Target	Outline
Prediction of abnormalities in facilities	Chemical	pH sensor	Predict deterioration of sensor installed in drainage pipeline
	Petroleum	Heating furnace	Predict operational status of heating furnace based on process data
	Electric power	Pump	Predict occurrence of air bubbles in pipes based on pressure-related data
Identification of causes	Petroleum	Compressor	Identify causes of reduction in efficiency of cooling compressor at plant based on process data
	Hot spring	Hot spring control	Identify causes of changes in hot water distribution volume based on operation data
	Paper/pulp	Refiner*	Identify the relationship between refiner's power (electricity) and quality
Prediction of product quality	Electronic parts	Electronic parts manufacturing equipment	Predict breakage of parts in assembly processes based on sensor data
	Chemical	Continuous manufacturing equipment for industrial raw materials	Predict indicators among actual measurement indicators for quality based on 18 types of data
	Petroleum	Product quality value	Predict quality value based on manufacturing data
	Foods/ pharmaceuticals	Pharmaceuticals manufacturing equipment	Predict quality of finished products based on data at the time of manufacturing (10 types)

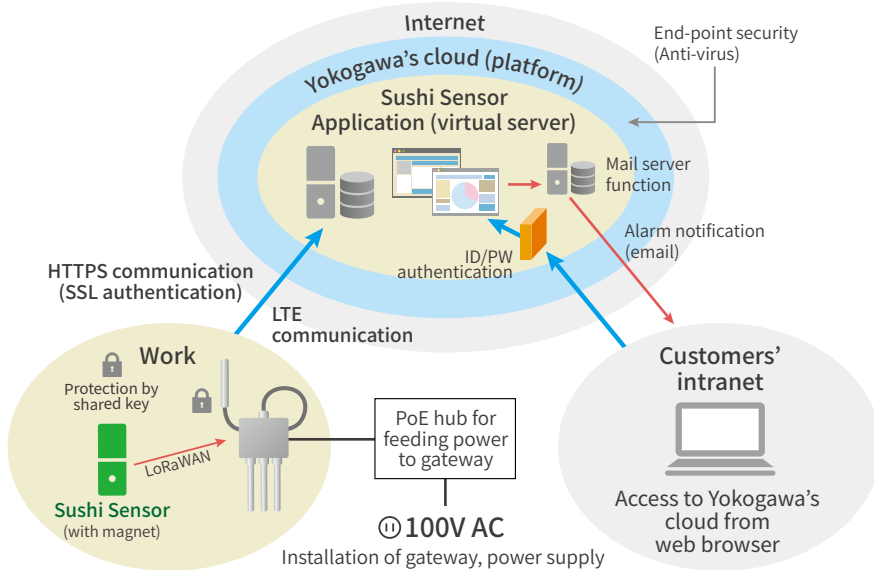
* Equipment for crushing pulp fiber into tiny pieces in the papermaking process



Yokogawa's Solutions

Plant/Factory Surveillance Solutions by Monitoring Equipment on the Cloud

In the manufacturing industry, the aging of production equipment is giving rise to issues in the form of occurrence of accidents and deterioration in product quality. From the Okayama Plant of Kuraray Co., Ltd., Yokogawa received a request to visualize the actual status of the equipment deterioration trends and their cause-and-effect relationship with respect to product quality, etc. In response, Yokogawa proposed a plant/factory surveillance solution involving constant intensive monitoring by installing "Sushi Sensor," consisting of small wireless sensors for Industrial Internet of Things (IIoT). Yokogawa enabled the monitoring of the plant's equipment status from outside the factory as well as notification of signs of abnormalities by managing vibration, surface temperature, pressure and other equipment data in a cloud environment, and thus realized equipment maintenance optimization utilizing plant-wide data.



System Configuration

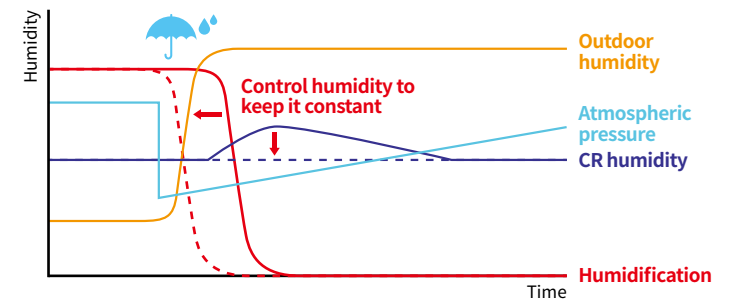
AI-leveraged Productivity Improvement in Semiconductor Production

There are growing expectations for AI-based analysis and utilization of data, the volume of which has continued to increase on the back of the IIoT trend. At Yokogawa's Komagane Factory, an AI-based analysis tool developed by ourselves is being used to conduct quality analysis with respect to semiconductor production process data. Having collected and analyzed data from numerous sensors mounted on each process and found causes that affect data and new correlations between production line data and quality, we have prevented faults and other problems from occurring and reduced time during which the operation is stopped due to malfunction or maintenance to almost zero. We have also launched initiatives, including introducing AI for images in product inspections and factory inspections, in addition to saving energy consumed in operations by forecasting changes in weather and factory operation. Yokogawa will realize improved quality and optimized operation by combining data at production sites with AI.



AI-based analysis tool: EdgeQC

- Realize pre-emptive control by newly installing a solarimeter and barometer as well.
- Import data on sunrise, sunset and rapid changes in frontal passage and detect atmospheric changes before they occur.



Energy-saving air conditioning control based on AI reinforcement learning for forecasting and responding to changes in weather



Improvement of Safety Through Remote Monitoring Technology



Preventing accidents and ensuring safety is a matter of utmost importance for the operation of plants. Yokogawa provides a wide range of solutions that maintain and improve the safety of customers' plants throughout their life cycle and contribute to their stable operation over a long period of time. Furthermore, we provide new solutions that protect

plants and workers by utilizing remote monitoring and digital technologies, including constantly monitoring the work environment through sensors and making robots perform dangerous tasks.

Sustainability Goals



Sustainability KPIs

Number of provided on-site maintenance solutions

(FY2019 result) **443**solutions / (FY2020 target) **850**solutions

Number of shipped safety instrumented system controller units

(FY2019 result) **2,734**systems / (FY2020 target) **3,200**systems

Yokogawa's Solutions

The Wireless Noise Surveillance System Contributing to Prevent Hearing Loss of Workers

At offshore plants, where space is limited, noise generated by equipment such as compressors at the site can seriously affect the hearing of workers. In collaboration with Equinor, a Norwegian energy company, Yokogawa has developed a wireless noise surveillance system, WiNoS, that enables automatic measurement of noise distribution and real-time mapping through a year and a half of offshore field trials. By digitizing noise maps that had previously been manually measured and created, noise distribution can be more accurately grasped, contributing to a reduction in the risk of hearing impairment among workers. It is also expected to be applied to other industrial fields, such as mining, as well as to reduce noise in the neighborhood.



Noise map surveillance screen

Deploying Robots for Facilities Inspection in Hazardous Environments

In the process industry you often find harsh environments. In these usually hazardous areas still operators must do their inspections and it is your primary objective to have them execute their jobs safely. Yokogawa has signed a licensing agreement with ExRobotics B.V. based in the Netherlands, which develops robots that can be used in the explosion hazardous environments. Combining the ExRobotics robot platform with the Yokogawa integration and sensing capabilities we have the solutions for an extra pair of eyes for on the spot inspections, mobile detections of hazardous gasses, pattern recognition of what is right and what isn't. That together with the wireless networking capabilities and stringent explosion-proof certification we, together with ExRobotics will create a safer working environment for operators whilst helping our customers manage operating costs.



ExRobotics' robot for inspection tasks: ExR-1



Making Safe Drinking Water Available



Reportedly, 30% of the world’s population has no access to safe drinking water*¹, making the widespread introduction of water supply and sewerage systems a pressing issue for many parts of the world. Surface water existing in rivers, creeks, lakes and wetlands that are easily accessible for humans account for merely 0.01% of all water that exists on Earth, excluding seawater, glaciers, etc.*² Such limited water resources need to be supplied and used cyclically in an efficient manner. Yokogawa provides technologies and expertise, including for water supply and sewerage surveillance/control, water leakage monitoring,

plant operation support, engineer training, and even desalination plant control all over the world. By working for the stable supply of drinking water and the effective use of water resources, we contribute to people’s access to water and ensure hygiene.

*1 The Sustainable Development Goals Report 2020; UN *2 Water in Japan; Ministry of Land, Infrastructure, Transport and Tourism

Sustainability Goals



Sustainability KPI

Number of water environment improvement solutions provided

(FY2019 result) **223**solutions / (FY2020 target) **190**solutions

Yokogawa’s Solutions

Yokogawa Provides Training Program for Leakage Control Specialists

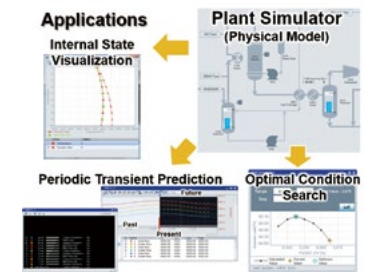
Water leakage from pipes of waterworks systems is an issue in developing countries. For a period of three years, Yokogawa has been providing a “program for improving water operation/non-revenue water (NRW) management abilities utilizing supervisory control and data acquisition (SCADA)” to waterworks department staff in the island of Labuan in Malaysia, with the aim of training specialists in measures to reduce NRW. This project was executed jointly by Yokogawa with Tokyo Water Co., Ltd. based on a project proposal by the Bureau of Waterworks, Tokyo Metropolitan Government, as part of the Japanese government’s Official Development Assistance (ODA) project. Measures to reduce NRW are fields in which Yokogawa can take advantage of its SCADA system, water leakage management systems and sensors. By making the most of the knowledge gained from this activity, Yokogawa will contribute to the effective utilization of water resources around the world.



A scene from the program

Plant Simulation System Supporting Stable Operation of Water Treatment Plant

In Singapore, where securing stable water supply is a challenge, the Public Utilities Board (PUB) invests in research and development for sustainable water supply, as part of which Yokogawa has been awarded a contract for a plant simulation project for the Lower Seletar Waterworks. The system to be delivered by Yokogawa consists of OmegaLand, which enables operation training to deal with abnormalities such as equipment and power failures at a plant by utilizing digital technologies for replicating the plant’s internal conditions, as well as a Mirror Plant, which is for performing such tasks as predicting changes in water quality and determining the optimal chemical dose. Yokogawa will realize stable water supply by operating plants efficiently and improving the skills of operators.



Mirror Plant



Innovation in Cell Research



Research at the single-cell level is drawing attention in cutting-edge medical treatment and drug discovery research. For example, basic research on cancer primarily involves genetic analysis. If you conduct genetic analysis by extracting the internal constituents of a particular cell or a single cell while observing living cells through a confocal scanner that can obtain high-resolution

images, you will be able to associate the cell morphology information and position information with genetic analysis results. Yokogawa will provide new solutions for single-cell analysis that contributes to drug discovery and life science by combining imaging with new technologies.

Sustainability Goal



Sustainability KPIs

Amount of productivity improvement of pharmaceutical and food customers (compared to FY2017)

(FY2019 result) **1.6**times / (FY2020 target) **2**times

Number of provided drug discovery systems (compared to 2017)

(FY2019 result) **2**times / (FY2020 target) **20**times

Yokogawa's Solutions

Nanopipette Technology Playing an Active Role in the Field of Life Science

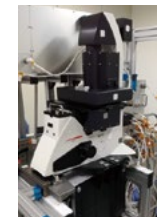
“Single-cell” research is drawing increasing attention for its contribution to identifying the causes and establishing the medical treatment of diseases such as cancer. Nanopipette technology—which enables the injection of genes, drugs, genome-editing tools, etc. directly into specific locations on a cell-by-cell basis—is effective for single-cell research. Yokogawa’s nanopipette technology has an extremely small impact on cells as it uses ultra-thin glass tubes whose tip is several tens of nanometers in diameter, and is thus best suited to research using living cells. It can also shorten the time involved in cell detection, injection, etc. by automating these processes. Yokogawa’s solutions for single-cell analysis contributes to improved efficiency of research in drug discovery and life science fields.



Single Cellome Unit SU10

Confocal Scanner Unit Applied to Life Science Experiments on International Space Station

Chiyoda Corporation’s confocal microscope system “COSMIC,” equipped with Yokogawa’s confocal scanner unit “CSU-W1,” has arrived at the Japanese Experiment Module “Kibo” of the International Space Station (ISS). CSU-W1 is a unit that, when combined with a microscope, enables real-time observation of the movement of proteins and physiological responses within living cells. The arrival of COSMIC has enabled experiments in a microgravity environment at an altitude of approx. 400km above ground. Its contribution to basic life science and cell therapy looks promising, as space experiments in the field of life science aimed at creating 3D organs, etc. are due to be conducted from autumn 2020 onwards.



COSMIC confocal microscope system © JAXA



"KIBO," the ISS's Japanese Experiment Module © JAXA/NASA



Response to COVID-19 Pandemic

Factories and plants of our customers are no exception in that they have been heavily impacted by the COVID-19 pandemic. Chemical plants that produce raw materials used in various industrial products and crucial social infrastructures such as power plants cannot suspend operations despite the impact of COVID-19. They continue to operate 24 hours a day, 365 days a year while taking various measures to prevent infections from occurring at sites.

One of Yokogawa’s strengths is that it has a mechanism to continue providing services to

customers’ production facilities and plants over multiple decades. For this purpose, we have made preparations based on projections of various risks, including pandemics. Yokogawa has been providing services consistently even amid the COVID-19 pandemic, including deliveries of systems to customers’ plants and maintenance services in the event of any abnormality at plants. We aim to achieve a sustainable society by suppressing the COVID-19 pandemic through the acceleration of remote operations and contribution to medical institutions.

Yokogawa’s Solutions

Remote Service Available 24 Hours a Day, 365 Days a Year

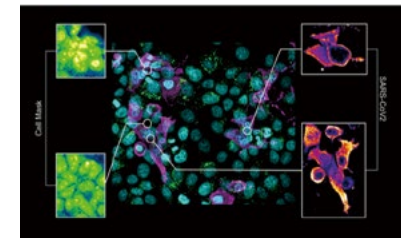
Since before the COVID-19 outbreak, a cloud-based work environment has been in place for Yokogawa’s global team unhindered by national borders to execute projects, enabling the checking of systems in a remote work environment. We also provide remote online support to customers regarding their issues at production plants in the same manner as online diagnosis performed by medical doctors. Furthermore, we have a global network capable of providing remote support promptly 24 hours a day, 365 days a year, in the event of any abnormality at a plant. By utilizing such digital technologies, Yokogawa contributes to the continued operation of plants that serve as crucial social infrastructures.



Global Response Center

Supporting the Development of Drugs for Treating COVID-19

Research institutes around the world are struggling to promptly develop a drug to treat COVID-19. Yokogawa’s Confocal Quantitative Image Cytometer “CQ1,” which uses its confocal scanner technology, is being used in drug repositioning (i.e., diverting an existing drug for the treatment of diseases other than those for which the drug was originally intended) as well as the research on novel coronavirus-infected cells at the University of Michigan (U.S.), the University of Bristol (U.K.), the Charité University Medicine Berlin (Germany), the University of Helsinki (Finland), etc. It looks promising for shortening the development period by utilizing existing drugs—whose safety, side effects, etc. have already been verified in clinical trials—in the treatment of COVID-19, and for discovering substances that can be applied to the development of new drugs by analyzing the infection process in detail.



