Global Responsible Business

— Environment —

The "Fujitsu Climate and Energy Vision" is, a Medium- to Long-Term Environmental Vision for 2050 which clarifies the role we will play in tackling global climate change as well as the future outcomes we hope to realize. Fujitsu will work to achieve zero carbon emissions from its own operations by 2050, and contribute to climate change adaptation as well as a de-carbonized society through technologies supporting digital transformation.

Environment

Environment

Goal

WHAT FUJITSU ASPIRES TO BE

Fujitsu will fulfill its social responsibilities as a global corporate environmental leader.
We aim to contribute to achieving the 1.5°C climate change goal of the Paris Agreement and also to resolving environmental challenges, through such measures as developing innovative solutions that make effective use of resources

GOALS FOR FY2022

Fulfill our social responsibilities and help to resolve environmental challenges

KPI :
- Reduce greenhouse gas emissions at Fujitsu sites by 37.8% or more from the base year level (Reduce by 4.2% each year compared with FY2013)
- Avoid risks associated with our business activities and minimize our impact on the environment
- Help to resolve environmental challenges for customers and society through our business operations

Introduction

Climate change is a global issue that impacts the sustainability of society, and it is closely related to water and resource recycling issues. Engaging in global environmental conservation is essential for achieving Our Purpose. The Fujitsu Group does its utmost to reduce environmental impact and minimize risks throughout the value chain, and we contribute to the realization of a sustainable society by solving environmental issues together with our customers.

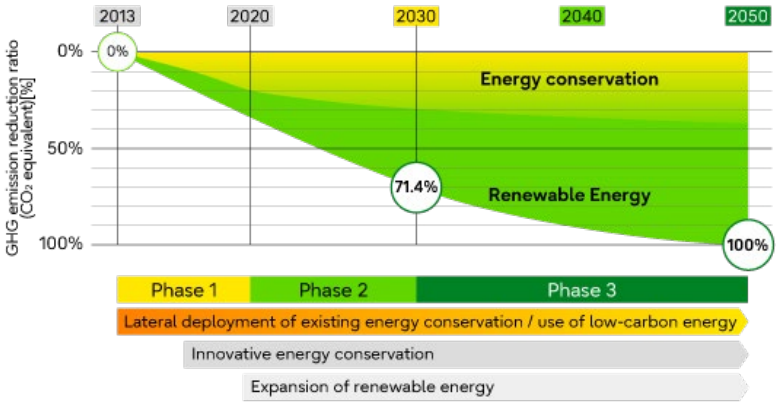
Image of Achievement Fiscal Year for Environmental Vision, Targets, and Other Goals

To Reduce GHG Emissions in Accordance With 1.5°C Target

Updating Medium- and Long-term Goals

In May 2017, the Fujitsu Group formulated the FUJITSU Climate and Energy Vision as our medium- to long-term environmental vision. In August 2017, we acquired SBT certification (2°C-aligned) for our reduction standard by 2030. As the movement toward carbon neutrality accelerated, we reconsidered the role that the Fujitsu Group must fulfill, and in April 2021 we raised our GHG emissions reduction target for 2030 from a 33% reduction

compared to FY 2013 to a 71.4% reduction. This reduction target has been certified as 1.5°C-aligned by SBTi. In June 2022, we submitted a commitment letter to the SBT Initiative towards the Net-Zero targets and it was accepted.



Roadmap to 2050 for achieving our own zero CO_2 emissions

Initiatives for Achieving Goals

Since 2018, the Fujitsu Group has been a member of the international initiative RE100, which aims to popularize and expand renewable energy. Up until now, we have focused on our sites in Europe and the United States; however, promoting use in Japan has been an issue. In response, in FY 2020, we converted to 100% renewable energy at three domestic system laboratories (Aomori, Kumamoto, Oita) which use a large amount of energy as offices. In FY 2021, we converted to 100% renewable energy at the Kawasaki Plant, which is our headquarters, and essentially converted to renewable energy for all power used at floors contracted by the Fujitsu Group at the Shiodome City Center, which is our head office.

Exterior of Kawasaki Plant

- Fujitsu Group Sustainability Data Book 2021 (p.5-3-3-12)
- (Examples of Initiatives in FY 2020: Introduction of Green Power)
- Fujitsu Group's Largest Facility to Source 100% of its Energy Needs from Renewables, Demonstrating Commitment to Achievement of RE100
- Fujitsu Sources 100% of Energy Needs for Global HQ from Renewables

Avoiding Risks Associated with Business Activities and Minimizing Environmental Impact (Water Risk Countermeasures)

The Fujitsu Group conducts flooding damage impact assessments for each business site according to the level of business impact using hazard maps and implements countermeasures. We determine whether each business site falls within the "estimated flood inundation area (planned scale: once every 10–100 years or assumed maximum scale: once every 1,000 years)" for nearby rivers as established by the Ministry of Land, Infrastructure, Transport and Tourism or prefectural governments. We also assess what the impact will be on-

site and off-site, and whether there will be an impact from water ingress in buildings, etc. We then use a four-point scale to rank the business sites with a high level of impact. For sites that correspond with the most hazardous level, we assign a four and then take various measures to reduce risk, such as protecting the site perimeter with retaining walls and watertight panels.

› Click here for details > Add link to “Response to Environmental Risks”

Sliding gates

Removable watertight panels

Gates that can be raised and lowered

Examples of Contribution to Solving Environmental Issues of Customers and Society Through Business

Achieving Environmental Value Trading Such as CO_2 Reductions, for Which Global Demand is Remarkable

In April 2022, IHI Corporation and Fujitsu launched a joint business project with the aim of contributing to the realization of a carbon-neutral society and to revitalize the market of environmental value trading(*1) ecosystems. Under this joint project, IHI and Fujitsu will work toward the commercialization and promotion of an environmental value distribution platform by leveraging their business knowledge in blockchain technology and new carbon neutrality technology. These efforts will be targeted at aspects of the environmental value trading market such as the efficient reduction of CO_2 across corporations and countries, which is a theme for which initiatives are being conducted on a global scale. Specifically, the two parties will create tokens(*2) expressing the environment value of CO_2 reduction as calculated from data through IHI’s IoT platform ILIPS (IHI group Lifecycle Partner System) and establish a platform for distributing these tokens to the environmental value trading market by leveraging Fujitsu’s ConnectionChain security technology to safely interconnect various blockchains, thereby aiming for the efficient distribution of environmental value.

The two companies will aim to efficiently distribute environmental value such as CO_2 reductions created by companies around the world through the platform that will be launched through this joint business project, and contribute to the realization of a carbon-neutral society, which is a common global goal.

*1 Environmental value trading: Trading in which parties measure and certify the amount of emission reduction, absorption, or removal for substances such as CO_2, and acquire rights for the decarbonization effect as tradable value.
*2 Token: Digitized rights and assets independently issued by companies and organizations using blockchain technology.