Morphological profiling of cells infected with the novel coronavirus using CQ1 (Image source: Michigan Institute for Clinical & Health Research)



Sustainability Management

To achieve sustainable growth and increase corporate value, Yokogawa operates its businesses by setting medium/long-term sustainability targets, having incorporated sustainability into the focus of management.

This chapter will introduce our progress in achieving the sustainability goals, governance structure, code of conduct, risk management, etc.

CONTENTS

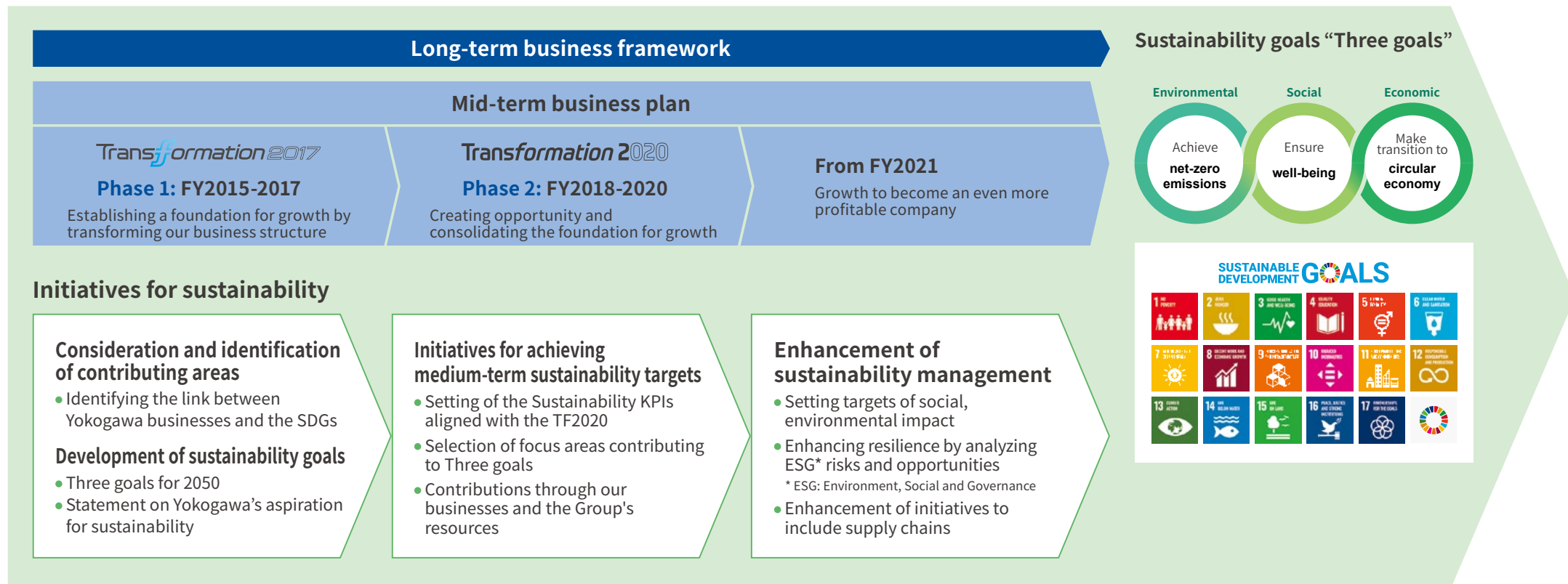




Roadmap to Achieving the Sustainability Goals

To meet Three goals and achieve a sustainable society by 2050, Yokogawa has set mid-term sustainability targets that are aligned with the long-term business framework and the mid-term business plan.

In 2016, we identified areas where we can contribute to the SDGs, and in 2017 announced a statement on our aspirations for sustainability and our goals for achieving a low-carbon and circular society as the “Three goals”. The TF2020 mid-term business plan, which commenced in 2018, identified sustainability focus areas to be achieved by 2030 and set ambitious targets. Based on this, we selected concrete value creation themes, set targets, and have been working to achieve them. We will bring sustainability management to the next level by, for example, setting targets for social and environmental impact.





Progress Towards the Sustainability Goals in FY2019 (Business Initiatives)

We have set focus areas targeting 2030 with respect to each of our “Three goals” (i.e., net-zero emissions, well-being and circular economy) as well as mid-term sustainability targets in consistent with the TF2020 business plan. Setting the number of projects, net sales, etc. as key performance indicators (KPIs), we are making Group-wide efforts to achieve these goals while implementing the Plan-Do-Check-Action (PDCA) cycle.

In FY2019, for net-zero emissions, we have increased the greenhouse gas avoided amounts largely by contributing to the construction of infrastructures such as for LNG, geothermal and biomass power generation. For well-being, our life innovation business, which involves improving the efficiency of pharmaceutical and food industries’ value chains as a whole, experienced growth. For the circular economy, we made a contribution with our overseas water environment improvement business, businesses which improve corporate management efficiency including optimized operation and long-term stable operation of plants by utilizing digital technologies.

■ Vision toward 2050 (Three goals)		Stopping climate change	Quality life for all			Circulation of resources and efficiency			
<p>Targets for FY2030</p>		<p>CO2 emissions avoided:</p> <p>1 billion tons (Cumulative from FY2018 to 2030)</p>	<p>Safety and health value creation:</p> <p>1 trillion yen (FY2030)</p>			<p>Resource efficiency improvement:</p> <p>1 trillion yen (FY2030)</p>			
<p>Business focus areas and overview of value creation stories</p>		<p>Renewable and low-carbon energy Offering of renewable energy and LNG solutions to reduce CO2 emissions</p>	<p>Life Innovation and Safety Support people’s health and well-being through the provision of life innovation solutions and the assurance of safe and comfortable workplaces</p>			<p>Energy saving and resources Contribute to sustainability and economic growth through stable and efficient operation and resource regeneration</p>			
<p>Value creation themes</p>		<ul style="list-style-type: none"> Renewable energy Low-carbon energy 	<ul style="list-style-type: none"> Improved productivity in manufacturing/processing of pharmaceuticals/foods 	<ul style="list-style-type: none"> Support development of drugs and biopharmaceuticals 	<ul style="list-style-type: none"> Improvement of safety 	<ul style="list-style-type: none"> On-site maintenance solutions 	<ul style="list-style-type: none"> Improvement of water environment 	<ul style="list-style-type: none"> Advanced solutions Consulting to improve productivity 	<ul style="list-style-type: none"> Long-term stable operation of plant
<p>KPI</p>		CO2 emissions avoided (cumulative from FY2018)	Customer productivity improvement (compared to FY2017)	Drug discovery systems provided (compared to FY2017)	Safety instrumented systems provided to date	On-site maintenance solutions provided to date	Water environment improvement solutions provided	Customer improvement effect (compared to FY2017)	Maintenance service sales (compared to FY2017)
<p>Targets for FY2020</p>		60 Mt-CO2	Doubled	20 times	3,200 systems	850 solutions	190 solutions	Doubled	+30%
<p>FY2019 results</p>		85.13 Mt-CO2	+60%	Doubled	2,734 systems	443 solutions	223 solutions	+60%	+10%

Mid-term targets for **2030**

Mid-term targets comply with the TF2020 business plan **2020**









2019 Review



Progress Towards the Sustainability Goals in FY2019 (Initiatives for the Group's resources)

To promote transformation to achieve Three goals, Yokogawa also set mid-term targets for the Group foundation, such as infrastructure and tools leveraging IIoT, human resource management which is a key to Yokogawa's growth and environmental management which is a requirement for a company to operate continuously.

In FY2019, we promoted the utilization of our common foundation in new projects, which resulted in an increase in the number of users. For human resources management, the female ratio out of total number of managers within the Group as a whole steadily increased; in addition, we have conducted the Global Employee Engagement Survey (GEES) and identified the challenges and took measures to improve engagement with employees. For environmental management, we achieved our targets for energy usage and greenhouse gas emissions one year ahead of schedule and we are making efforts for further reduction.

Targets for the Group's resources	Common foundation	Human resources management				Environmental management		
Focus areas and outline of value creation story	Yokogawa will improve the infrastructure to encourage the co-innovation of values with customers and will transform the business model to adapt to a circular society.	Yokogawa will seek to create new value by bringing about transformation not only at the organization level but also at the individual level through: diversity and inclusion, which involves proactively recruiting human resources with diverse experience, knowledge, culture, values, etc.; and talent attraction and engagement, which is aimed at developing human resources based on global talent management and creating a rewarding work environment. As for occupational health and safety, which is the bedrock of management, we will focus our efforts on eliminating occupational accidents.				For environmental management at offices and factories of Group companies, Yokogawa has set sustainability indicators for efficient use of water resources, reduction of energy use, and reduction of greenhouse gas emissions. Yokogawa has set a long-term greenhouse gas emissions reduction target for the year 2030 which is aligned with the 2 degrees Celsius target defined in the Paris Agreement.		
Value creation themes	Transformation of business model through infrastructures and tools utilizing IIoT 	Diversity and inclusion  		Talent attraction and engagement 	Elimination of occupational accidents 	Promotion of efficient use of water resources 	Reduction of energy consumption 	Reduction of greenhouse gas emissions 
KPI	Co-creation environment users	Female ratio out of total number of managers	Disability employment ratio (Japan)	Engagement survey score	Occurrence of accidents accompanied by lost work time	Water consumption	Energy consumption (compared to FY2013)	Greenhouse gas emissions (compared to FY2013)
FY2020 target	1,500 users	12.0%	2.3%	Implementation of measures to improve employee engagement	Reduction	Strengthening of measures to efficiently utilize water resources	13% reduction	20% reduction
FY2019 results	1,111 users	10.2%	2.27% (June 1, 2020)	78%	0.34 case per million work hours	513,000m ³	15.5% reduction	23.8% reduction



Sustainability Governance

Yokogawa regards sustainability as one of its key management issues and is continuously working on the improvement of governance.

Moreover, with the aim of realizing the transformations defined in the TF2020 mid-term business plan and gaining the trust of all stakeholders, we also monitor sustainability KPIs and high-priority risks, in addition to management indicators.

Board of Directors

The Board of Directors, of which a meeting is held once a month in principle, aims to achieve sustainable growth and an increase in corporate value of the Group over the medium to 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 forth the general direction of the Group, including corporate strategies. In addition to monitoring and supervising the execution of business by management, including Directors and officers, the Board of Directors develops provisions related to the execution of duties by Directors, and has established a framework to take responsibility for supervising the execution of business.

Audit & Supervisory Board

In order to ensure the Group's sustainable growth and corporate soundness, the Audit & Supervisory Board, of which a meeting is held once a month in principle, makes appropriate decisions and expresses its opinions from an independent and objective standpoint. Audit & Supervisory Board Members attend meetings of the Board of Directors and the Management Board and other important meetings, hold regular meetings with the respective departments in charge of internal audits and legal affairs, as well as the department in charge of business ethics, which promotes the compliance framework, and exchange and share information and proactively make suggestions about the activities of each department.

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

Internal Control System

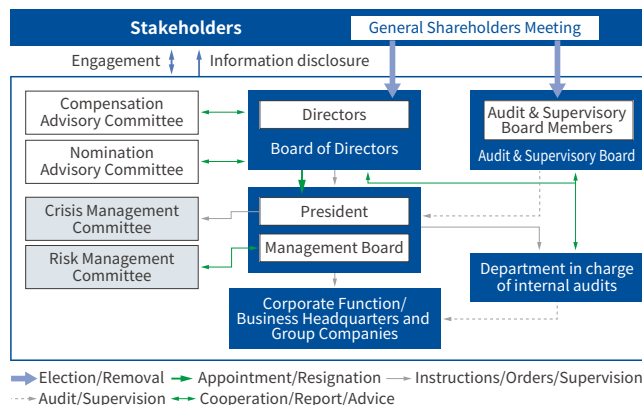
Yokogawa has put an internal control system in place to ensure the appropriate operation of business by allocating business resources such as human resources, assets and budgets appropriately and moving such resources in a functional manner for the purpose of increasing corporate value. We aim to increase the corporate value of the entire Group by controlling two aspects, namely, improvement of management efficiency and prevention of scandals.

Risk Management

The Risk Management Committee selects significant risks that should be managed preferentially, decides their monitoring methods, 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 the countermeasures against risks. 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.

Sustainability Governance Structure



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.

Separate management cycles have been defined for each of the two significant activities relating to sustainability, namely, activities to increase corporate and social value using sustainability KPIs as indicators, and activities to promote necessary improvements using ESG (Environmental, Social, Governance) assessment results, etc. as indicators, both of which are subject to monitoring and supervision by the Board of Directors. Non-financial items are reported to the Board of Directors as 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 such factors as changes in social conditions, progress in sustainability KPIs, feedback from stakeholders including ESG evaluation organizations, and ESG risk assessment results, while incorporating independent views from outside the company.

- Confirmation of progress towards sustainability targets
- Disclosure of sustainability information based on TCFD
- ESG assessment results and improvement measures
- Revision of the Yokogawa Group Code of Conduct
- Efforts to tackle human rights issues

Sustainability Management Cycle

	April to September	October to March
Stakeholders	Communication with stakeholders	
	ESG assessment responses	ESG assessment feedback
Monitoring and supervision (Board of Directors)	ESG risk report Sustainability activity report	ESG risk assessment Internal control assessment
Business execution (Management Board)	Management of mid-term business plan	
	Annual review of sustainability KPIs	Mid-year review of sustainability KPIs
	Implementation of internal control system	



Risk Management

The Yokogawa Group has in place within its respective 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 with which to respond promptly to any event that could have serious impact on its operations.

Risk Management Structure

We define uncertainty that might affect the Group's corporate value as risk and categorize and manage this in terms of business opportunities, compliance, and crisis events.

In order to realize effective risk management in the Group, we have established a Risk Management Committee chaired by the president and CEO, who is responsible for supervising all matters in relation to the risk management. The Risk Management Committee selects critical risks for the Group requiring priority management and regularly checks the progress of activities.

As part of independent risk management activities, each Group organization identifies and assesses risks, and plans and implements countermeasures against them. Each

organization has a risk manager and a network for the Group's risk management.

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

Internal Control System

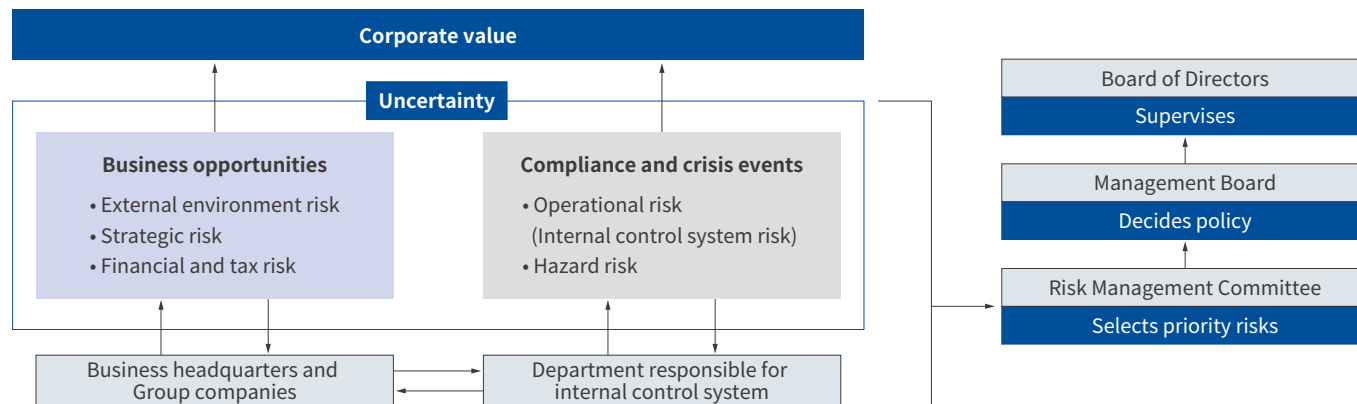
At Yokogawa, internal control is a management process for optimizing business activities, whereby business resources, such as human resources, assets, and budgets, are allocated appropriately and used effectively to increase corporate value.

In order to improve management efficiency and ensure compliant operations, the Group Management Standards (GMS), the Yokogawa Group's most important regulation, was established to clarify the roles and responsibilities of the Group's operational processes and develop an internal control system. Group-wide rules have been established while departments have been designated to oversee each of the following systems: business ethics, decision-making, operations management, crisis management, and corporate auditing infrastructure. The individuals responsible for internal control systems work in their system auditing capacity to ensure (i.e., maintain and improve) the effectiveness and efficiency of all Group company systems and the soundness of financial reports.

Important matters are reported to the Board of Directors and the Audit & Supervisory Board Members. When implementing the internal control system, the relevant result indicators and action indicators are clearly defined and a PDCA cycle is implemented based on the extent to which indicators have been achieved. In accordance with the Yokogawa Group Management Internal Audit Code, the effectiveness of the internal control system is audited by the department in charge of internal audits.

These activities are undertaken to ensure the appropriateness of its operations and increase the corporate value of the entire Group.

Risk Management Structure





Escalation of Information

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 back to senior management.

To address this issue, we have established the Yokogawa Group Crisis Reporting Guidelines and ensure that all Group employees are made aware of them. These guidelines stipulate details such as the information to be reported, as well as reporting routes and processes. Every year we revise these guidelines and take steps to improve the escalation of information.

Business Continuity Management (BCM)

Our control business, Yokogawa's core segment, is closely tied to social infrastructure such as electricity, gas, water, and sewerage. To continue with our business activities in the event of a disaster and take action as quickly as possible to help maintain and restore social infrastructure, we developed the Yokogawa Group Business Continuity Plan (BCP).

We developed response plans and action guidelines assuming risks that could seriously impact the Group's management, such as a huge earthquake or an epidemic of contagious disease, both of which are considered potential eventualities. We have been collaborating with the Group companies worldwide to improve these plans and guidelines. Further, in order to enhance the effectiveness of our BCP, regular training is provided by members of the risk management organization, including senior management, to identify problems, and BCM 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 in case of emergency. These activities were utilized to provide a prompt initial response to the series of earthquakes in 2016, namely, the 2016 Kumamoto Earthquake and the 2016 Central Tottori Earthquake. Yokogawa will continue to review its BCP to respond to disaster risks.

Protecting Employees Working Outside Japan from Crisis

To protect its employees working all over the world from crises (such as terrorism, riots, kidnappings, and crimes in general), Yokogawa gathers information on risks in all regions of the world and sends alerts directly to employees working in applicable areas. Recognizing the importance of ensuring that all employees understand the situations in areas where they conduct business on a daily basis, Yokogawa periodically delivers international security news to all its employees. In addition, we provide counterterrorism training outside Japan to help employees keep themselves safe, and hold seminars to provide them with relevant knowledge. Yokogawa will continuously consider various new measures and improve on existing measures to ensure the safety of its employees.

Training for Protection from Terrorism and General Crime

Recently we have seen general crime, terrorism, and violence occurring all over the world, as well as international travelers falling victim to crimes. In such circumstances, employees traveling abroad on business need to do more to prepare and take appropriate safety measures.

Yokogawa invites outside expert instructors to hold seminars on self-protection, including specific steps to take to minimize harm in the event of a terrorist attack, violence, or general crime.

In FY2019, we held a seminar entitled "Safety and Dealing with Terrorism or Trouble Overseas" that comprised a lecture and practical training. Outside security experts (including former members of the US Special Forces and the Japanese Self-Defense Force) provided instruction and demonstrations both in English and Japanese, and conducted practical training involving the participation of the attendees.



A scene from the training



Code of Conduct and Compliance

Yokogawa places the utmost priority on compliance and conducts its business activities in compliance with 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 for action our employees should observe in order to realize Yokogawa’s corporate philosophy, while the Yokogawa Group Compliance Guidelines prescribe the specific actions each and every employee should take. In 2019, we conducted a complete review and revision of the content of the two documents in response to the changing expectations and demands of the global community toward corporations.

Yokogawa Group Code of Conduct

The Yokogawa Group Code of Conduct sets forth the guidelines for action that all employees of the Yokogawa Group should observe. 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 a sustainable society. Chapter 2 specifies the Yokogawa Group’s ethical standards concerning the Group’s relationship with stakeholders, workers’ rights, and the responsibility of the management team, among other things.

The full text of the Yokogawa Group Code of Conduct is introduced 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 the specific actions employees should take. The Guidelines have been prepared to educate and inform employees and set forth the specific rules and standards all Yokogawa Group employees should observe when they encounter various ethical and legal issues in the course of performing their day-to-day business activities. The Guidelines have been translated into 14 languages and distributed in booklet format to the members of the manufacturing departments. By informing



Yokogawa Group Compliance Guidelines

all group employees of the content of the Guidelines, Yokogawa ensures that its corporate principles are embraced and upheld by each and every employee.

Supporting international Guidelines

The United Nations Global Compact

Yokogawa signed the United Nations Global Compact in 2009 and expressed its support for the 10 principles concerning human rights, labor, the environment, and anti-corruption adopted by the Compact. We are working with our stakeholders to uphold the ten principles through such efforts as participation in Global Compact Network Japan, a local network of Japan. The Global Compact was first proposed by Kofi Annan, former Secretary-General of the UN, at the World Economic Forum in 1999 and was officially launched in 2000. Participating companies are expected to uphold and practice international standards relating to human rights, labor, the environment, and anti-corruption.

ISO26000

ISO 26000, issued by the International Standardization Organization in November 2010, is an international standard relating to the social responsibilities of organizations, presenting seven core subjects including organizational governance, human rights, labor practices, environmental responsibility, and fair operating practices. We at Yokogawa, as a company active in the global marketplace, adhere to ISO 26000 and regard corporate governance as a key foundation of corporate management. As such, we are committed to the implementation of socially responsible activities to meet our shareholders’ expectations, including community contribution through business operations, environmental conservation, and respect for human rights.

President’s Commitment

The Yokogawa Group Code of Conduct sets out the Group’s six basic 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 the relationship of mutual trust with stakeholders. Yokogawa is committed to fulfilling its fundamental corporate responsibilities, including contributing to society through its business activities and maintaining 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, labor, the environment, and anti-corruption. The Company is sharing these principles with its group companies and business partners worldwide. We will continue to strive to fulfill our responsibilities as a global company that develops business worldwide.



Hitoshi Nara President and CEO



Compliance Promotion Structure

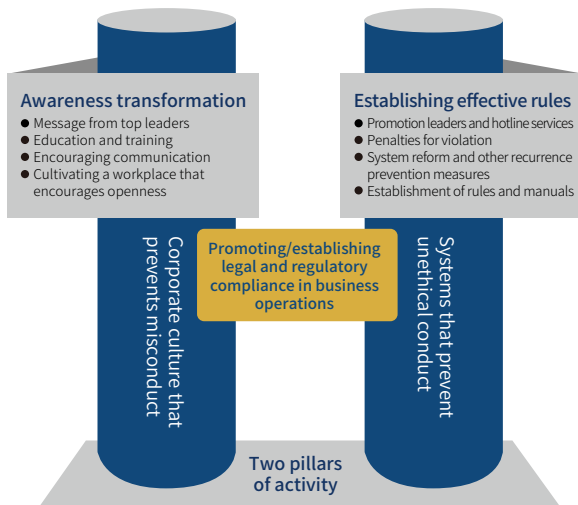
In order to prevent wrongdoings and scandals, Yokogawa promotes sound and transparent business activities with a “corporate culture that prevents misconduct” and “systems that prevent unethical conduct” as the pillars of our compliance activities. At the Yokogawa Group, we are aggressively promoting management practices founded on compliance by establishing a corporate ethics department that is responsible for developing compliance promotion structure and identifying and addressing issues pertaining to

the structure. We have established 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 raising and establishing compliance awareness among employees. Further, representatives of the compliance secretariat and compliance coordinators of respective organizations attend regular meetings of the Compliance Committee to share information and monitor progress in compliance activities.

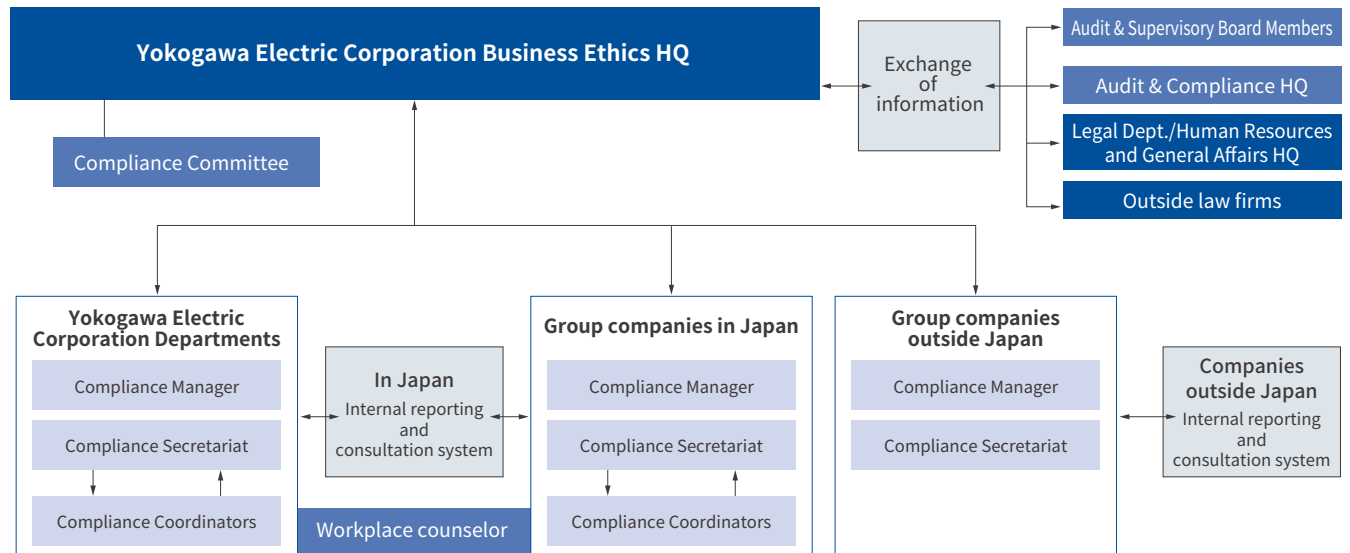
PDCA Cycle for Promoting Compliance



Approach to Compliance



Compliance Promotion Structure





Anti-corruption Initiatives

Yokogawa is working to prevent all forms of corruption, including abuse of power for personal gain and coercion and bribery, by prescribing in the Yokogawa Group Code of Conduct the 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 the Anti-bribery Guidelines and conduct awareness programs and compliance awareness surveys as part of our compliance initiatives to spread and entrench compliance awareness.

Anti-bribery Initiatives

Yokogawa observes the bribery prevention laws and regulations of all countries where its group companies conduct business activities in order to prevent bribery involving public servants and private citizens both at home and abroad. The Group assesses and controls risks of bribery, and the group companies respectively manage such risks. In addition, the Anti-bribery Guidelines are established and disseminated to all employees to prevent bribery and ensure fair and appropriate business practices. Further, we have established the Yokogawa Group Sustainable Procurement Guidelines to call for bribery prevention and are working to implement the guidelines in cooperation with our business partners. No cases of bribery-related violation or penalty were reported in FY2019.

Measures to Prevent Anti-competitive Practice

Yokogawa considers that observance of the competition law is essential for ensuring 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 the competition law, we prescribe specific rules in the Yokogawa Group Compliance Guidelines and the Competition Compliance Code and provide in-house education on the competition law to enhance employee awareness. No legal measures were taken against Yokogawa due to its anti-competitive act, anti-trust law violation or monopolistic practices in FY2019.

Preventing Insider Trading

With the goal of preventing 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 the stocks of Yokogawa Electric must follow the prior approval procedure through the person in charge of insider trading prevention of respective companies.

In addition, the following individuals are subject to a blanket prohibition of the buying and selling of the Company's stocks from the last day of each quarter to the date of announcement of the financial results for the relevant quarter.

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

Tax Compliance Initiatives

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. Making tax payments properly in accordance with the relevant tax laws and regulations of respective countries
2. Implementing appropriate tax-related accounting processes and other related measures
3. Establishing a tax governance structure and striving to raise tax compliance awareness
4. Responsibly performing tax duties in compliance with international tax standards such as OECD Transfer Pricing Guidelines and BEPS (Base Erosion and Profit Shifting) Action Plan
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 respective affiliates
6. Not engaging in tax planning or using tax heaven for the purpose of tax avoidance
7. Optimizing tax costs by such means as avoiding double taxation and utilizing appropriate tax incentives
8. Reducing tax risk by obtaining advice from external professionals in case of uncertainty over the application or interpretation of tax laws and regulations
9. Building, maintaining, and developing sincere, sound, and cooperative relationships with the tax authorities of respective countries



Measures to Counter Anti-social Forces

The entire Yokogawa Group is taking steps to eliminate anti-social 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.

Approx. **195** Group training sessions

Approx. **8,600** e-learning participants

Approx. **310** slogan applications

Compliance Training and Education

Compliance training was held again in FY2019 to spread and establish compliance awareness in all group companies. In Japan, employees have various opportunities to receive role-specific training, including when they join the company, are promoted a managerial position, and are transferred to an international post. Further, e-learning is offered primarily to

group companies outside Japan to help their employees learn comprehensively about important themes regarding compliance and acquire the knowledge required of group employees.

Compliance News

Compliance News is issued every two months to improve employees' compliance awareness. The newsletter features timely topics related to workplace culture and recent corporate scandals.

Examples of Unethical Conduct

A collection of examples of unethical conduct is distributed to employees for the purpose of preventing compliance violations. The collection is updated each year with the addition of new instructive examples compiled from inside and outside the Group and is made available to all employees.

Compliance Week

The "Compliance Week" campaign is conducted to ensure that a compliance mindset is embraced and upheld by all employees of the group companies in Japan. Initiatives include providing education through e-learning and inviting employees to submit compliance slogans.

Compliance Awareness Survey

Each year, a compliance awareness survey is conducted among all employees of the Yokogawa Group. Based on the result, changes in compliance awareness are visualized for each workplace and position and are reflected in the activities for the next fiscal year by respective group companies.