› Fujitsu and IHI start joint project on new environmental value distribution platform using blockchain technology

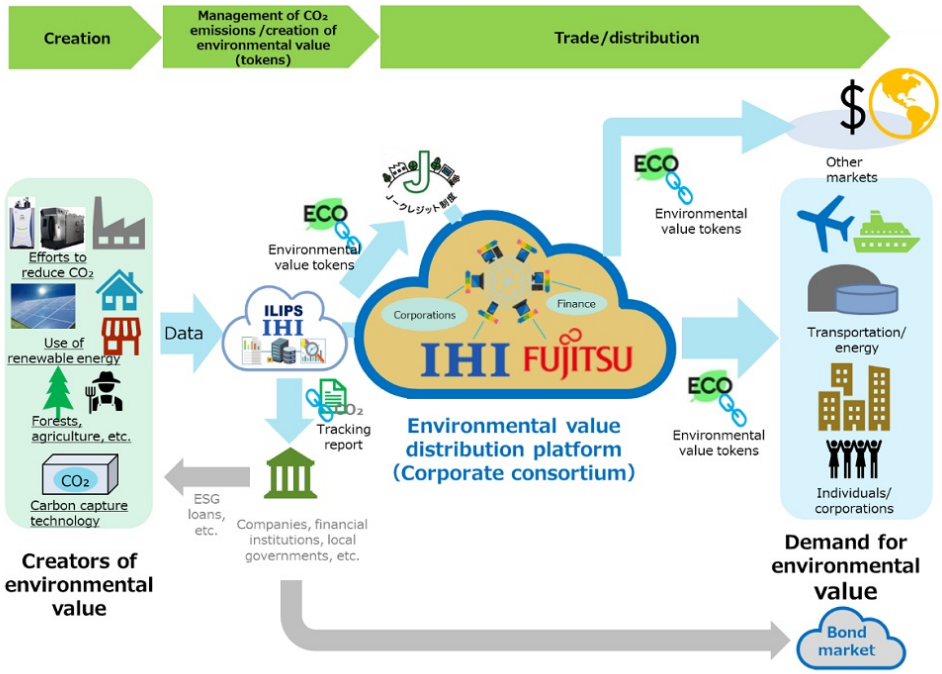


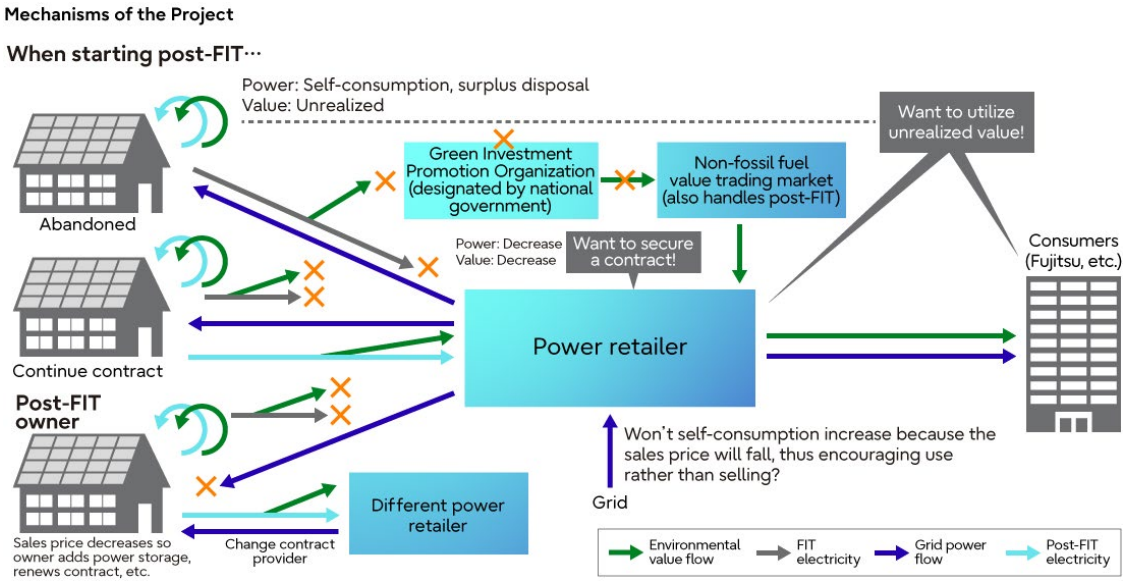
Image of market utilizing the new environmental value distribution platform

Joint Field Trial Project Aimed at Environmental Value Distribution Among Households and Companies

TEPCO Energy Partner, Inc., GridShare Japan Corporation (a 100% subsidiary of ITOCHU Corporation), Ridgelinez Limited, and Fujitsu conducted a field trial aimed at the distribution of environmental value between households and businesses, with the aim of achieving carbon neutrality. Until now, households have not utilized the environmental value generated during self-consumption of electricity from photovoltaic power generation. From November 2019, in conjunction with the end of the Feed-in Tariff Scheme for Renewable Energy (FIT) period, the unit price of electricity sold will be lower than during the FIT period. Therefore, we assume that the environmental value that is not used during self-consumption will increase even further. In the joint field trial project, in order to solve the problem in which precious environmental value is not being utilized, we devised an app that converts the environmental value generated during self-consumption into tokens (crypto assets), and then uses those tokens to support companies that contribute to the SDGs. With the aim of directing users' attention to the environmental value of self-consumption that has been unutilized thus far, use tokens as a form of visualization and created an app that allows users to continuously enjoy a series of events consisting of collecting more tokens in conjunction with a greater amount of self-consumption, using those tokens to support corporations, and then receiving novelties gifts from companies. By using blockchain in this app, we are able to perform the integrated process of collecting self-consumption data of solar power generation, and managing and issuing environmental value certificates. In addition to users having fun with this app, corporations are also able to collect precious environmental value and utilize it for initiatives such as RE100. Other benefits include the ability to gain understanding for corporate environmental contribution activities through the app, and the ability of corporations to heighten engagement with users through novelty gifts.

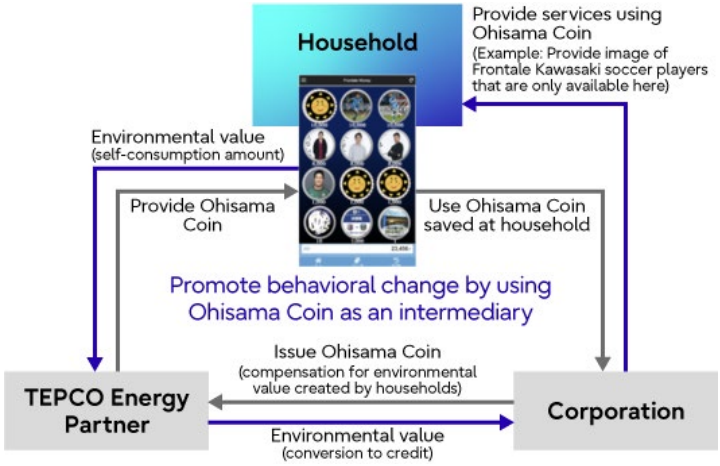
This joint field trial project had a one-month field trial period from February 14, 2022 to March 21, 2022, which includes the questionnaire response period. About 200 monitors from ordinary households participated in the project. When a monitor actually consumes the electricity generated by the solar power generation, a token called Ohisama Coin is collected. The "Ohisama Coin" is used to virtually support three projects: (1) Kawasaki Frontale, (2) Cool Japan, and (3) Mothers and Children in Africa. (The African Mother and Child Support Project is being exhibited on the Web at the Tokyo International Conference on African Development (TICAD) by the Japanese government, and future collaboration is also being considered.) By examining the results of the joint

field trial, we were able to identify current issues with systems and apps, as well as issues with future business development. We are currently considering holding new field trials from FY 2022.



(a) Issues after post-FIT at ordinary households

(b) Image of screen for the Ohisama Coin token app



(c) Flow of tokens

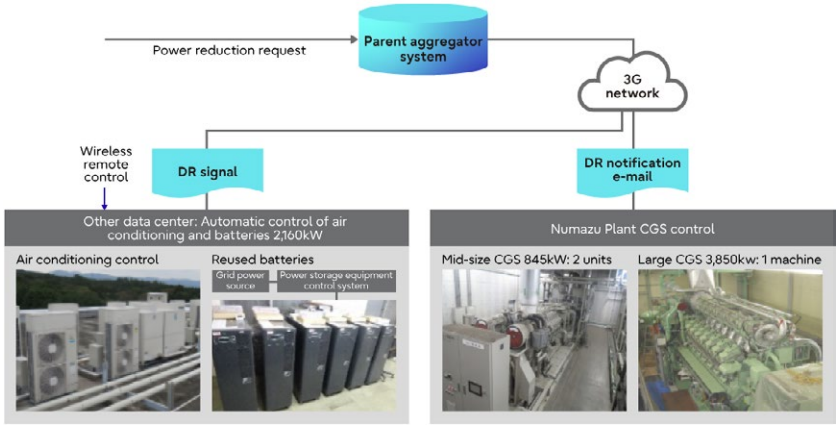
VPP(*3) and DR(*4) Field Trial Project With an Eye on the Future Energy Market in Japan

ENERES Co., Ltd. and Fujitsu have applied blockchain technology to develop a system that realizes the trading of insufficient and surplus power among power consumers. Specifically, in response to requests from power transmission and distribution companies to curb demand-side power when supply-side power is in short supply, we operated cogeneration(*5) power generators at Fujitsu's Numazu Plant. We have been working on the VPP/DR field trial for seven years, from the negawatt trading(*6) field trial in 2015 to the power supply severe weather adjustment capacity(*7) for Power I' (ability to adjust to sudden increases in demand in the event of a once-in-a-decade heat wave or severe winter) in 2021. In this field trial, in addition to acquiring incentives through the effective use of cogeneration, we also utilized distributed power sources to solve the environmental issue and social issue of securing power supply adjustment capacity to respond to the sudden increase in demand during severe weather in the TEPCO service area. With cooperation from Fujitsu Laboratories, we utilized the blockchain technology developed so far to address the identified issues, thereby developing a power loan trading technology for mutual loaning of surplus power among consumers who have

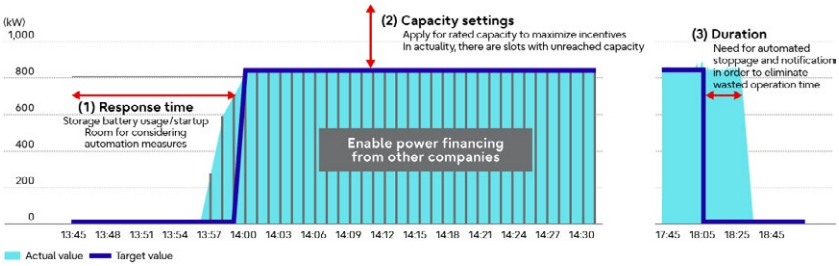
contracted with aggregators(*8) in the power field. We utilize this technology in various aspects of Fujitsu's energy business. Based on the experience and know-how gained from this project, we will further collaborate with AutoGrid in the United States to expand renewable energy and realize a carbon-free society by maximizing the use of distributed energy resources in the Japanese energy market.

*3 VPP: Acronym for "Virtual Power Plant." A technology that controls distributed power sources such as generators and storage batteries to function like a single large power plant.
*4 DR: Acronym for "Demand Response." A mechanism for suppressing demand during peak power hours by effectively saving electricity on the demand side.
*5 Cogeneration: A system that uses substances such as natural gas, petroleum, and LP gas as fuel to generate electricity using a power generator, and also recovers the exhaust heat generated at that time for use in hot water supply, air conditioning, etc.
*6 Negawatt trading: A system in which the power demand side reduces power consumption to achieve peak cuts, and a reward is paid according to the amount of reduction.
*7 Severe weather response adjustment capability: A system for suppressing power consumption on the demand side during severe weather months (July to September and December to February) when power is in short supply.
*8 Aggregator: A business operator that provides integrated control of distributed energy resources and provides energy services from VPPs, DRs, etc.

› Fujitsu, AutoGrid to Boost Renewable Energy Use in Japan Towards Realization of Decarbonized Society with Virtual Power Plant Solution

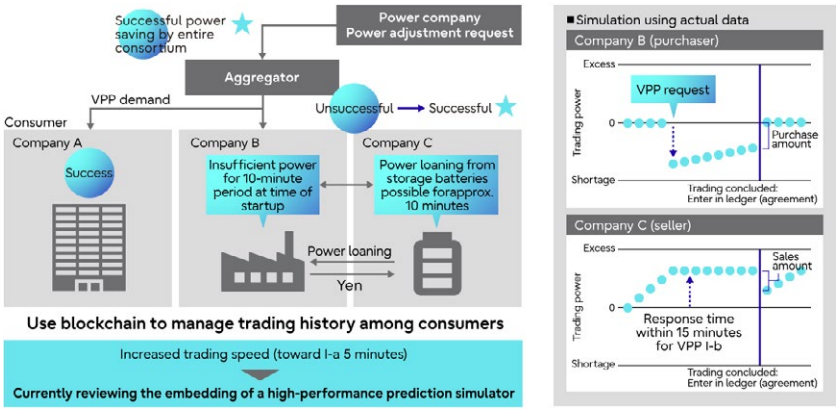


(a) Overview of VPP/DR Field Trial Project



Success rate in VPP trading (response 15min.) is about 50%

(b) Current status: Conditions of power source I-b



Energy matching and increased trading speed → Improved VPP success rate by 40%
(results of simulation using actual data)

(c) Development of technology for power source I-a

- Participation in METI's DR/VPP Field Trial (from 2015) Full-scale VPP (from 2021)
  Power source I-b (support for 15 minutes) →
  Currently accumulating technology for I-a (support for 5 minutes)

Environmental Management

Environmental Management System

We are continuously working to improve our ISO14001 (*1) based environmental management systems and to promote Group-wide environmental management.

(*1) ISO14001 : Environmental Management Systems (EMS) standard determined by the International Organization for Standardization (ISO). Certification is granted to environmentally conscious organizations that develop systems for ongoing reductions in their environmental footprint.

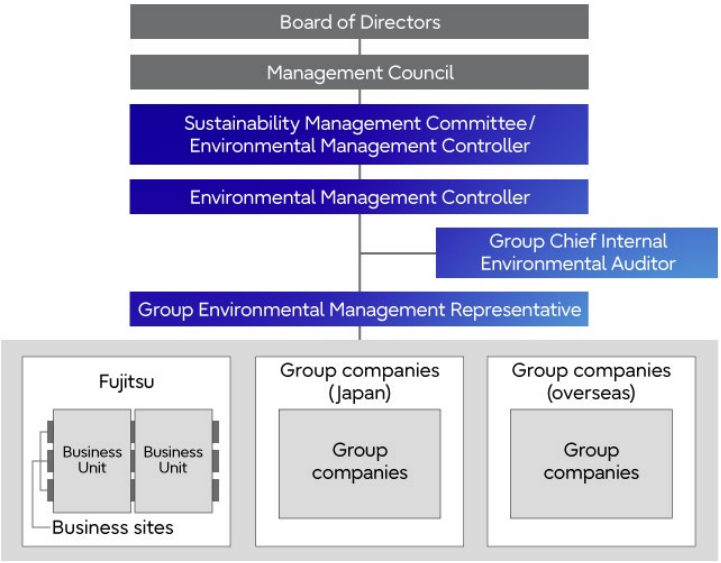
Fujitsu Group's Environmental Management Systems (EMS)

Fujitsu Group has constructed Environmental Management Systems (EMS) based on the ISO 14001 international standard and is promoting environmental improvement activities across the Group. After acquiring ISO 14001 certification for consolidated subsidiaries in Japan at the end of FY 2004, we expanded this effort to include overseas subsidiaries and acquired global integrated certification at the end of FY 2005. Subsequently, the overseas subsidiaries switched to individual certification.

Environmental Management Framework

In April 2020, Fujitsu Group set up the Sustainability Management Committee, which leads the charge for management which takes sustainability initiatives into account. The Sustainability Management Committee has established major sustainability issues which are common globally (Global Responsible Business: GRB) and is working to address them, and the environment is one of those to be addressed. In "environmental initiatives" medium-to-long term visions considered and activity policy discussed and decided, and business operations being considered with risks and opportunities from climate change, with regular reports into Sustainability Management Committee, which aim of raising the level of the EMS and strengthening its governance. Based on that, final approvals on environmental management at the Fujitsu Group are made at meetings of the Management Council.

Environmental Management Framework



Within the Sustainability Management Committee, we have organized environmental organizations in charge of issue-specifics, etc., composed of relevant parties that go beyond the framework of business groups and business units. Through this promotion structure, we are moving swiftly to popularize initiatives for addressing environmental issues throughout the Group.