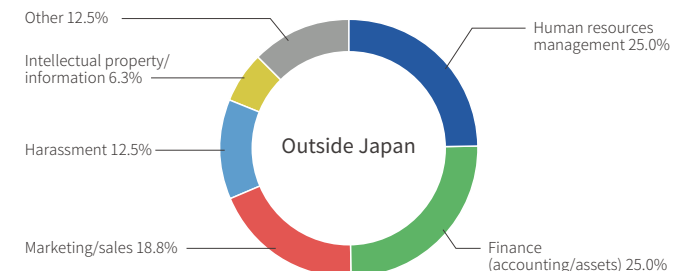
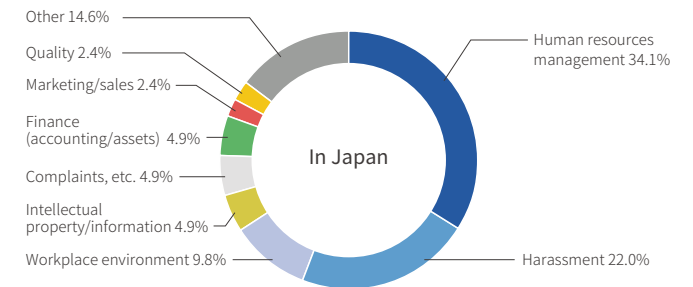
In FY2019, we conducted an engagement survey among all employees of the Yokogawa Group for the purpose of understanding the current situation and increasing employee engagement. The survey was also used to ascertain compliance awareness among employees. The scores for the category "compliance awareness" were overall high according

to the benchmark used for global high-tech manufacturers, revealing the high level of compliance within the Yokogawa Group.

Whistleblowing Hotline

In FY2019, about 60% of the issues reported and consulted at our Japanese sites pertained to human resources management and harassment. Outside Japan, about 50% pertained to unethical conduct in accounting, sales, and other business areas. Posters were distributed to the group companies in Japan to inform the employees of the whistleblowing hotline and further enhance visibility and trust in the service.

Issues Reported/Consulted





Climate Risks and Opportunities (Response to TCFD)

Environment Surrounding Yokogawa

Given that energy, chemical and other manufacturing industries that have a significant impact on global greenhouse gas (GHG) emissions form the clientele of Yokogawa's businesses, climate change has a heavy impact on its business activities in terms of both risks and opportunities. In recent years, our customers have also been dramatically shifting their business strategies in consideration of the issue of climate change.

While the construction of new coal-fired power plants will be curtailed in the medium-term, LNG (which is regarded as a fossil fuel with a relatively small footprint in terms of GHG emissions) is expected to increase in demand, despite the economic slowdown due to the COVID-19 pandemic, as a temporary alternative until renewable energy becomes widespread. Also there is a growing need to reduce GHG by saving energy. Both of these will have positive impact on Yokogawa's businesses.

Markets that will undergo substantial growth in the future—including those of various types of renewable energy, electricity storage, electric power transmission and management of energy supply/demand adjustment—are fields in which Yokogawa will be able to leverage its expertise in measurement and control that it has gained to date.

As these changes present huge business opportunities for Yokogawa, we will proactively propose new solutions and work on business expansion in collaboration with our partner companies.

Formulation of Climate Change Strategy and Disclosure of Information According to TCFD's Recommendations

Based on its determination to proactively address the issue of climate change and prepare itself for the future, Yokogawa expressed its support for 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, reflects the findings in its management strategies and disclose relevant information.

FY2019	Sort climate-related information according to the TCFD's recommendations
FY2020	Incorporate medium/long-term risks and opportunities of climate change into strategies
FY2021	Start executing management strategies and incorporating them into financial impact assessment

Climate-related Financial Information

Governance

Governance around climate-related risks and opportunities

Recommended disclosures:

- a) Board of Directors' monitoring structure
- b) Management's role

Board of Directors' Role

The Board of Directors formulates basic policies for dealing with climate change as well as those regarding improvement of a system for managing risks and opportunities, and monitors and supervises the effective operation of the system, in addition to the setting of sustainability targets and their implementation status. The Board takes into consideration climate-related impacts during discussions of business strategies and plans.

Management's Role

The 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. The management works on sustainability targets linked to the mid-term business plan, including targets related to climate change, and reports the progress periodically to the Board of Directors.

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

[Sustainability Governance](#) [Risk Management](#)

Strategy

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

Recommended disclosures:

- a) Medium- and long-term risks
- b) Impact on businesses, strategy and financial planning
- c) Resilience of strategy regarding climate scenarios

Outline of Strategy

Energy, chemical and other manufacturing industries, which greatly influence global GHG emissions, form the clientele of Yokogawa's businesses. Yokogawa helps customers reduce their GHG emissions through its solutions that realize stable operation, higher overall business efficiency and energy conservation. Yokogawa regards the growth of renewable energy-related markets and business strategy shifts of our customers in responding to climate change as huge business opportunities and we are expanding our businesses under the TF2020.

Long-term Business Framework and Mid-term Business Plan

We evaluated changes in the positioning of energy resources



and the growing need to resolve social issues in the context of changes in our external environment relating to climate change when formulating our long-term business framework, which sets out what kind of company Yokogawa will strive to become by looking 10 years and even further into the future, as well as the TF2020 mid-term business plan targeting FY2020. In light of these changes, we defined the sustainable, low-carbon, and circular society that we will pursue for future generations as the “Three goals.” Sustainability targets which we have set for the medium term are: contributing to the suppression of GHG emissions through the expansion of renewable and low-carbon energy; improvement of customers’ resource efficiency; and reduction of GHG emissions associated with Yokogawa’s business activities.

- Roadmap to Achieving the Sustainability Goals
- Progress Towards the Sustainability Goals in FY2019

Risk Management

Identification, assessment and management processes 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

Outline of Management of Climate Change Risks

We define uncertainty that might affect the Group’s corporate value as risk and categorize and manage this in terms of business opportunities, compliance and crisis events. We have established the Risk Management Committee, which selects high-priority risks that should be managed preferentially at the Group level and monitors the management status of such risks. Macroeconomic trends and large-scale disasters such as flooding that are attributable to climate change are assessed as common risks in the entire organization, the findings of which are factored into the selection of high-priority risks in combination with the assessment of individual risks. Each organizational unit assesses risks associated with climate change on a single year basis as well as in the medium/long run, and takes measures such as risk reduction.

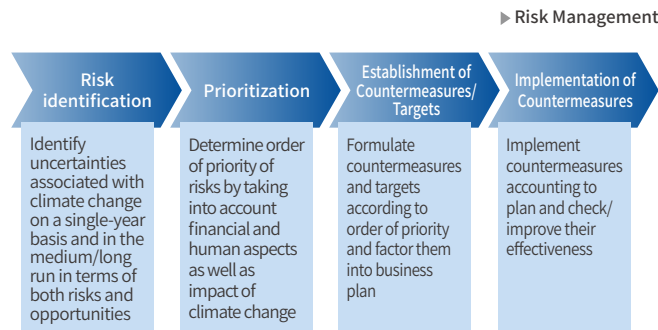
Risk Management Process

At least once a year, each organizational unit of the Group identifies/assesses/prioritizes risks, establishes countermeasures and targets, and implements the countermeasures. The department responsible for internal control system identifies the risks to the Group and establishes and executes countermeasures and targets as a comprehensive manager of risks relating to compliance and crisis events. The secretariat of the Risk Management Committee collects the assessment results of each organizational unit of the Group and categorizes the risks deemed significant from the viewpoint of business opportunities, compliance and crisis events, etc. The Risk Management Committee selects high-priority risks, decides their monitoring methods and reports them to the Board of Directors. The selection of high-priority risks involves evaluating the severity of each risk in terms of magnitude of impact and likelihood of occurrence. In evaluating the magnitude of impact, social and environmental impacts including responses to climate change are taken into account, in addition to financial and human aspects. The Risk Management Committee monitors the risk management status in each organizational unit and reports the findings to the Board of Directors.

The department in charge of internal audits evaluates the effectiveness of the Group’s risk management processes, and reports important matters to the Board of Directors and Audit & Supervisory Board Members twice a year.

High-priority Risks

In FY2019, the risk of rapid changes in market requirements due to the SDGs including responses to climate change was selected and managed as one of the Group’s high-priority risks. This risk was selected again as a high-priority risk in FY2020.



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

In terms of items that have a significant environmental impact, we have set GHG emissions, energy usage and water usage as sustainability KPIs.

As for our GHG emissions performance, we have calculated scope 1 emissions, scope 2 emissions and scope 3 emissions according to the Greenhouse Gas Protocol methodology and disclosed them in this Report.

Our business target has been set at 1 billion tons (from FY2018 to FY2030) in avoided CO₂ emissions to be pursued with customers with the aim of alleviating climate change. We have calculated avoided CO₂ emissions by comparing CO₂ emissions released from average fossil fuel use with LNG production output and renewable energy power generation output by plants where the Yokogawa Group took part in its construction. Our target for business facilities has been set at 34% reduction in GHG emissions (FY2030/FY2013). This target is consistent with the reduction in GHG emissions according to the 2 degrees Celsius scenario of the International Energy Agency (IEA) based on the Paris Agreement.

Our performance in FY2019 was 85.13 million tons in avoided CO₂ emissions (cumulative total since FY2018) and 23.8% reduction in GHG emissions.

- Progress Towards the Sustainability Goals in FY2019
- Environmental Initiatives at Business Facilities



Community Engagement

Yokogawa strives for harmonious co-existence with local communities as a “good citizen,” recognizing the fact 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 in achieving common regional and social goals in all countries and regions in which we do business and thereby contribute to their progress.

We also assist our employees in participating in local contribution activities as “good citizens” and offer volunteer programs in which employees can 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.

Focus areas

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

Guidelines on Corporate Citizenship Activities

Yokogawa Group has established its Guidelines on Corporate Citizenship Activities and promotes its corporate citizenship activities accordingly. We ensure the transparency of 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 FY2019 took the form of financial assistance (184.4 million yen), donations of goods and the opening of its facilities to the public (equivalent to 46 million yen), and support activities by its employees (equivalent to 19 million yen).

According to SDG classification, our activities related to Goal 3 (good health and well-being) turned out to be the highest in number among all corporate citizenship activities in which we are engaged. Out of the 17 goals comprising the SDGs, our activities contribute to 13 goals in total.



Field trip event targeting disadvantaged children in South Korea (Goal 3 of SDGs)



Support for initiatives during science experiment week at 20 schools in India (Goal 4 of SDGs)

Major Corporate Citizenship Activities and Contribution to SDGs in FY2019

Goal 3. Good health and well-being



- Supporting activities of sports organizations and events (Japan, Vietnam and USA)
- Supporting activities to enhance maternal and child health (Japan, Myanmar and Cambodia)
- Blood donation activities (Japan, USA, Bahrain, Saudi Arabia, UAE and Indonesia)
- Visiting and supporting elderly communities (Japan)
- Donations to medical institutions (Japan, USA, Spain, Netherlands, Australia, Singapore, Indonesia, Malaysia, Thailand, Taiwan and India)
- Donations to local cultural events (Japan, UK, Germany, South Korea, Singapore, China, USA, Australia and Vietnam)

Goal 4. Quality education



- Outdoor education events (Japan and China)
- Supporting community education programs and education activities (Japan, USA, Norway, France, UAE, Croatia, Australia, Brazil, South Korea, Austria, Israel, Czech Republic, Nigeria, Poland, New Zealand, UK, Myanmar, Vietnam, Netherlands, Germany, Saudi Arabia, Singapore, Indonesia, Thailand, India and China)

Goal 11. Sustainable cities and communities



- Supporting disaster-afflicted areas (Japan)
- Local volunteer activities (Japan and Turkmenistan)
- Supporting international exchange activities (Japan)

Goal 1. No poverty



- Supporting local community centers (South Korea)
- Providing aid in the form of clothes, livelihood support and assistance for school supplies (Japan, India, Afghanistan, UK, USA, the Philippines, Indonesia, China and South Korea)

Goal 2. Zero hunger



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

Goal 13. Climate action



- Afforestation activities (Australia, New Zealand and Singapore)

Goal 14. Life below water



- Supporting biodiversity activities (Japan, the Philippines and Thailand)

Goal 15. Life on land



Goal 5. Gender equality



- Supporting the empowerment of women (Japan and Australia)



Improvement of Employee Engagement Diversity and Inclusion Human Resources Development A Safe and Comfortable Work Environment

Human Resources Management

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 will introduce our initiatives relating to human resources and occupational health and safety.

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Improvement of Employee Engagement

For the sustainable growth of Yokogawa, it is indispensable for all employees to band together and maximize their strengths as a team in pursuit of a common goal, and each and every employee to grow in this process. Improvement of employee engagement will be an important key.

When employees empathize with Yokogawa’s vision and mission and have pride as a member of Yokogawa, they will deepen their engagement with the company, which will translate into contributing toward achieving goals vigorously and actively. Factors such as mental and physical health, rewarding work and good interpersonal relationships also have an impact on employee engagement. Yokogawa regards improving employee engagement as one of its key management issues and is continuously working on this within the Group.

Global Employee Engagement Survey

To capture the level of employee engagement, we regularly conduct a Global Employee Engagement Survey (GEES) targeting all employees of the Yokogawa Group. GEES is an awareness survey covering 15 categories, including career development, leadership and sustainable engagement. According to the results of GEES conducted in FY2019, positive responses accounted for at least 60% in all categories, and the scores were higher in many categories than in the results of the previous GEES conducted in FY2015.

Results are analyzed from 4 areas: (1) strategy/ direction (2) individual development (3) culture (4) system, to identify the strength to be enhanced and opportunities to be improved.

Setting Sustainability KPIs

Yokogawa has set the score of employees’ sustainable engagement as a sustainability KPI. Using Willis Towers Watson’s model, the score indicates the connection between employees and Yokogawa (think, feel and act), awareness of participating in management, sense of fulfillment of work and degree of satisfaction with the environment/mechanism that supports them. The result in FY2019 was 78%, up one percentage point from the previous survey conducted in FY2015.

Key Findings

Area	Strengths	Opportunities for Improvement
(1) Strategy / direction	Our leadership models Yokogawa Core Values, develops future leaders, gives them confidence in their (senior leadership) decisions and they understand how their work contributes to the realization of a sustainable society.	There is a lack of clear future vision and sharing by leaders, and a lack of employees understanding of how TF2020 strategy relates to their own work achievements.
(2) Individual development	They have personal job development opportunity and growth in Yokogawa, with their immediate managers giving them job recognition at work.	There are still improvement opportunities for their immediate managers to give them regular feedback, leverage more on non-monetary recognition and rewards, and improve management of poor performers.
(3) Culture	Teamwork is encouraged in Yokogawa with a customer-oriented culture. In addition, the company has an Innovation Culture whereby employees are able to challenge traditional ways of doing things.	There are still opportunities to improve collaboration outside their teams, understanding internal/external customer expectations and seek their service experience feedback.
(4) System	The company has an Innovation Culture whereby employees are able to challenge traditional ways of doing things.	Level of empowerment/delegation is still low, and efficiency score had declined. This may be due to the fact that we are in a transitional phase towards building our innovative and highly efficiency process.



Measures for the Group

Based on GEES results, we launched the following three initiatives in FY2020 as efforts to enhance our strengths and make improvements. We will add necessary measures to enhance employee engagement.

1 Understanding of vision and strategy

For better understanding of Yokogawa’s vision and strategy, we introduced a new goal management system, which is designed to cascade the group goal to each employee. By enabling each employee to see all upper class goals, he/she can understand how his/her work contributes to the Group.