Constructing and Operating Environmental Management Systems

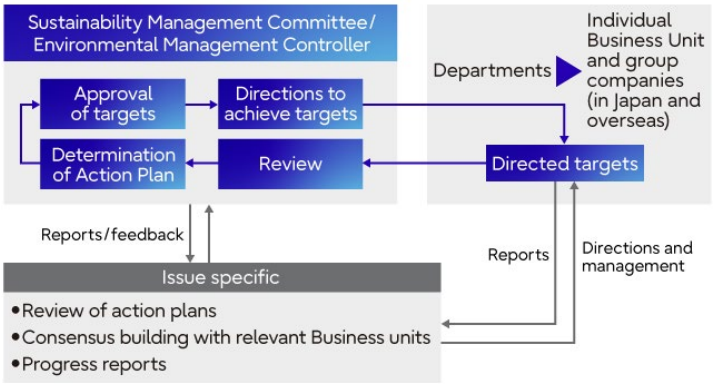
The Fujitsu Group has constructed EMS based on the ISO 14001 international standard and is promoting environmental improvement activities across the group. By constructing EMS worldwide, the Fujitsu Group further strengthened its Group governance. This also allows the Group to promote even more efficient and highly effective environmental activities, including understanding the state of activities, legal compliance, and emergency response.

As of March 2022, the Fujitsu Group has acquired group-integrated ISO 14001 certification for a total of 29 companies including Fujitsu and its group companies in Japan.

Activity Flow

The Sustainability Management Committee reviews and conducts deliberations about the new challenges and activities directions of "environmental initiatives", which related to whole group companies regarding the operational status and achievement of targets with regular report. For example, the committee determines the directions to be taken for reduction of energy consumption and CO_2 emissions, countermeasure for environmental risk, and other environmental medium-to-long term visions. The Sustainability Management Committee also conducts environmental management reviews and is exercising approval authority for the Fujitsu Group Environmental Action Plan.

Activity Flow



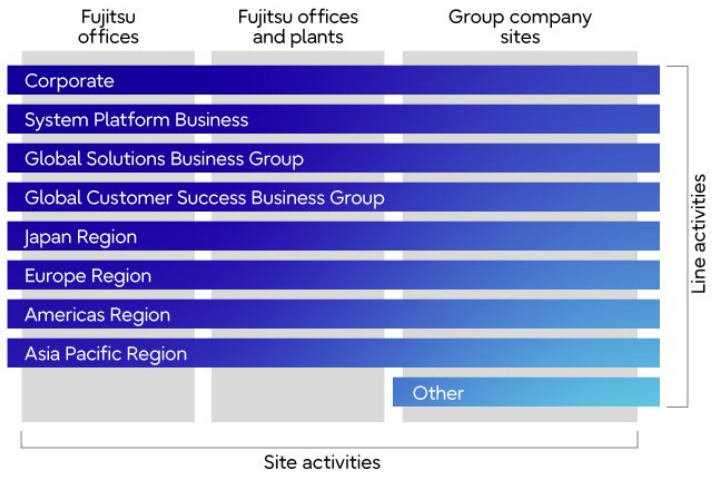
Organizations in charge of issue-specific are sub-organizations set up under the Sustainability Management Committee, with the goal of providing dedicated responses to address specific tasks professionally. The tasks of the organizations are discussing targets and confirm the progress and promote to achieve for the Environmental Action Plan. The Environmental Management Controller gives approval and issues directions in response to the progress reports made by the organizations.

Management Based on the Line/Site Matrix Structure

The Fujitsu Group carries out its environmental management within a matrix structure combining (1) "line activities" directly tied to the business operations of various Business Groups and companies (including development of eco-friendly products and the expansion of environmental contribution solutions) and (2) "site activities" to tackle common themes affecting each factory or business location (such as energy conservation and waste reduction).

In this way we carry our environmental management according to the same framework as our management, while also reducing the environmental footprint generated by our business activities and the sale of our products and services.

Line/site matrix



› Environmental Management Initiatives (Case Studies)

Environmental Management

Environmental Management Initiatives (Case Studies)

Operations Utilizing ICT

The Fujitsu Group actively utilizes its own ICT-driven environmental management tools to visualize and boost the efficiency of its environmental management.

EMS Operations Using ICT

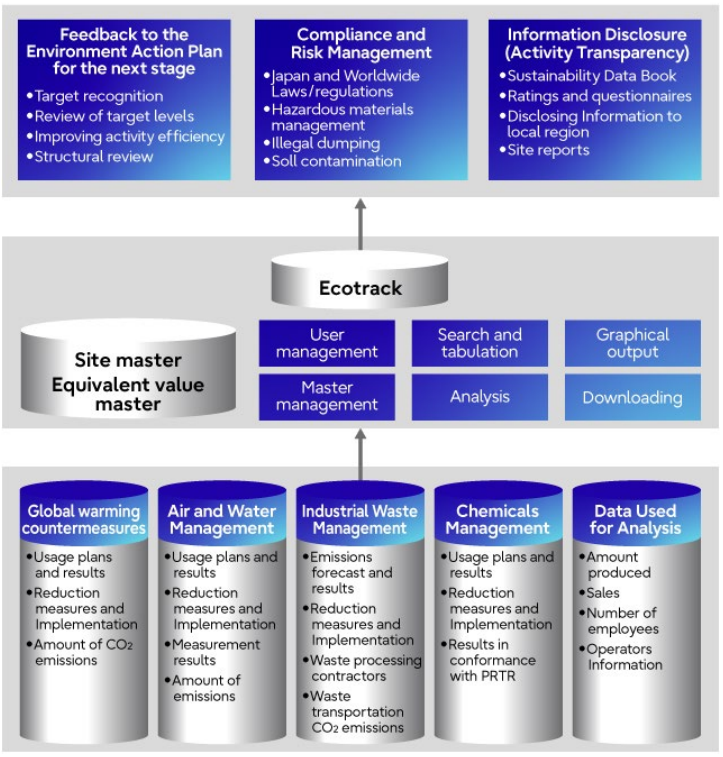
The Fujitsu Group employs its own ICT-driven environmental management tools. Examples include the Global Environment Database System (Ecotrack) which can centrally manage aspects such as planning, performance, and policy information, at business sites scattered throughout the world, and the ISO 14001 Green Management System (GMS) which centrally manages compliance and risk management status to support EMS operations. These tools are employed to visualize environmental management and make it more efficient.

Additionally, the communication infrastructure of all companies in the Fujitsu Group is used for EMS operations. For example, we try to conduct smart communication in our EMS operations, through activities such as using remote video conferencing systems to conduct EMS briefings.

Using the Global Environment Database System

The Global Environment Database System (Ecotrack) is used to gather information about the environmental footprint (performance) of Fujitsu Group companies and business sites and centrally manage aspects such as planning, performance, and policy information.

Global Environmental Database System



Using the ISO 14001 Green Management System

The Fujitsu Group uses the ISO 14001 Green Management System (GMS) to exercise unified control over the operational status of the EMS concerning matters such as the status of improvements and the state of compliance with regard to items pointed out by internal audits, communications activities, direct and indirect effects identified in environmental impact assessments, and the setting of environmental targets.

Through the GMS, we can manage corrective measures and objectives with certainty, and it has been effective for continuously improving our activities and reducing risks.

ISO 14001 Green Management System

Implementing Environmental Audits

Internal Audit Implementation and Results

The Fujitsu Group conducts internal audits, a requirement of ISO 14001. To ensure the objectivity and independence of internal audits, the Internal Control and Audit Office takes the lead, allocating internal auditors who belong to Fujitsu or Fujitsu Group companies and carries them out.

Internal audits continued in FY 2021. Due to the impact of COVID-19, we conducted audits remotely using smartphones based on the Fujitsu Group's instructions for preventing infection, which included the promotion of Work-from-Home, as well as avoiding face-to-face contact in meeting rooms and travel between prefectures.

In FY 2021, we carried out internal audits of 82 business sites in Japan, including the plants and offices of Fujitsu and its Group companies. When conducting audits, we closely examined the results of internal audits and external audits from FY 2020. The four points emphasized were (1) the status of implementation of the environmental management system, (2) checking the status of our efforts in response to the Environmental Action Plan Stage X, (3) identification of risks to corporate management that could harm Fujitsu's reputation, and (4) sampling inspections at sites such as plants.

Since Fujitsu acquired integrated ISO 14001 certification in FY 2005, FY 2021 was the first time no non-conformities were detected. Six observations were noted, that proportionally to the reduction by half of the audit organization number. Due to the continuing COVID-19 pandemic, on-site inspections were foregone and all audits were conducted remotely. Fujitsu continued to provide support to each part of the organization, including briefing sessions for EMS person in charge via remote conferencing systems, online education for newly appointed person in charge, education about waste, and confirmation of legal compliance, and the number of findings was kept at the same level as in the previous year.

External Audits and Results

To maintain our ISO 14001 certification, we are carrying out external audits by a certifying body. In FY 2021, we were audited in Japan by the Japan Audit and Certification Organization for Environment and Quality (JACO). As a result, there were 33 opportunities for improvement and zero findings. We shared information about those opportunities within the Group, and are working to improve our response.

Table: Number of Findings by Audits

	FY 2019 (Japan and overseas)	FY 2020 (Japan)	FY 2021 (Japan)
Number of findings by internal audits	30	13	6
Number of findings by external audits	6	0	0
Number of opportunities for improvement	50	52	33

Compliance with Environmental Laws

There were no major legal or regulatory violations or accidents with major impact on the environment in the Fujitsu Group during FY 2021.

Environmental Management

Response to Environmental Risks

Environmental Risk Management Structure

The Fujitsu Group built and operates a group-wide risk management system to identify, prevent, and mitigate a variety of potential risks, or prevent their recurrence, including issues related to climate change and environmental pollution. The Risk Management & Compliance Committee, which reports directly to the Board of Directors, has set up regional Risk Management & Compliance Committees, in addition to deploying Risk Management & Compliance Officers to each Fujitsu division and Group company in Japan and overseas, to build a structure where these organizations cooperate with each other to promote risk management and compliance throughout the Fujitsu Group, both in terms of preventing potential risks and responding to risks that have emerged. The Committee identifies, analyzes, and assesses key risks associated with the business activities of each Fujitsu division and Group company in Japan and overseas (focusing on 33 risks considered to be important to the Group), and formulates and reviews the countermeasures for these risks after confirming the status of countermeasures for avoiding, mitigating, transferring, or retaining them. The Committee makes regular reports to the Board of Directors about key risks that have been identified, analyzed and assessed, using methods such as the creation of visualized rankings and maps which take the degree of impact and likelihood of occurrence into account. In addition, we have put response processes into place in the event that risks become tangible, despite the implementation of various measures. Each division and Group company will immediately report to the Risk Management & Compliance Committee about any key risks that become tangible, such as natural disasters, accidents, product accidents or failures, system or service problems, compliance violations such as fraud, information security incidents, or environmental problems.

We also leverage the group's Environmental Management System (EMS), which is based on ISO14001, for minimizing risks to the environment through continuous improvements.

- Risk Management
- Environmental Management System

Efforts to Minimize Risks to the Environment

Dealing with Risks Related to Climate Change

There is a possibility of significant impacts on our business continuity from increases in the frequency and effects of natural disasters as a result of recent climate changes. For that reason, we have formulated a business continuity plan and are devoting effort to continually revising and improving the plan.

In addition to risks such as implementation of stricter regulations for greenhouse gas emissions and a carbon tax, there is demand from customers and society for contribution to carbon neutral. This creates a risk of increasing the energy cost incurred by the Fujitsu Group, as well as the cost required to comply with regulations related to measures for reducing greenhouse gas emissions. Additionally, if climate change countermeasures are insufficient, there is a risk of harm to our corporate reputation or a disadvantage at bidding.

In order to minimize these risks, we are conducting short-term, medium-term and long-term risk analysis/response within our company-wide risk management structure. Moreover, as climate change countermeasures, we are working to reduce greenhouse gas emissions in line with the 1.5°C scenario of the Paris Agreement, to achieve net zero CO_2 emissions by 2050, and to contribute to mitigation/adaptation for climate change through business.

In accordance with the recommendations issued in 2017 by the Task Force on Climate-Related Financial Disclosures (TCFD), the Fujitsu Group analyzes and discloses information related to risks accompanying climate change that may have an impact on business and financial strategies. Refer to the table below for the currently recognized potential major risks and responses.

Risks Associated with the Transition to a Low Carbon Economy, and Our Response to Them

Policy/Legal Risks	● Risks:	Increase in cost in order to respond to the strengthened laws and regulations on greenhouse gas emissions and energy use (such as a carbon tax), and diminished corporate value in the event of a violation.
	○ Response:	Complete compliance with laws and regulations through EMS. Continual reduction of the amount of GHG emissions through steady implementation of Science Based Targets and the Environmental Action Plan.
Technology Risks	● Risk:	Unrecovered investments and market share decline in the event that the company lags behind in a fierce competition in technological developments toward a carbon-free society (such as energy-saving performance and low-carbon services).
	○ Response:	Enhance development of energy-efficient products and energy-efficient enabling technologies, solutions, and services through steady implementation of Science Based Targets and our Environmental Action Plan.
Market Risks	● Risk:	Losing business opportunities if products, solutions, and services do not meet energy-saving performance needs.
	○ Response:	Enhance development of energy-efficient products and energy-efficient enabling technologies, solutions, and services through steady implementation of Science Based Targets and our Environmental Action Plans.
Risks to Reputation	● Risk:	Decline in corporate value and an increase in response costs associated with a negative assessment from stakeholders with regard to the response status of measures to counteract climate change (such as the percentage of renewable energy adoption).
	○ Response:	Enhance measures to counteract climate change and promote reduction of environmental footprint through steady achievement of the group's Science Based Targets and Environmental Action Plan.

Climate Change Related Risks in the Supply Chain, and Our Response to Them

Upstream Supply Chain	● Risk:	A temporary suspension of the suppliers' business activities due to the occurrence of severe natural disasters such as large-scale floods, sudden heavy downpours, and lightning strikes, which affects the procurement of materials.
	○ Response:	Conduct surveys of the business continuity capabilities of suppliers and implement measures to procure materials from multiple sources.

Downstream Supply Chain	● Risk:	Losing business opportunities due to the inability to obtain environmental labelling, which is a green procurement requirement of customers.
	○ Response:	Conduct trend surveys and risk assessments of the environmental labelling scheme. Develop and provide top-level energy-efficient products through steady implementation of Science Based Targets and our Environmental Action Plan.

RELATED INFORMATION

- Fujitsu Group Responses to the CDP Climate Change Questionnaire 2021 (Risk-Related Questions) (PDF link)

Assessing and Monitoring of Potential Water Risks

In recent years, due to a tight demand-supply situation in many areas around the world because of water damage—such as flooding—and droughts that are caused by a variety of factors, including population growth and climate change, there is a growing concern that this issue may become a business risk. The Fujitsu Group conducts assessments of and monitors potential water risks for direct operations sites and supply chains.

Specifically, while using tools and databases provided by NGOs and national and local governments, we identify water stress conditions and natural disaster risks in regions where our business sites are located in accordance with RCP 4.5 (intermediate stabilization scenario) from among the emissions scenarios defined by the Intergovernmental Panel on Climate Change (IPCC). We then comprehensively assess the water risk at each site by analyzing how important water use is in the business activities of each operations base, and we confirm the level of compliance in a variety of activities such as the reduction of water intake, measures to reduce pollution in wastewater, business continuity management (BCM) systems, and others. For the supply chain, we also assess our suppliers' flood preparedness and other water risks based on the supply chain BCM surveys, field surveys conducted according to the Responsible Business Alliance's (RBA) code of conduct and the CDP Supply Chain Program. As a result, we have confirmed that there are no significant risks that could substantially affect our business activities.