2 Enhance co-innovation

We will enhance collaboration by bringing down walls among individuals and organizational units. Specifically, we have built a mechanism whereby individuals can get feedback from employees other than their boss so that cross-organizational projects and other activities outside the organizational unit to which they belong.

3 Self-fulfillment through work

We will encourage each and every employee to broaden his/her views, improve his/her skills and demonstrate his/her presence. Based on the principle of “Plan your own career,” we utilize an open application system to proactively give opportunities to employees who take on challenges. We will also provide various education opportunities by increasing the content of Yokogawa University.

Activity Schedule

	FY2019 3Q	4Q	FY2020 1Q	2Q	3Q	4Q
Milestone	Implementation	Sharing of results	Analysis / action plan		Execution of action	
Activity	GEES	Report to Top management	Analyze overall results			
		Business units & regional HQs / subsidiaries & affiliates	Implement overall measures			
		All employees	Analyze results and examine measures in each organizational unit		Execute measures in each organizational unit	



Diversity and Inclusion

Yokogawa values the culture where employees accept differences of others and respect individuality. To promote this, Yokogawa actively recruits, develops, and promotes 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.

The Diversification of Human Resources

The diversity of our people is our strength as well as a requirement for Yokogawa to expand its businesses globally. Not only overseas but also in Japan, we encourage active participation of human resources of diverse ethnic backgrounds and nationalities. 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. The recruitment of international students at Japanese universities and overseas universities is also increasing. In 2019, we collaborated with Indian universities and recruited science students with advanced IT skills for internships. Also, in Japan, we have prepared the intra-company infrastructures providing company regulations, business notices, cafeteria menus, and internal broadcasts in both Japanese and English, and appropriately offering information to support their livelihood in Japan on the intranet. We have been implementing the training program "Japanese Culture & Communication" to understand cultures and customs from both Japanese and overseas viewpoints. We expect that advancing the diversification and improving the ability to respond will fuse diverse sense of values to create new values.



Flower arrangement in "Japanese Culture & Communication"

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 globally and pursuing its goal of achieving a ratio of Women managers of 7% (non-consolidated) and 12% (global) by fiscal year 2020. In Japan, to actively help women to achieve success in their jobs, Yokogawa also provides assistance with formulating career development plans and career development training. To improve their work environment, seminars are held to raise awareness among managers concerning the need to empower women. At the "Career and Leadership" panel discussion held in July 2020, Yokogawa president (Nara Hitoshi) and women leaders from Yokogawa answered questions from women who attended Yokogawa's career development training program. In recruitment activities, our target rate for female employees is 30% or more, with the long-term aim of optimizing Yokogawa's workforce gender composition. In April 2020, women made up 41.3% of the new graduates joining the company in Japan. To create an environment where various types of employees can comfortably work, have challenging work, and grow, Yokogawa is tackling improvement of its corporate system and culture, by introducing a



Celebrating International Women in Engineering Day by sharing their personal experiences

flextime system without core time, a telecommuting system and a time-unit leave system, keeping pace with work-style reform activities. 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, Labour and Welfare. In July 2016, Yokogawa Electric Corporation was recognized by the Minister of Health, Labour and Welfare as a company whose measures for promoting active female participation is excellent (stage (three stars) that satisfies all five items to be evaluated) globally, regions recognize International Women's Day and promote Women in STEM networks.

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 and encourage them to engage in various fields, such as engineering, sales, and office work.

Yokogawa promotes employment of people with intellectual disabilities, 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.



An employee in charge of the development of new bio equipment for our life innovation business



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 TF2020 mid-term business plan, Yokogawa is pursuing a human resources strategy that is focused on transformation through the strengthening of human resources, promotion of diversity and inclusion, and management of health and productivity for creation of new value through co-innovation with our customers. Moreover, to be a good partner, a good corporate citizen, a going concern, a good brand, and a good employer, we will promote 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 challenge 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 in-house 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.

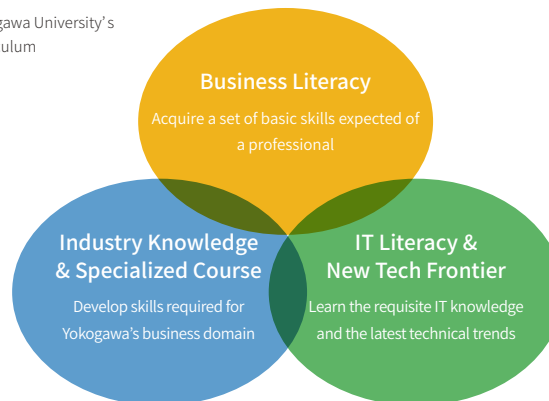
Expanding the Program Content to be Useful for Business Operations

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. A cross-departmental steering committee plays a central role in preparing each program while keeping in mind how an employee will be able to apply the expertise and skills learned in the program to actual business operations.

While the University started with some 120 programs when it opened in October 2018, the number of programs was increased to about 680 by the end of March 2019, and to about 1,950 by the end of March 2020. We will continue to further expand the programs to include content that is useful for business operations. Employees will apply what they learned from the programs to work and generate more value, so as to realize growth for the Company.

Yokogawa University’s curriculum



E-Learning course provided by an in-house expert

Our in-house instructor teaches at a training workshop



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 FY2018 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 in the near future.



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 flex-time 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 7.9% (FY2019). 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 was recognized in 2007 by the director-general of the Tokyo Labor Bureau as a company supporting childcare.

The telecommuting system and time-unit leave system introduced by Yokogawa Electric in FY2016 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 called HataLabo (work style laboratory) 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. As a response to the COVID-19 pandemic that began in February 2020, 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). In FY2019, the time-unit leave system was used by 1,204 employees, more than half of the total employees, for a total of 11,409 hours. Going forward, we will continue to provide a work environment where each and every one of our diverse workforce can take on new challenges and grow while balancing work and life. At the same time, we will use the opportunity afforded by the pandemic to promote new work styles centered around telecommuting.



Workplace Reform

Since FY2018, we have worked on the introduction and improvement of free work spaces. These spaces are intended for many different purposes. For example, Collaboration Space is designed to facilitate internal collaboration; Relaxation Space helps staff members come up with ingenious new ideas; and Concentration Space is for individuals to concentrate on their respective tasks. By allowing employees to freely choose where they work in accordance with the given situation, these spaces are made more efficient and comfortable to work in.



A free work space in the head office of Yokogawa Electric



Management of Health and Productivity

We have been engaging in initiatives to maintain and improve our employees' health, including developing workstyles without any constraints in terms of location or time and a comfortable office environment, managing working hours, and providing health development programs. In September 2016, we established the Health Declaration as our Group-wide basic policy on health management with the aim of further accelerating various initiatives related to employee health from the viewpoint of health and productivity management. From FY2020 onwards, our health and safety framework has been integrated with business processes to turn it into a system that allows activities to be conducted more effectively, including maintaining and improving health and ensuring safety. Yokogawa Electric has been selected as a "White 500" company with excellent health and productivity management practices for four consecutive years.

Health Declaration

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



Health Development Program

In FY2015, Yokogawa started a health development program where 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. In particular, moderate exercise helps to prevent lifestyle-related illness and mental diseases, serves as a stress relief, and improves job performance. Yokogawa's senior executives are also taking part in the program in a company-wide effort to promote good health.



Senior executives participating in the health development program (body composition measurement)

Harassment Prevention

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 FY2016. 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 LGBTs, 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 recurrence. We ensure that employees seeking consultation and employees who contribute to fact-finding investigations will not be treated disadvantageously.

Employee Assistance Program (EAP)

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.

Key Activities Under 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.



Occupational Health and Safety Initiatives

The Yokogawa Group has introduced an Occupational Health and Safety Management System (OHSMS) 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.

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 and promote an occupational health and safety management system.
- Observe the laws and regulations relating to occupational health and safety.
- 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 to maintain occupational health and safety system.
- Provide the education and training to all of the Yokogawa Group personnel.
- Invest management resources appropriately, perform audits on a regular basis and make continual improvements in the

Yokogawa Group occupational health and safety management system.

- Provide the education and training to all of the Yokogawa Group personnel.
- Invest management resources appropriately, perform audits on a regular basis and make continual improvements in the Yokogawa Group occupational health and safety management system.

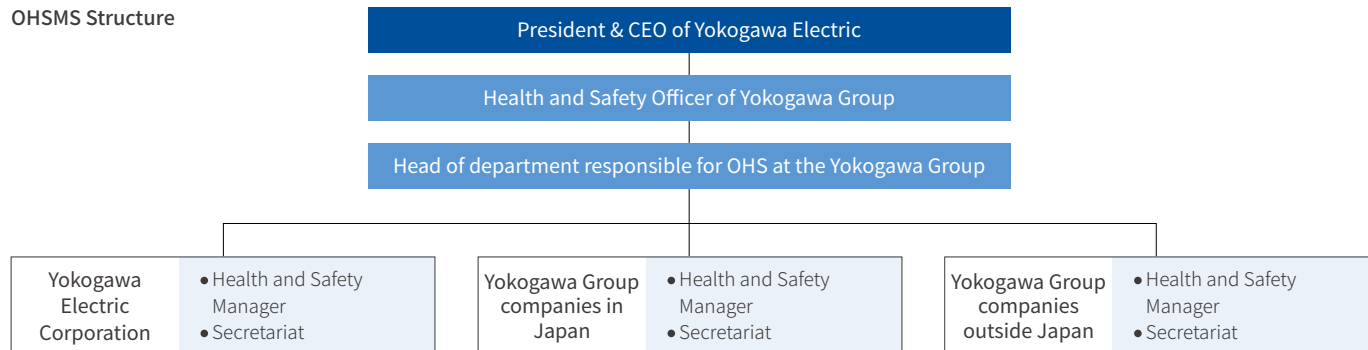
Operation of the Occupational Health and Safety Management System (OHSMS)

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 periodic risk assessment and is 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.

Yokogawa Group Occupational Health and Safety Objectives

- Elimination or reduction of occupational accidents. Secure safety and promote health for personnel involved.
- Establishment, maintenance and improvement of occupational health and safety management system. OHSMS is;
 - (1) To make continual improvements in OHS activities, through implementation of PDCA cycle and sharing OHS activity information.
 - (2) To conduct risk assessments in all Yokogawa Group Companies, for eliminating or reducing risks.
 - (3) To maintain OHS at its current level or improve it by carrying out OHSMS audits.
- Observation of laws and regulations. Observe all OHS-related laws and regulations.
- Conduct of OHS activities is;
 - (1) To maintain and/or improve OHS control level.
 - (2) To build awareness of traffic safety.
 - (3) To provide OHS training.
 - (4) To conduct fire and evacuation drills.
- Disclosure of OHS information. Communicate openly with Group personnel and the local community about OHS activities and results.

OHSMS Structure





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.



First-aid training (Yokogawa Electric)

Yokogawa Safety Handbook

As part of our measures to achieve our mid-term sustainability target (elimination of occupational accidents), we published the Yokogawa Safety Handbook in FY2019. 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 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.

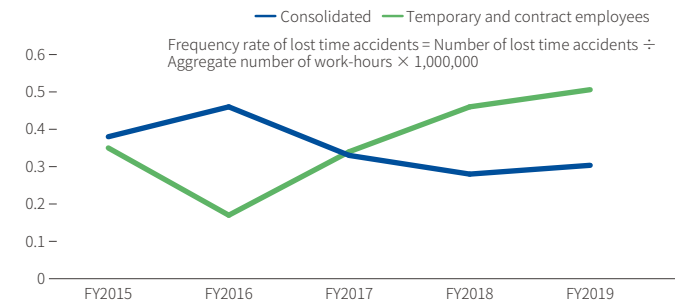


Yokogawa Safety Handbook

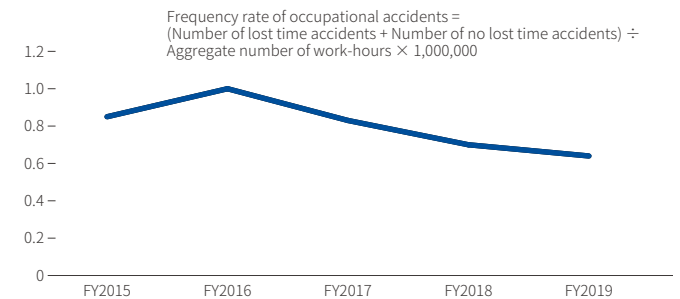
Elimination and Reduction of Occupational Accidents

To eliminate and reduce occupational accidents and improve the quality of health and safety activities, the Yokogawa Group aggregates and analyzes data and information on occupational accidents on a quarterly basis. The information is provided throughout the Group on the intranet to prevent recurrence of the same or similar accidents.

Frequency rate of lost time accidents



Frequency rate of occupational accidents





Environmental Management

Climate change and resource problems may impact the continued existence of not only business activities but also humankind.

Yokogawa has taken initiatives to protect the global environment.

This chapter explains our environmental conservation activities.

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Environmental Management

Environmental Policy

In keeping with its corporate philosophy of “contributing to society through broad-ranging activities in the areas of measurement, control, and information,” Yokogawa will undertake environmental conservation activities to achieve the Three goals for 2050 and realize a sustainable society.

- Establish an environmental management system and clarify its roles, authorities, and responsibilities.
- 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 reduce, reuse, and recycle resources, conserve energy, and prevent global warming, while reducing the risks of environmental pollution by minimizing substances having an environmental impact in all operations.
 - (2) Develop and produce environmentally friendly products by evaluating the environmental footprint throughout the products’ lifecycle, from material procurement, manufacturing, and distribution, to product use and disposal.

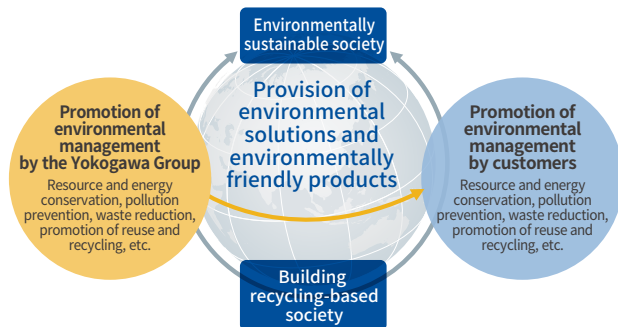
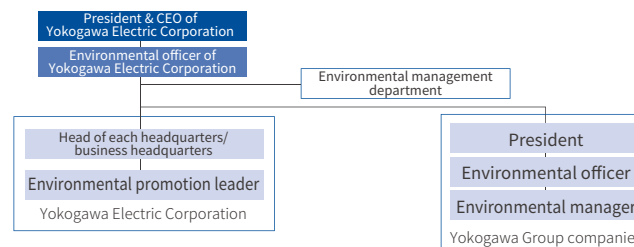
- (3) Provide society with value-added solutions and services that contribute to environmental conservation through measurement, control, and information technologies.
 - (4) Strive to co-exist with society as a good corporate citizen by participating in environmental conservation activities and encouraging employees to take part in voluntary activities.
- Provide all Yokogawa Group personnel with the education and training necessary to pursue 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 co-create 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.

Yokogawa Electric Corporation and Yokogawa Manufacturing Environmental Policy

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 Promotion Structure



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 Audit

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.



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".

(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, recycling-disposal design and processing as well as the design considered processing and assembly and the guideline for selecting materials and parts.

(4) Criteria for hazardous substances contained in products

The following criteria are provided to ensure that environmentally friendly parts and materials are selected during the design phase. Controlled substances are classified into five different levels:
Banned Substance 1: Any substance that is banned from inclusion in a product

Banned Substance 2: Any RoHS command regulated substance

Controlled Substance 1: Any SVHC (substance of very high concern) under the REACH regulation

Controlled Substance 2: Any substance that is banned at certain concentrations, bound by the limited purposes of use or restricted in any way

Controlled Substance 3: Any substance for which the amount contained in a product must be identified

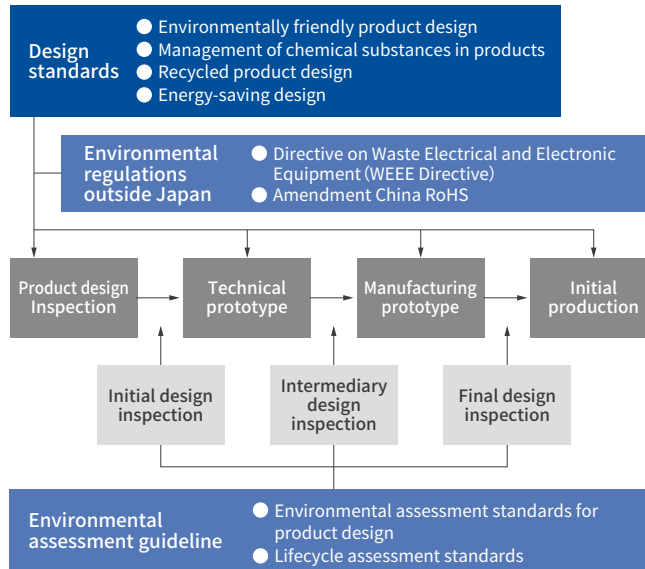
(5) Recycled Product Design Standards

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

Environmentally Friendly Design and Assessment Standards



LCA Label

Yokogawa began to conduct the life cycle 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.

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 its 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. Life cycle assessment has been conducted according to Yokogawa's engineering specifications.
2. The results of life cycle assessment are disclosed on the Yokogawa website according to the company's internal rules.

The LCA-labeled products are disclosed on the Yokogawa website.



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 eco-balance helps us effectively use resources, raise energy efficiency, and improve the waste recycling rate.

Compliance

In FY2019 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	FY2019	
INPUT	Energy	Total Energy	1,463TJ	
		Power	Purchased power	124,688MWh
			Renewable energy	120MWh
		Petroleum	Light oil	506kL
			Gasoline	2,859kL
	Kerosene		12kL	
	Gas	City gas	2,058kNm ³	
		LPG	329t	
	Heat		108GJ	
		Utility water	338km ³	
Water	Ground water	175km ³		
	Substances	Paper	222t	
Hydrogen fluoride and its water-soluble salts		2t		
Ferric chloride		11t		
Xylene		1t		
Hydrazine		3t		
		Type of Environmental Footprint	FY2019	
OUTPUT	Atmosphere	Greenhouse Gas (GHG)	78,770t-CO ₂ e	
		NOx	3.8t	
		SOx	0.2t	
Discharges into water bodies	Industrial wastewater	73km ³		
	General wastewater	401km ³		
Waste	Non-hazardous (Landfilling)	613t		
	Non-hazardous (Incineration)	393t		
	Non-hazardous (Recycling)	3,333t		
	Hazardous	574t		

* Data covers sites in and outside Japan

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 (FY2019)

(Unit: millions of yen)

Category	Item	Main Initiatives	Capital Investment	Related Costs
Costs for reducing environmental impact of factories (areas of operation)	Pollution prevention costs	Monitoring and measurement	13.2	68.7
	Environmental conservation costs	Energy savings	266.7	680.3
	Resource recycling costs	Waste reduction, water conservation	0.0	100.4
Costs for reducing environmental impact of procurement and logistics (upstream and downstream costs)		Green procurement	0.0	26.7
EMS maintenance costs		EMS updates, education	0.0	159.9
Environmental conservation costs in community activities		Environmental events	0.0	42.7
Costs for correcting damage to the environment		Soil recovery	0.0	0.3
Total			279.9	1,079.0

* Data covers ISO 14001-certified manufacturing sites

Effects of Environmental Conservation Measures

Category	Description of Effect	FY2018	FY2019
Inputs	Total amount of energy consumed (TJ)	1,064	1,021
	Total amount of water withdrawal (km ³)	446	402
Global warming prevention	CO ₂ emissions (t)	54,598	51,493
Outputs	Total amount of waste generated (t)	3,764	3,812

* Data covers ISO 14001-certified manufacturing sites

Economic Effects of Environmental Conservation Measures (FY2019) (Unit: millions of yen)

Segment	Amount
Revenue from recycling (sale of valuable resources, etc.)	59.5
Reduction in expenditures due to resource and energy savings (power, water, paper, etc.)	131.3
Total	190.8

* Data covers ISO 14001-certified manufacturing sites



Environmental Initiatives at Business Facilities

Global Warming Prevention

The Yokogawa Group has set a mid-term GHG emissions reduction target for FY2030 based on the 2°C target defined in the Paris Agreement. With the aim of achieving the FY2030 target, we are improving the operation of production lines and introducing high-efficiency air conditioning equipment, inverters, and LED lights. In offices and factories, we are saving energy by visualizing the use of energy to detect and reduce wasteful practices.

To optimize global logistics, our packaging has been redesigned and made lighter and smaller. We also review procedures and routes for shipping products in an effort to improve transportation efficiency.

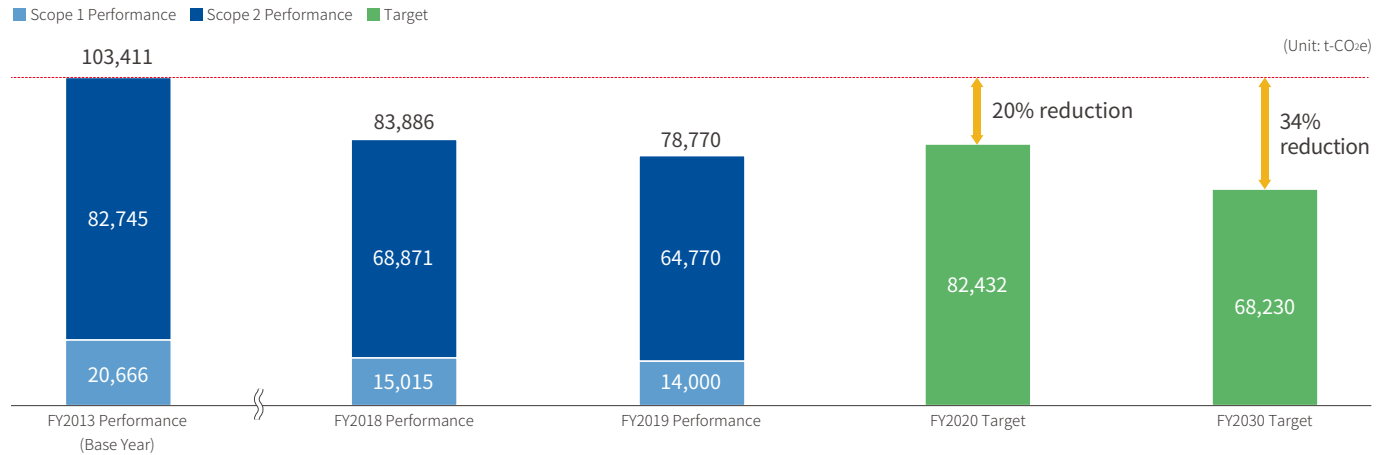
Target for the Reduction of GHG Emissions and Performance

Aiming to achieve the Yokogawa Group’s target for 2030 and reduce GHG emissions across the Group, we are pursuing energy-saving measures and transitioning to renewable energy.

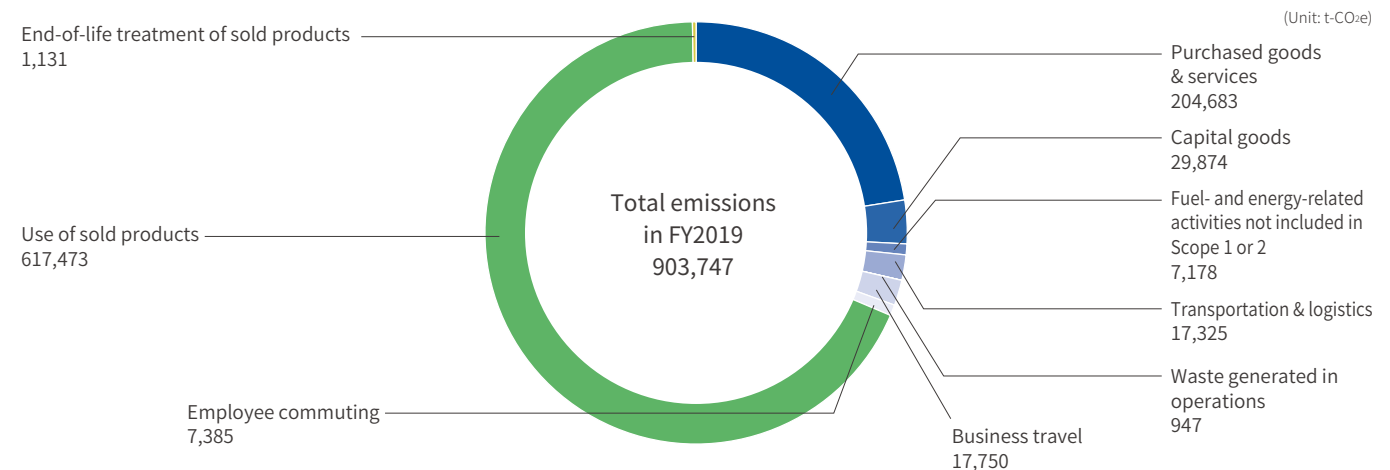
GHG Emissions in Our Supply Chain

We monitor and calculate indirect greenhouse gas emissions from our supply chain (Scope 3) as well as direct emissions from our fuel use (Scope 1) and indirect emissions from purchased energy (Scope 2).

GHG Emission Reduction Targets for FY2020 and FY2030 and Performance



GHG Emissions in Our Supply Chain (Scope 3)

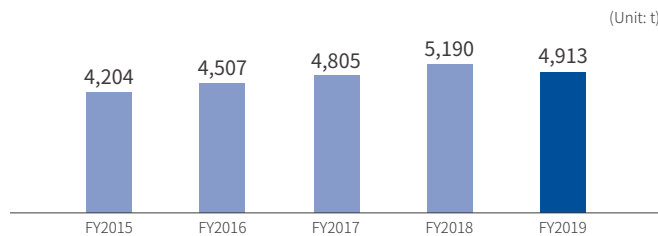




Reduction of Waste

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

Total Waste Generation



Waste sorting at the recycling center



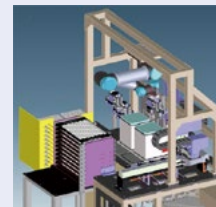
Chemical Substance Reduction

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 Chemical substances), we are implementing initiatives for the reduction and proper management of such chemical substances.



Reduction of organic solvents by the introduction of vacuum drying/washing machine Japan

Yokogawa Manufacturing's Komagane Factory manufactures sensors, which are key components of transmitters for measuring the flow rate and pressure of liquid, gas and steam. In the sensor assembly process, water needs to be removed after the components are washed in pure water. The water removal task used to be done by dissolving water with isopropyl alcohol (IPA), an organic solvent. In 2019, we introduced a vacuum drying/washing machine, which makes a robot perform all conveyance tasks inside the machine and can vaporize moisture by heating the components at low temperature in a vacuum. Given that IPA is flammable and toxic, health hazard and fire risks can be eliminated by abolishing its use. We will strive to improve the environment as well as occupational health and safety while ensuring product quality.



Automatic vacuum drying/washing machine

PRTR Substances

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

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

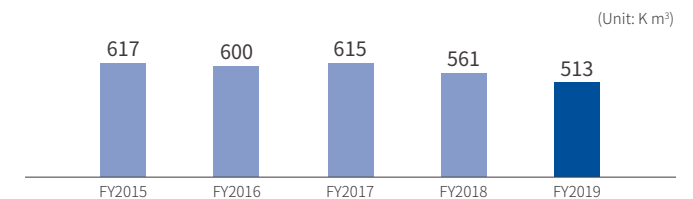
PRTR Data (FY2019)

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	1,597	3.4	110	0	0	0	0.1
	Hydrazine	2,620	0	0	0	0	0	0
	Xylene	1,100	680	0	0	0	0	420
	Ferric chloride	6,288	0	0	0	0	0	0
Yokogawa Manufacturing Kofu Factory	Ferric chloride	4,900	0	0	0	0	0	0

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.

Water Withdrawals





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 (Singapore)

Yokogawa Electric Asia takes the following steps to support the measures introduced by the Singaporean government to maintain drinking water resources and utilize alternative water resources:

- Comply with the guidelines set by PUB (Public Utilities Board) to avoid excess use of water.
- Participate in the NEWater (recycled water produced from treated used water) project, a national initiative promoted by the Singapore's government, and use NEWater for air conditioning systems instead of normal tap water.
- 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 contributes to the government's water protection measures through initiatives such as the following:

- 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.
- Raise awareness on water protection among employees.
- 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.

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 events.
- **Considering biodiversity conservation within business facilities**
Operate business facilities while giving consideration to the ecosystem by, for example, managing their green areas.



Tree planting activity for promoting biodiversity in the Philippines

In 2019, Yokogawa Philippines Inc. on its 24th anniversary gave back not only to the people but also to the environment by planting more than 400 Malapapaya (Polyscias Nodosa) Trees in La Mesa Watershed.

La Mesa Watershed is a 2,700-hectare piece of land controlled by Metropolitan Waterworks and Sewerage System (MWSS). 2,000 hectares of this property are dedicated to woodland and wild life that serves as habitation to different species of floras and faunas. It is also covered with indigenous and foreign vegetation that releases tremendous amount of oxygen, which act as a carbon dioxide sink, and eliminator of harmful gasses such as sulfur dioxide and carbon monoxide providing clean air to breathe in. Likewise, La Mesa Watershed is the only watershed that provides potable water to Metro Manila.



Tree planting activity in La Mesa Watershed



Responsibility in Value Chain

Yokogawa contributes to building a sustainable society not only through its businesses but also through value chains as a whole.

This chapter will introduce our initiatives including those for human rights, management related to supply chains and information security.

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Respect for Human Rights

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 variety 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 for value co-creation 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 following Yokogawa Group Human Rights Policy as a commitment to fulfill this responsibility.

Yokogawa Group Human Rights Policy

1 Compliance with Human Rights-related Laws and Regulations and Respect for the International Code of Conduct

Scope and Corporate Structure

This policy applies to Yokogawa Electric Corporation and its group companies (hereinafter referred to as "Yokogawa Group"). We also expect and encourage our suppliers, business partners and other stakeholders to respect human rights in accordance with this policy. To achieve this goal, we have established a corporate structure in which the President and Chief Executive Officer serves as the Group's chief executive officer for human rights, and we continue to implement initiatives to this end.

Related Laws and International Codes of Conduct

Based on the UN Guiding Principles on Business and Human Rights, the Yokogawa Group respects human rights as defined in international norms such as the Universal Declaration of Human Rights, the International Covenants on Human Rights (International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights), and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work.