RELATED INFORMATION

- Fujitsu Group Responses to the CDP Water Security Questionnaire 2021 (Risk-Related Questions) (PDF link)

Flooding Damage Impact Assessments Through Hazard Maps and Measures Against Flooding

Fujitsu and its domestic Group companies conduct impact assessments of flooding damage according to a rainfall scale with two types, depending on the magnitude of the impact on our business, as follows. We identify and assign rankings to business sites which will be highly impacted. If a business site falls under a level 4 impact ranking, we implement various measures.

[Assessment 1 Planned scale (Rainfall on a scale that occurs about once every 10-100 years)]

- Assessment subjects: 169 sites for Fujitsu, 280 sites for Group companies All owned properties and major leased properties (such as sales offices and data centers) in the Fujitsu Group
- Assessment method: We assess whether or not the site falls within the "estimated flood inundation area (planned scale)" for nearby rivers as established by the Ministry of Land, Infrastructure, Transport and Tourism or the prefectural government, as well as the extent of the impact within and outside the site and the impact of flooding on buildings.
  We rank sites that were assessed as being impacted by flooding on a scale of 1 (minor impact) to 4 (major impact).

[Assessment 2 Assumed maximum scale (Rainfall on a scale that occurs about once every 1000 years)]

- Assessment subjects: Domestic data centers and business sites that will be heavily impacted by flooding (such as Fujitsu Solution Square (SS) and the Kawasaki factory)
- Assessment method: We conduct reassessments by upgrading the criteria to "estimated flood inundation area (assumed maximum scale)," and rank the sites on a four-point scale.

[Results for Assessment 1 and Assessment 2　*Only sites with an impact rank of 4 are shown below.]

	Sites	Assessment 1 (Assessment on a planned scale)	Assessment 2 (Assessment on an assumed maximum scale)	Final impact
Fujitsu	Fujitsu SS	Impact rank 4	Impact rank 4	Impact rank 4
Fujitsu	Kawasaki factory	No impact	Impact rank 4	Impact rank 4
Group companies	No sites which fall under impact rank 4			

[Major Measures]

(a) Retaining walls and embankments

(b) Sliding gates

Fujitsu SS: The site perimeter is protected by retaining walls and watertight panels

(a) Removable watertight panels

(b) Gates that can be raised and lowered

Kawasaki factory: Perimeter entrances and exits are protected by watertight panels

Preventing Water Pollution

In order to preserve the water quality of surrounding waterways, including rivers, groundwater and sewers, we have set voluntary controls that are even tougher than legal mandates, and conduct measurement and monitoring on a regular basis. We recover and recycle chemicals used in production processes, instead of discharging them into wastewater. We are also working to properly manage and reduce discharge of harmful substances and other regulated substances (COD, BOD, etc.) by ensuring appropriate chemical use, preventing chemical leaks and penetration, and properly managing the operations of water treatment and purification facilities, among other measures.

Preventing Air Pollution

We have set voluntary control values that are more stringent than legally mandated emissions standards in order to prevent air pollution and limit acid rain. Regular measurement and monitoring are conducted based on these controls. Efforts are also made to appropriately process dust and soot, sulfur oxide, nitrogen oxide, and other harmful substances, and reduce emissions through measures including combustion management at facilities that produce soot and smoke, use of fuels with low sulfur content, and managing the operations of exhaust gas processing equipment. Furthermore, we have installed activated carbon adsorption treatment equipment and are reducing our atmospheric emissions of organic solvent vapors containing substances like VOCs. Moreover, with the enactment in April 2015 of the Act on Rational Use and Proper Management of Fluorocarbons, we have set in-house stipulations and striven for proper management of specified products (commercial refrigerators and air conditioners containing fluorocarbon refrigerants) while working to identify the volume of our fluorocarbon leakage.

In addition, emission of dioxins has been prevented by suspending use of all in-house incineration facilities as of January 2000.

Preventing Destruction of the Ozone Layer

By implementing a precision water-wash system and non-wash soldering technology, we have completely eliminated the use of ozone-depleting substances in manufacturing processes (parts washing and solvents). We have also implemented leakage countermeasures for refrigerant chlorofluorocarbons used in air conditioning facilities (freezers, etc.), and are switching to non-chlorofluorocarbon gas when updating facilities.

Results for complete elimination of ozone-depleting substances

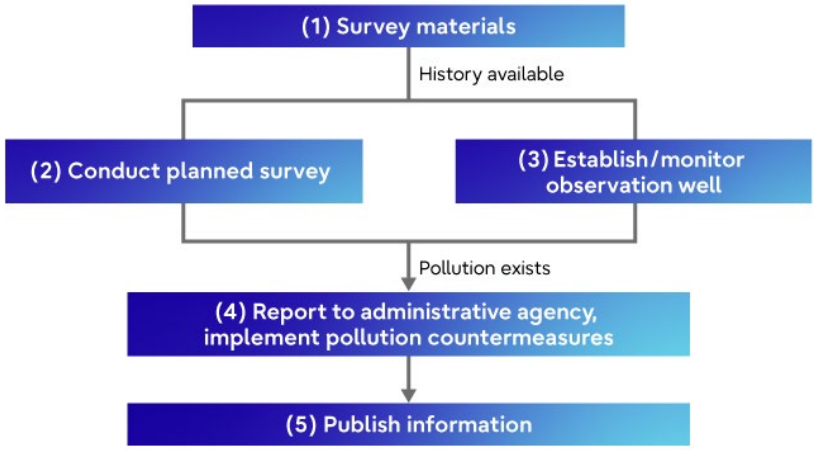
Ozone-depleting substances	Time of complete elimination
Washing chlorofluorocarbons (CFC-113, CFC-115)	End of 1992
Carbon tetrachloride	End of 1992
1,1,1-trichloroethane	End of October 1994
Alternative chlorofluorocarbons (HCFCs)	End of March 1999

Preventing Pollution of Soil and Groundwater

We have established rules for soil and groundwater surveys, measures and disclosures. We review these in accordance with changes in the law and social circumstances and respond based on these rules. We systematically examine soil and groundwater, based on the rules, and if pollution is confirmed, we carry out cleanup and countermeasures at each plant according to the situation, while working together with government authorities to disclose information.

As of FY 2021, there are four business sites where soil and groundwater pollution from prior business activities have been confirmed. At those business sites, we have installed observation wells to observe effects outside the site due to groundwater pollution, while also working on purification measures through water-pumping aeration, etc.

Monitor Impact of Groundwater Pollution on Areas Outside of Premises*



*Monitor impact of groundwater pollution on areas outside of premises, which is the greatest risk of soil/groundwater water pollution

Business Sites Where Soil or Groundwater Contamination Has Been Found

Site Name	Location	Cleanup and Measure Execution Status	Maximum Value Found at Observation Well (mg/L)		Regulated Level (mg/L)
			Substance	Measured Value	
Kawasaki Plant	Kawasaki City, Kanagawa Prefecture	We are continuing to clean up VOCs by pumping and aeration.	1, 2-dichloroethylene	2.2	0.04
			Chloroethylene	5.9	0.002
Oyama Plant	Oyama City, Tochigi Prefecture	We are continuing to clean up VOCs by pumping and aeration.	Trichloroethylene	0.332	0.01
			1, 2-dichloroethylene	3.387	0.04
			Chloroethylene	0.69	0.002
Nagano Plant	Nagano City, Nagano Prefecture	We are continuing to clean up VOCs by pumping and aeration.	Chloroethylene	0.028	0.002
FDK Washizu Plant	Kosai City, Shizuoka Prefecture	We are continuing to clean up VOCs by pumping and aeration.	Tetrachloroethylene	0.039	0.01
			Trichloroethylene	0.42	0.01
			Cis-1, 2-dichloroethylene	0.047	0.04
			Chloroethylene	0.0055	0.002

Chemical Substance Control

To prevent pollution of the natural environment or damage to health due to the use of harmful chemical substances, we are controlling the use of some 1,300 substances using our original Chemical Information System called "FACE" and working to appropriately control and reduce emissions at our business sites.

› Fujitsu Group Environmental Action Plan (Stage IX): Reducing Chemical Substances Emissions

With regard to chemical substances included in products, we have determined banned substances according to regulations in Japan and worldwide and are working to thoroughly control them, not only inside the Group but also with business partners who deliver materials and products to us.

› Green Procurement

Appropriately Processing Waste

We regularly carry out on-site audits in order to confirm that subcontractors are appropriately handling the waste processing tasks we entrust to them.

In addition, with regard to high concentration polychlorinated biphenyl (PCB) waste (transformers and condensers) processing, we have registered with the Japan Environmental Storage & Safety Corporation (JESCO), which handles temporary storage and disposal of PCB waste under government supervision, and are carefully carrying out processing based on JESCO plans.

Environmental Liabilities

In properly assessing the Fujitsu Group's expected future environmental liabilities, and communicating our integrity and corporate stance of not deferring our liabilities, we have recorded liabilities of 2.25 billion yen in soil pollution cleanup costs, high-level polychlorinated biphenyl (PCB) waste disposal costs, and asbestos processing costs during facilities demolition, which is the amount we calculate, as of the end of FY 2021, to be necessary for the Fujitsu Group to conduct these tasks domestically in the next fiscal year and beyond.

Conserving Biodiversity

Recognizing that our business activities benefit from the riches of the Earth's biodiversity, while at the same time impacting it, the Fujitsu Group considers the conservation of biodiversity to be an important issue, and formulated the Fujitsu Group Biodiversity Action Principles in October 2009. We promote them based on the two pillars of reducing the impact of our business activities on biodiversity and contributing to the creation of a society that conserves biodiversity, and implement various policies such as leveraging ICT for conserving biodiversity. In recent years, based on the achievement of the internationally-discussed Nature Positive by 2030 and the content of the Post-2020 Biodiversity Framework, we have recognized the importance of promoting initiatives as soon as possible and are conducting the following activities.

- **Activity Example 1: Setting Targets for Visualizing and Reducing the Impact of Corporate Activities on Ecosystems and on Biodiversity**

  As one of the goals of the Fujitsu Group Environmental Action Plan (Stage X), we have set targets related to conserving nature and biodiversity, and have started activities to evaluate and reduce the dependence and impact on nature and biodiversity in our corporate activities.

› 5-3-3-12 Living in harmony with nature (Conservation of Biodiversity)

- **Activity Example 2: Blakiston's Fish Owl Call Recognition Project**

  We offer call recognition software used for habitat surveys of Blakiston's fish owls, which are an endangered species (software is provided to the Wild Bird Society of Japan). Implementing measures based on the results of habitat surveys is important for the conservation of Blakiston's fish owl. Surveys are conducted by analyzing recorded data of the owls' cries. However, the huge amount of time required to judge cries by human hear was a problem. By providing call recognition software, we help the surveys to be more efficient by automatically extracting their cries, greatly reducing the time for analysis.

› Blakiston's Fish Owl Call Recognition Project

- **Activity Example 3: Support for the Harapan Rainforest (Forest of Hope)**

  We continually provide support for reforestation activities in the Harapan Rainforest (Forest of Hope) on the Indonesian island of Sumatra (support provided to BirdLife International Tokyo). Dealing with forest fires and illegal logging is an urgent issue in Harapan Forest. By introducing ICT to greatly improve the efficiency of patrols in the forest patrols, this activity contributes to forest conservation.

› Providing Support for the Harapan Tropical Rainforest (Forest of Hope) (Indonesia)

- **Activity Example 4: Activities to Make Tsushima, An Island Facing a Severe Plastic Waste Pollution Problem, Greener**

  In response to global environmental issue of marine plastic litter, Fujitsu Limited holds eco-tours of Tsushima by Fujitsu Group employees (with cooperation from the Japan Environmental Action Network). We also held a coastal cleanup and an ideathon to come up with solutions to local issues. These activities aim to deepen awareness of the issue of marine plastic litter and lead to actions for resolution through hands-on experience by each and every employee.

- Tsushima, An Island Facing a Severe Plastic Waste Pollution Problem

- **Activity Example 5: Promotion of Initiatives in Collaboration with External Organizations (Keidanren, WIPO, JBIB)**

  The Fujitsu Group collaborates with various external organizations to promote initiatives for conserving biodiversity. For example, we support the Declaration of Biodiversity by Keidanren and participate in the Initiative based on the Declaration of Biodiversity by Keidanren. Also, the promotion video for the Business for GBF Project by the Ministry of the Environment and Keidanren features the Blakiston's Fish Owl Call Recognition Project as an example project. Furthermore, Fujitsu participates as a partner in WIPO GREEN, which is a framework for matching the transfer of environmental technology and services operated by the World Intellectual Property Organization (WIPO), and we signed an intellectual property asset license agreement with academic institutions in relation to technology for conserving natural assets and biodiversity. Additionally, Fujitsu participates in the Japan Business Initiative for Biodiversity (JBIB), and we hold activities for the purpose of research and practice related to corporations and biodiversity through working activities.

- Initiative based on the Declaration of Biodiversity by Keidanren
- Promotion Video for Business for GBF Project
- Fujitsu Aims to Achieve SDGs by Concluding IP Licensing Agreements Through WIPO GREEN Activities
- Japan Business Initiative for Biodiversity (JBIB)

Environmental Management

Green Procurement

We are implementing green procurement alongside our business partners, to provide customers with products and services that have light environmental footprints.

Procurement Activities Based on Green Procurement Direction

The Fujitsu Group summarized its requirements for business partners regarding the purchase of green parts, materials, and products, in the "Fujitsu Group Green Procurement Direction." This standard is posted on a multilingual basis (in three languages) in order to promote penetration to our business partners. We make an effort to communicate by various means, such as briefing sessions or individual meetings if necessary. Through such activities, the Group implements green procurement activities in conjunction with its partners in Japan and overseas and it promotes procurement from business partners that fulfill the green procurement requirements (see below).

Using the Fujitsu Group Environmental Survey Sheet, we conduct annual monitoring of our business partners' statuses with regard to environmental management systems, CO_2 emission reduction, biodiversity preservation, and water resource preservation activities, and ask them to take appropriate measures. When making requests, we provide them with various kinds of information—such as guidance on activities to reduce CO_2 emissions, explanatory documents related to water risk, and the water risk information tool AQUEDUCT—which have been useful for our business partners.

- Fujitsu Group Green Procurement Direction

Green procurement requirements for business partners

Requirement	Business partners (materials/parts)(*1)	Business partners (non-materials/parts)
1. Establishment of environmental management systems (EMS)	✔	✔
2. Compliance with regulations for Fujitsu Group specified chemical substances	✔	—
3. Establishment of chemical substance management systems (CMS)	✔	—
4. CO_2 emission control/reduction initiatives	✔	✔
5. Biodiversity preservation initiatives	✔	✔
6. Water resource preservation initiatives	✔	✔

(*1) Business partners (materials/parts):
Business partners that supply components for Fujitsu Group products or OEM/ODM products

Establishment of Environmental Management Systems

We request our business partners to establish environmental management systems (EMS)(*2) as a base for ensuring that they independently and continuously improve their environmental-preservation activities. In general, we prefer them to have third party-certified EMS. If this is not possible, we ask them to build EMS incorporating the PDCA cycle suited to their circumstances.

(*2) EMS: Environmental management systems.

CO_2 Emission Reduction Initiatives

The Fujitsu Group also asks our business partners to work toward CO_2 emission reduction in hopes of addressing climate change.

Specifically, we ask them to clearly express the intentions of their initiatives and request that they make efforts to achieve the objectives they set. We also ask them to collaborate with external organizations, where possible, and encourage their own suppliers to make similar efforts, in order to expand the initiatives outside their respective businesses. Our annual Supply Chain Business Continuity Survey gives us a clear picture of how business partners are responding to a variety of climate-change risks, including tsunamis, floods, and torrential rains.