We comply with laws and regulations in the countries or regions in which we conduct our business, and where there is a

gap between laws and international norms, we respect international norms to the extent possible.

2 Implementation of Human Rights Due Diligence Addressing Human Rights Risks

The Yokogawa Group identifies human rights risks associated with our business activities, collaborates with relevant stakeholders, and establishes and continuously operates mechanisms to prevent or mitigate risks.

Correction

If the Yokogawa Group is found to have caused or been involved in any negative impact on human rights, we will work with relevant stakeholders to remedy the situation. We also establish and maintain a grievance procedure for this purpose.

Education

To ensure that this policy is understood and practiced by all people working for the Yokogawa Group, we regularly provide education and awareness-raising programs on respect for human rights. We also take the necessary steps to promote understanding and implementation of the Group's human rights policy to suppliers and business partners associated with our business.

3 Yokogawa's Priority Human Rights Issues

The Yokogawa Group's business is supported by a variety of stakeholders, including customers, business partners, suppliers, employees, and civil society. In order to respect the human rights of all people who are involved with the Yokogawa Group, we actively engage in the following priority issues.

Prohibition of Discrimination and Harassment

We prohibit discrimination of any kind based on race, skin color, age, sex, gender identity and expression, sexual orientation, religion, belief, political opinion, nationality, ethnicity, place of origin, disability, family relations or any other circumstances against any person associated with the Group. Furthermore, we do not tolerate harassment of any kind that harms their dignity.

Respect for Workers' Rights and Approach to the Supply Chain

In order to protect the human rights of all workers in the Yokogawa Group, we take the following actions and strive to build a more sustainable and resilient supply chain that ensures the same actions are taken in the supply chain in order to protect the human rights of other workers involved in the Yokogawa Group's business activities.

● Ensuring occupational health and safety

We are committed to ensuring the safety and health of our workers and to providing them with a fulfilling and comfortable work environment.

● No child labor/forced labor

Child labor, forced labor, slave labor, and trafficking are prohibited.

In addition, we prohibit young workers from engaging in hazardous work.

● Respect for the rights of foreign/migrant workers

We give due consideration to the human rights of foreign workers and migrant workers.

● Freedom of association and respect for collective bargaining rights

We respect the freedom of association and the right to collective bargaining, which are the fundamental rights of workers. We engage in ongoing dialogue with employees in order to ensure a better work environment for our employees.

● Prevention of low wages and long working hours

In order to promote the lives and health of workers, we pay wages that exceed the minimum wages and living wages and manage working hours appropriately.

Respect for Rights of Vulnerable People

We respect the human rights of local and indigenous peoples, children, people with disabilities, minorities, women who are subject to gender discrimination or constraints, and people with disabilities who are socially vulnerable, including the elderly. We also engage in responsible procurement to avoid complicity in conflicts and human rights abuses related to mineral sourcing.

Protection of Privacy and Personal Information

We conduct our business activities with due consideration to the privacy of people involved with the Yokogawa Group and the protection of their personal information.

4 Communication and Engagement

This policy was formulated in consideration of expert advice from outside the Group to demonstrate the Group's attitude and commitment to human rights. In order to resolve human rights issues identified through human rights due diligence, the Group will actively and continuously engage in dialogue and collaboration with stakeholders and evolve its efforts to respect human rights. The progress of these activities and initiatives to resolve human rights issues will be regularly disclosed to the public.

The Group has set sustainability goals for 2050 to realize the well-being of future generations, and we are working to achieve net-zero emissions (stopping climate change), ensure well-being (quality life for all), and make the transition to a circular economy (circulation of resources and efficiency). We firmly believe that respect for human rights is the basis for achieving these goals, particularly well-being. The Yokogawa Group will respond swiftly to dynamic social conditions, such as climate change and infectious diseases, confront ever-changing human rights issues, and sincerely implement this initiative together with our employees, business partners and suppliers around the world.



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 concrete human rights initiatives.

Human Rights Due Diligence

Yokogawa is committed to implementing human rights due diligence to identify, prevent, and mitigate potential negative impacts on human rights throughout our business and the

supply chain and to achieve accountability 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 with taking corrective actions when we identify problems.

In addition, we have set up whistleblowing hotlines for everyone working at Yokogawa as a means to prevent human rights violations.

Human Rights Risk Assessment

In fiscal 2019, we assessed potential human rights risks through our business activities and value chain, partnering with BSR (Business for Social Responsibility), which is an NGO that is globally active working in the areas of business and sustainability.

This assessment identified 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 giving adversely impact through our business activities and business relationships, and Yokogawa's ability to manage the risks.

As a results of risk assessment, 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 work further to reduce the risks, taking into account the characteristics of each country and region. If we find some problem, we will take appropriate measures.

Major Human Rights Initiatives in FY 2019

- **Revision of the Yokogawa Group Code of Conduct and the Compliance Guidelines**
We have added a broader concept of respect for human rights and respect for international standards and guidelines.
- **Revision of the Yokogawa Group Sustainable Procurement Guidelines for business partners**
We have expanded our human rights initiatives by referring to the RBA Code of Conduct V6.0 with our support for the Global Compact.
- **Human rights risk assessment and identification in the Yokogawa Group**
We assessed our business activities and potential human rights risks in the value chain.

Human Rights Risk of the Yokogawa Group





Supply Chain Management

Management Structure as Part of Internal Control

As part of the Yokogawa Group’s internal control, Yokogawa has developed a management structure that governs all business processes, including its relationships with customers and business partners. For the procurement processes in the supply chain, Yokogawa strives to ensure fair and equitable transactions in accordance with the Group Procurement Management Code based on the Yokogawa Philosophy and the Yokogawa Group Code of Conduct. Yokogawa observes the local laws and regulations of the countries and regions in which it does business, is taking account of environmental conservation and human rights throughout its supply chain, and is working on the issue of conflict minerals. In order to efficiently and effectively implement supply chain-related measures, we are participating in committees of industry groups such as the Materials Committee of JEITA (Japan Electronics and Information Technology Industries Association) and working with other companies.

In addition to announcing the Principles of Procurement Activities for internal use, Yokogawa created the Yokogawa Group Sustainable Procurement Guidelines with reference to the RBA Code of Conduct version 6.0, which are disclosed to our business partners in and outside Japan. We also conduct briefings on the Guidelines for our key business partners and ask them to comply.

▶ The Yokogawa Group Sustainable Procurement Guidelines are published on the Yokogawa website.

Sustainable Procurement Activities

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.

2019 Activity Results

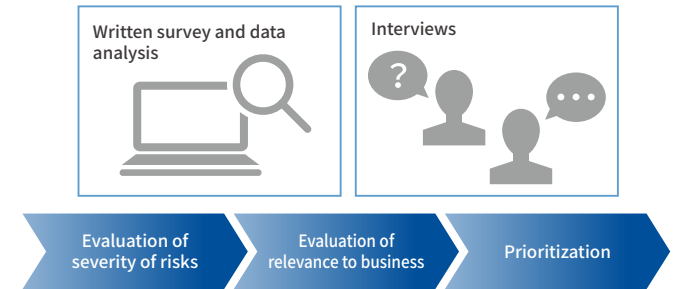
In 2019, a preparatory year for sustainable procurement activities, the following evaluations and surveys were conducted to define KPIs for the activities.

- 1 Evaluations of human rights risks for the entire Group
- 2 Surveys on the attitudes of the Group’s major business partners toward sustainable procurement

Human Rights Risk Assessment and Attitude Survey

1 Human rights risk assessment

We conducted written survey and data analysis targeting the entire Group and engaged in interviews primarily in our head office departments. By also consulting expert opinion, we evaluated human rights risks in terms of both severity and relevance to our businesses, and prioritized our activities based on the results of the evaluation.



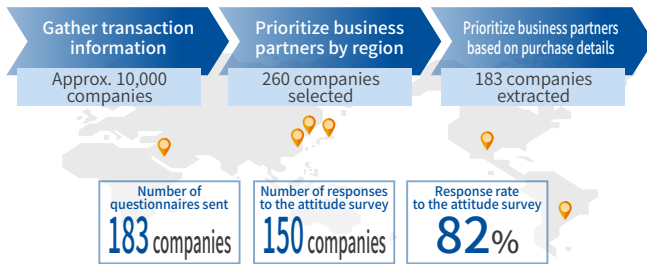
Results revealed that promoting cooperation with business partners in the area of sustainable procurement is one of the high-priority activities the Group should pursue to fulfill its role in the supply chain. In particular, given the characteristics of the Group’s business, we learned the importance of understanding risks to workers’ human rights and safety in the supply chain.



2 Business partner attitude survey

We conducted a survey to ascertain the attitudes of the Group's major business partners (183 companies) in each region.

The survey was conducted among 183 companies from which the Group purchases materials necessary to develop the products and solutions offered to our customers. These companies were selected from the 260 companies with the highest transaction volume among the approximately 10,000 companies we have done business with in the past.



To conduct the survey, questionnaires were sent to the companies to ascertain their policies concerning the issues listed in the Yokogawa Group Sustainable Procurement Guidelines and their implementation status: human rights and labor, health and safety, the environment, ethics, conflict minerals, and helpline.



By scoring and comparing the business partner responses on the existence or non-existence of policies, implementation status, relevance, and so forth, we found that the responses varied by industry and region. Based on the results, we developed an action plan for sustainable procurement activities. Starting in FY2020, we will ask our business partners to complete a self-assessment questionnaire (SAQ).

Sustainable Procurement Education

We offer e-learning programs related to sustainable procurement. In FY2019, 85.7% of the Group's employees who are in charge of procurement in Japan took this course. We also provide opportunities for direct explanation to and communication with the employees.



Activity Action Plans

The Yokogawa Group has prepared a procurement activity plan with reference to ISO 20400 ("Sustainable Procurement—Guidance"). Starting in FY2020, we will work with outside experts to evaluate risks to our business partners' business facilities based on their SAQ responses and initiate a cycle of identifying high-risk business facilities and providing written feedback and on-site monitoring.



1 SAQ execution

We have chosen approximately 600 companies as SAQ targets based on expert industry assessment. These companies were selected from the 1,070 companies with the highest transaction volume among the approximately 10,000 companies from which the Group has made purchases in the past. Our goal is to conduct SAQs with the business facilities of approximately 200 business partners every year, selected among the some 600 target companies, and provide feedback to them.

KPI	Cumulative number of participating companies	Target year
Number of business facilities of business partners completing SAQ	200	FY2020
	400	FY2021
	600	FY2022

2 Agreement to sustainable procurement policy

To improve our activities with business partners, we will ask them to agree to our sustainable procurement activities in the Group's supply chain.

KPI	Cumulative number of participating companies	Target year
Number of business partners agreeing to sustainable procurement	70	FY2020
	140	FY2021
	210	FY2022

3 Business partner seminars


Every two years we provide seminars on topics such as our business plans and policies, as well as procurement strategies, to about 70 major business partners. We plan to include in these seminars information on our sustainable procurement initiatives in the supply chain.



Promotion of Green Procurement

In keeping with its environmental management approach of helping to build a sustainable society in every aspect of its business activities, Yokogawa has been promoting its green procurement activities by creating the Green Procurement Guidelines. We have a system to promote management of the chemical substances contained in our products, and we also investigate and manage the chemical substances contained in the materials and components we use.

We work to raise awareness of this issue by holding briefings for new business partners.

 The Green Procurement Guidelines are published on the Yokogawa 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.

For example, we host regular Partner Policy Presentation Meetings, at which we explain our sustainable procurement practices and other policies to the business partners. Additionally, the purchasing department organizes component exhibitions and technical seminars by individual business partners 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.



Partner Policy Presentation Meeting

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 and 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.

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 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). With the cooperation of our business partners, we research and manage information on the areas producing the components used in our products to ensure that we can act promptly in case of emergency. For key components used in major products, we are making efforts to reduce procurement risk by confirming that our business partners have BCPs and securing safety stock.

Initiatives on Conflict Minerals

Certain minerals (tin, tantalum, tungsten, and gold) produced in the Democratic Republic of the Congo and nearby nations and distributed via supply chains might be used to fund armed groups engaged in illicit activities involving human-rights violations, acts of violence, and other abuses. Consequently, such materials are referred to as conflict minerals.

Recognizing that cutting off the sources of funds for these armed groups is a challenge that the whole supply chain should tackle, Yokogawa aims to become conflict-free by using no conflict minerals for our products. However, we do not prohibit the procurement of all minerals produced in these countries. We will continue procuring traded minerals refined at refineries recognized by an independent organization as unrelated to such armed groups; we will also procure legitimate products derived from such minerals.

To meet the aforementioned challenge, Yokogawa engaged in the following efforts:

- Since 2011 we have had the appropriate internal structure in place and have continuously taken action.
- As a member of the Responsible Minerals Trade Working Group run by the industry group JEITA (Japan Electronics and Information Technology Industries Association), we coordinate our efforts with those of other corporations and obtain the latest information.
- We have been cooperating with our suppliers 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.

Yokogawa will continue making the utmost effort to ensure responsible procurement of minerals.



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).

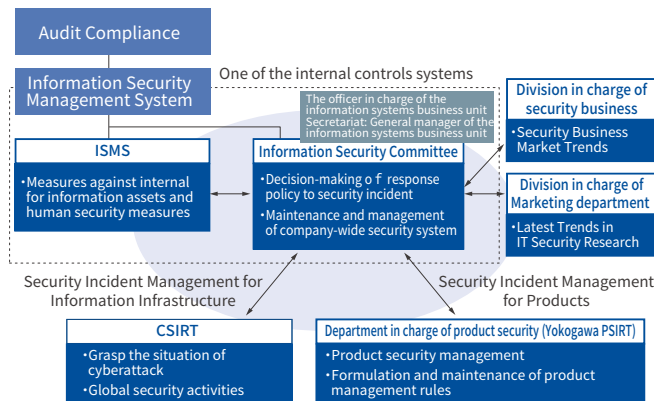
Information Security Management Promotion Structure

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

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

In conjunction with the above, Yokogawa also has an information security committee to improve responses to cyberattacks and ensure customers can continue their business activities safely and securely. This committee comprises cybersecurity experts on products and other fields where

Information Security Committee



Yokogawa operates and works to share information within the Group and grasp the latest trends.

People: Information Security Training

Every single employee should be aware of information security in order to protect information. Yokogawa provides training using e-learning to all its employees every year so that employees can think for themselves about how to handle information they receive and take appropriate action. We share up-to-date knowledge regarding information security, and issue an internal news release whenever necessary to keep our employees informed of responses to security incidents and recurrence prevention measures based on actual cases. Further, we offer more practical information in the form of lectures on information security with experts invited as lecturers, as well as education and training on responses to targeted attacks, and education for line managers. Information security audits 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)

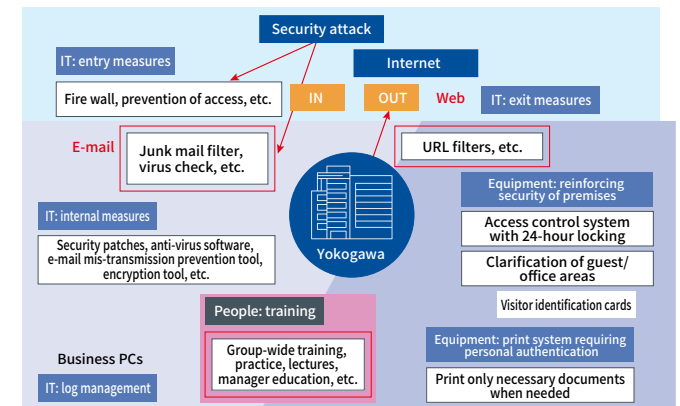
Information security must be easy to understand. We have clarified the areas that employees and visitors respectively can enter. When a visitor enters areas other than the guest area, the visitor must wear a visitor identification card. We protect property and information assets on head office premises 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 to print only the necessary documents at the required time, preventing documents from being left behind on the printer or mixed with others.

IT: Protection Behind the Scenes

We use IT to prevent human error such as accidental leaks and inappropriate use of information due to lack of knowledge, and also adopt a multi-tiered approach to preparing against cyberattacks from the outside.

Yokogawa's Security Management



Protection of Customer Privacy

Yokogawa has developed the Privacy Guidelines and rules that its Group companies should follow to properly manage and use personal information entrusted from 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 FY2019, no complaint was filed about breaches of customers' privacy or loss of customer data via Yokogawa's system that aggregates reports from the Group companies.



Security Management for Products and Services

Yokogawa recognizes that providing ongoing measures to address cyber threats is an important issue for its customers and society and is committed to addressing security together with customers through the provision of its products and services. Since the Stuxnet malware attack, cyberattacks targeting important infrastructure have become a common occurrence. In modern society, which is built upon this key infrastructure, these types of cyberattacks may have a profound effect on our daily lives and socio-economic activities. Attacks could even cause social unrest or imperil the environment and human life. Additionally, as the example of the Triton malware showed, there are no signs that the technological advances in attacks have stalled. In response to these circumstances, Yokogawa has pursued various activities to reduce these risks to 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 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.
- To ensure security quality, our main products CENTUM VP and ProSafe-RS have obtained ISASecure EDSA certification issued by ISCI, an international organization promoting security certification.

- The product development department in charge of our control systems has obtained ISASecure SDLA (Security Development Lifecycle Assurance) 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 whether a development process complies 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

System Installation

- Yokogawa established the Security Competence Laboratory (SCL) at the regional HQ in Singapore for the research and study of security technology. SCL demonstrates the effectiveness of Yokogawa's security measures and supports introduction of security measures for our customers. Yokogawa has also provided security education at offices in each country. Through these initiatives, we will realize uniform implementation of security and safer system integration.

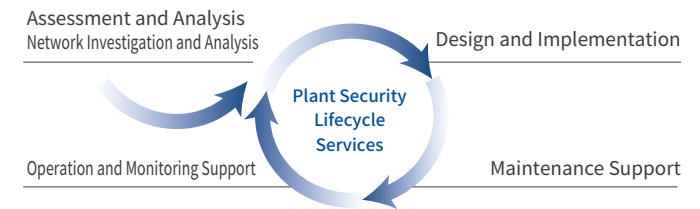


Security Competence laboratory (SCL)

System Operation

- We have developed a security lifecycle approach in accordance with industry security standards such as IEC 62443 and provided security solutions to mitigate the cyberspace risks to customers with services such as controls system security status monitoring services, SOC services specific to control systems, and back-up services.

Security Lifecycle



PSIRT (Product Security Incident Response Team)

- We extensively gather information about vulnerabilities related to our products and disseminate the information obtained throughout the Yokogawa Group, to investigate whether there is any influence on the products. Concerning the vulnerabilities that are confirmed to influence the products, we disclose information on the influence and countermeasures to the customers and thereby support customers in their security activities.



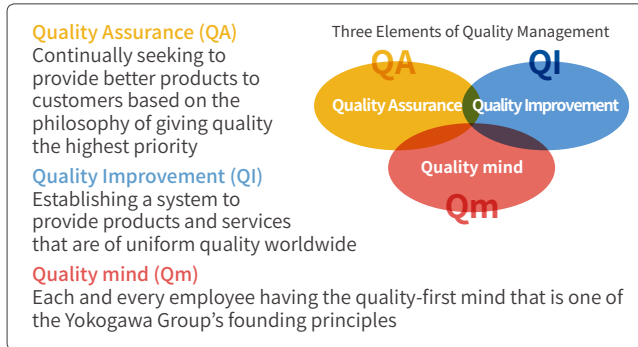
Quality Assurance

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.

Achieving Uniform Quality Worldwide

The Yokogawa Group has satisfied customers' expectations by providing products and solutions of uniformly high quality throughout the world. The driving force behind this is our founding principle of quality-first, which we have followed faithfully for over 100 years. Our quality management consists of three basic elements: Quality Assurance (QA), Quality Improvement (QI), and Quality mind (Qm).



We believe that we can satisfy our customers' expectations and build long-lasting bonds of trust only when all of these elements are engaged. Yokogawa sees the quality-first mindset as particularly important in maintaining high levels of quality. All Yokogawa Group employees are aware of the importance of having a 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 stand by 24 hours a day, 365 days a year to swiftly deal with the various issues and trouble with products encountered by customers. Yokogawa has a service system to continually watch over the safety of customer equipment on a global scale through the Global Response Center. Yokogawa also ensures the traceability of measurement instruments used 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 Quality Months

In Japan, November was set as Quality Month in 1960 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 and has now added June to designate both June and November each year as Yokogawa Quality Months to implement quality-improving activities across the Group. To help the quality-first mindset take root, Yokogawa displays posters illustrating the mindset and communicates the importance of quality in the form of mottos. The quality-first mindset is confirmed by having employees recite the mottos each day at production sites.



Quality Month Poster (FY2019)

Yokogawa QA Booklet

In order to maintain and improve quality, Yokogawa has prepared a QA Booklet that explains the attitude required during daily work in easy-to-understand terms. The booklet has been translated into five languages to facilitate implementation across the Group, and workers carry it at all times to ensure they are maintaining a quality-first mindset.



QA Booklet



Data/Company Profile

This chapter contains social and environmental data, third-party verification, editorial policy and other information.

CONTENTS



57 Social Data
Environmental Data



58 Third-party Verification



59 Company Profile
Editorial Policy



Sustainability Data

Social Data

Item		2015	2016	2017	2018	2019
Number of employees (persons)	Consolidated	18,646	18,329	18,290	17,848	18,107
	Non-consolidated	2,502	2,537	2,590	2,574	2,496
Ratio of female managers (%)	Consolidated	—	—	9.9	9.4	10.2
	Non-consolidated	3.2	3.5	4.3	5.4	6.3
Ratio of female employees (%)	Consolidated	—	—	21.2	21.9	21.7
	Non-consolidated	13.9	14.3	14.7	15.5	16.5
Employment rate of disabled persons (%)	In Japan	2.03	2.10	2.31	2.27	2.27
		(2016/6)	(2017/6)	(2018/6)	(2019/6)	(2020/6)
Collective agreement coverage (%)	Non-consolidated	74.2	74.7	74.8	73.7	73.1

Item		2015	2016	2017	2018	2019
Frequency rate of occupational accidents (Number of accidents resulting in lost workdays / aggregate number of workhours × 1 million)	Consolidated	0.38	0.46	0.33	0.28	0.34
	Temporary and contract employees	0.35	0.17	0.34	0.46	0.28
Fatal accidents (cases)	Consolidated	0	0	0	0	0
	Temporary and contract employees	0	0	0	0	0
Donations and community invest- ments (million yen)	Cash contributions	97.4	127.8	127.1	194.3	184.4
	Employee participation and dispatch	3.4	5.6	1.4	1.7	1.0
	In-kind giving and use of company facilities	5.7	12.2	14.3	7.4	45.9
	Management overheads	18.0	18.0	18.0	18.0	18.0
	In Japan	86.6	110.7	106.4	178.9	175.6
	Outside Japan	38.0	52.9	54.4	42.5	73.7
	Total	124.5	163.6	160.8	221.4	249.3

Environmental Data

Item		2015	2016	2017	2018	2019
Energy consumption (GJ)	In Japan	734,828	684,692	676,375	684,085	632,217
	Outside Japan	818,109	810,126	829,572	854,898	831,180
	Total	1,552,937	1,494,818	1,505,947	1,538,983	1,463,397
	Intensity (GJ/100 million yen)	375	382	370	381	362
Renewable energy (kWh)	Solar power generation	68,817	55,726	83,288	130,915	111,948
	In Japan	38,695	36,119	35,185	34,447	30,745
Greenhouse gas (GHG) emissions (t-CO ₂ e)	Outside Japan	50,784	48,251	49,697	49,439	48,025
	Total	89,479	84,370	84,882	83,886	78,770
	Intensity (t-CO ₂ e/100 million yen)	21.63	21.56	20.88	20.78	19.48
	Scope 1	12,153	12,580	15,412	15,015	14,000
Scope 2	77,326	71,790	69,470	68,871	64,770	


Item		2015	2016	2017	2018	2019
Water withdrawals (km ³)	In Japan	342	314	319	316	247
	Outside Japan	275	285	296	245	266
	Total	617	600	615	561	513
	Intensity (km ³ /100 million yen)	0.15	0.15	0.15	0.14	0.13
Water discharges (km ³)	In Japan	256	235	236	267	246
	Outside Japan	268	277	282	232	228
	Total	525	512	518	499	474
Waste generated (t)	In Japan	1,926	2,321	2,350	2,566	2,414
	Outside Japan	2,278	2,186	2,455	2,624	2,499
	Total	4,204	4,507	4,805	5,190	4,913
	Intensity (t/100 million yen)	1.02	1.15	1.18	1.29	1.22
Non-hazardous waste (t)	Waste recycled	2,603	2,937	3,224	3,528	3,333
	Waste incinerated	113	129	138	126	393
	Waste landfilled	920	888	720	784	613
	Total	3,636	3,954	4,082	4,438	4,339
Hazardous waste (t)		568	553	723	752	574

Item	Classification	Category	2018	2019
Supply chain GHG emissions Scope 3 (t-CO ₂ e)	Upstream 1	Purchased goods & services	192,606	204,683
	Upstream 2	Capital goods	23,749	29,874
	Upstream 3	Fuel- and energy-related activities not included in Scope 1 or 2	7,631	7,178
	Upstream 4	Transportation & logistics	18,594	17,325
	Upstream 5	Waste generated in operations	1,000	947
	Upstream 6	Business travel	19,301	17,750
	Upstream 7	Employee commuting	7,950	7,385
	Upstream 8	Leased assets	—	—
	Downstream 9	Transportation & deliveries	—	—
	Downstream 10	Processing of sold products	—	—
	Downstream 11	Use of sold products	533,414	617,473
	Downstream 12	End-of-life treatment of sold products	1,007	1,131
	Downstream 13	Leased assets	—	—
	Downstream 14	Franchises	—	—
	Downstream 15	Investments	—	—
Total			805,252	903,747



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)



LR Independent Assurance Statement

Relating to Yokogawa Electric Corporation's Environmental and Social Data within its Sustainability Report 2020 for the fiscal year 2019

This Assurance Statement has been prepared for Yokogawa Electric Corporation in accordance with our contract but is intended for the readers of this Report.

Terms of engagement
Lloyd's Register Quality Assurance Limited (LR) was commissioned by Yokogawa Electric Corporation ("the Company") to provide independent assurance on its environmental and social data within its Sustainability Report 2020 ("the Report") for the fiscal year 2019, that is, from 1 April 2019 to 31 March 2020, against the assurance criteria below to a limited level of assurance and professional judgement of the verifier using ISAE 3000 and ISO 14064-3 for greenhouse gas ("GHG") data.

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)
 - Renewable energy usage (kWh)
 - GHG emissions¹ (Scope 1 and Scope 2 [Market-based]) (tonnes CO₂)
 - Water consumption (m³) and Wastewater effluent volume (m³)
 - Total waste generated (tonnes) and Total waste landfilled (tonnes)
 - Social indicators:
 - Frequency rate of occupational accidents²
 - Number of employees in the Industrial Automation and Control, Test and Measurement, Aviation, and other businesses
 - The female managers ratio to all managers (%)
 - The ratio of the overseas to total employees (%)
 - Number of registered and pending patents (in Japan and overseas countries)
 - Number of registered and pending designs (in Japan and overseas countries)
 - Number of registered and pending trademarks (in Japan and overseas countries)

Our assurance engagement excluded the data and information of the Company's suppliers, contractors and any third-parties mentioned in the Report.

LR's responsibility is only to the Company. LR 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.


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

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

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

¹ GHG quantification is subject to inherent uncertainty. LR also reviewed the Organisation's 2019 fiscal year against its 2019 to confirm the year-on-year change in Scope 1 and 2 GHG emissions data.
² The number of occupational accidents in the boundary divided by total working hours (in the unit of million hours).

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

Note: 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 substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

LR's approach
LR's assurance engagements are carried out in accordance with ISAE3000 and ISO14064-3. The following tasks though 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 mis-statements in the Report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the Report.
- Sampling datasets and tracing activity data back to aggregated levels;
- Implementing the Company's "No Visitor" Policy due to the global COVID-19 situation. Interviewing and verification of Musashino plant and Kanazawa plant of Yokogawa Electric Corporation in Japan were therefore conducted remotely via Cisco Webex.

Observations
The company has demonstrated improvement in its data management system compared to that of last fiscal year. However, the Company should maintain the reliability of its future environmental and social performance data.

LR's standards, competence and independence
LR 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.

LR 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.

LR is the Company's certification body for ISO9001. The verification and certification assessments are the only work undertaken by LR for the Company and as such do not compromise our independence or impartiality.

Signed  Dated: 29 June 2020

Yoshinori Shibata
LR Lead Verifier
On behalf of Lloyd's Register Quality Assurance Limited
Queen's Tower A, 10th Floor, 2-3-1, Minatomirai, Nishi-ku, Yokohama 220-6010, Japan
LR reference: YKA4005469

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Company Profile

Corporate Data

- **Corporate Name:** Yokogawa Electric Corporation
- **President and CEO** Hitoshi Nara
- **Headquarters:** 2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750, Japan
- **Founded:** September 1, 1915
- **Incorporated:** December 1, 1920
- **Paid-in Capital:** 43,401 million yen
- **Number of Employees:** 18,107 (consolidated)
2,496 (non-consolidated)
- **Subsidiaries and Affiliates:** 104 outside Japan, 10 in Japan
(as of March 31, 2020)

Editorial Policy

The Yokogawa Sustainability Report discloses Yokogawa Group's sustainability information. The Report, the content of which is in accordance with the core options of the GRI Standards, a set of international guidelines for the disclosure of sustainability information, discloses Yokogawa's material issues by taking into account its stakeholders' opinions. Third-party verification has been obtained to enhance the reliability of the information.

The 2020 Report provides an explanation of Yokogawa's approach to its sustainability goals more extensively than in previous Reports, and shows how Yokogawa is tackling global issues through its businesses, including its response to the COVID-19 pandemic, by incorporating specific examples. In particular, it highlights new initiatives based on digital technologies. Disclosures were also enhanced with respect to initiatives for human rights, supply chain management, etc. in the chapter of "Responsibility in Value Chain."

For a brief overview of our sustainability initiatives, please refer to the Yokogawa Sustainability Book. For ESG information that is highly relevant to financial information and management strategy, please refer to our annual report, i.e., Yokogawa Report. The GRI Standards index is posted on our website.

● Period Covered by Report

FY2019 (April 1, 2019 to March 31, 2020)

This Report also includes some information on major activities in prior years and some of the latest information in FY2020.

● 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 2020 (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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