Water Resource Conservation Initiatives

As populations grow rapidly and water sources become progressively more contaminated, the increased need for water around the world, as well as water resource scarcity, has become an international challenge. Water resource conservation initiatives are necessary, even in business activities. The Fujitsu Group asks its business partners to investigate and understand the water risks associated with their own companies, and engage in water resource conservation initiatives, such as preventing water pollution and reducing water use.

Acquiring and Managing Information on Chemical Substances Contained in Products

Countries around the world are establishing legal regulations as to the chemical substances contained in products, for instance the RoHS directive (*3) and the REACH regulation (*4). The scope of such regulations is expanding on an almost day-to-day basis, covering more and more substances, products, and applications.

The Fujitsu Group, using chemSHERPA (*5) as its standard format, investigates and acquires information on the chemical substances contained in our products. We share our findings with Group companies via our internal system, and allow relevant parties to access the information whenever necessary. We have established a system that allows for quick adaptation to revisions of laws/regulations and the enactment of new legal systems.

(*3) RoHS directive: Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
(*4) REACH regulation: Regulation for Registration, Evaluation, Authorization, and Restriction of Chemicals
(*5) chemSHERPA: Chemical Information Sharing and Exchange under Reporting Partnership in Supply Chain

Establishing a Chemical substance Management System (CMS) for Product Substances

The Fujitsu Group not only asks business partners for information on chemical substances contained in their products; we also ask them to establish a Chemical substances Management System (CMS), based on the industry-standard JAMP (*6) guidelines on the management of chemical substances contained in products. Doing so enables the Group to comply even more thoroughly with laws and regulations related to the chemical substances contained in our products.

The Group also carries out CMS audits in order to confirm appropriate establishment and operation of such CMS. More specifically, Fujitsu's auditors implement on-site evaluation of the management status of the chemical substances contained in our business partners' products. If there are any inadequacies, auditors make requests for corrections and provide support for their enactment. Even after the establishment of CMS, we maintain awareness of its operation status through periodic audits.

(*6) JAMP: Joint Article Management Promotion-Consortium.

Environmental Management

Environmental Training and Awareness Activities for Employees

The Fujitsu Group conducts various environmental education and awareness activities based on the belief that "Greater environmental awareness and proactive efforts among all employees are essential for pursuing environmental management."

Comprehensive Environmental Training

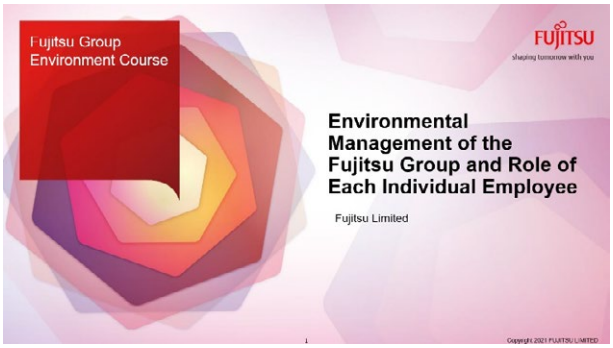
We offer environmental e-Learning opportunities for all employees through programs in our company-wide training system to promote a basic understanding of environmental management. Training is also conducted on a per-division basis. Specialized trainings such as internal auditor training and training for those in charge of waste practices are also conducted for employees who are in charge of environment-related tasks.

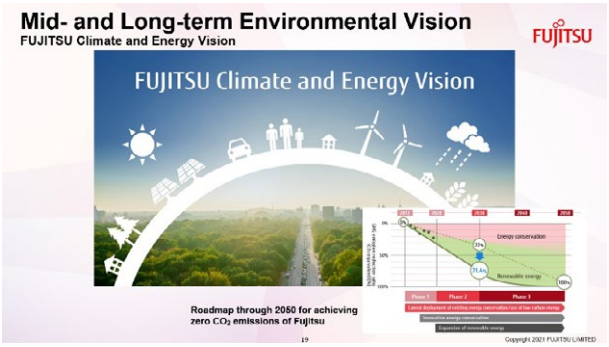
Fujitsu's Environmental Training Scheme

	New hires	Employees	Managers	Top management
General training	Environmental e-learning			
Specialized training Note: Only relevant persons attend sessions	Function-specific training (ad-hoc)			
	Internal auditor training			
	Waste management officer training			
Awareness	Seminars, workshops, etc.			
	Sustainability contribution awards			
	Communication through the Internet and social media			

Environmental e-Learning

We offer educational opportunities for employees to comprehensively learn about global trends relating to the environment, the environmental management of the Fujitsu Group, and the role played by each employee, based on the theme of "Environmental Management of the Fujitsu Group and Role of Each Individual Employee" This education is positioned as providing fundamental knowledge that all Fujitsu employees should have under the company-wide employee training system.





Communication Through the Internet and Social Media

By disseminating information through the Internet and having lively exchanges of ideas via social media, we encourage employees to think of environmental and societal issues as personal ones.

Spreading Internal Awareness About the Issue of Plastic Waste

In addition to reducing plastic waste through conventional business activities, starting in June 2019, we have worked to reduce the amount of disposable plastic used in offices, and conducted activities to raise employee awareness. We developed campaigns that used the intranet and social media, and worked to spread awareness within the company while listening to what many employees had to say.

Poster for the reusable shopping bag declaration

- We conducted a campaign on the intranet that declared we would use reusable shopping bags with the aim of reducing disposable plastic waste, such as shopping bags. More than 3,000 employees posted messages.
- We established a group for “Sustainable Consumption Activities” on Yammer, our internal SNS, and conducted a campaign for employees to bring their own bottles. By conducting a campaign in conjunction with our efforts to move away from drinks in plastic bottles sold by vending machines at our business sites in Japan, as well as the elimination of plastic straws at company cafeterias, we had lively exchanges of ideas about everyday eco-friendly activities, and how the Group can contribute to environmental and social issues.
- In addition to a report posted on our public website about the eco-tour to Tsushima, which was themed around the issue of marine plastic waste, we posted a video primer on a video site to explain the problem. Our efforts to raise awareness are not just within the company.

(External Links)

- Tsushima, One of the Most Plastic Contaminated Islands
- [Primer] What is the Marine Plastic Waste Problem?

Yammer community site, “Sustainable Consumption Activities”

Medium- to Long-Term Vision Focused on Climate Change

The Fujitsu Group Medium/Long-term Environmental Vision "Fujitsu Climate and Energy Vision"

The Fujitsu Group has established the "Fujitsu Climate and Energy Vision," a medium- to long-term environmental vision with the goal of bringing the Fujitsu Group's CO_2 emissions to zero by 2050, as well as contributing to the achievement of a carbon neutral society and the adaptation to climate change, through provision of technologies and services supporting digital transformation.

The Importance of Responding to Climate Change

Climate change, which will have a significant long-term impact on countries and regions around the world, is an important issue for us as a global company. Disasters caused by climate change will disrupt procurement, logistics and energy supply networks, making it difficult to procure parts and energy for our business sites. Tighter regulations on greenhouse gas (GHG) emissions will affect our operations, and the ICT products and services we provide to our customers will also need to be made more energy-efficient. If we fail to provide products and services with excellent energy efficiency in response to regulatory and market demands, we could suffer business losses and a decline in our corporate reputation. At the same time, through innovations in AI, IoT, and other advanced technologies, it is a great business opportunity for us to form ecosystems with customers and various stakeholders, contribute to the creation of a carbon neutral society—by taking actions such as reducing the power consumption of customers and society and expanding the use of green power—and provide services and solutions which facilitate adaptation to climate change.

The Fujitsu Group considers climate change to be a serious issue (materiality) that must be addressed, and we have been actively working to meet the goals we previously set in our Environmental Action Plan. Furthermore, in order to contribute to addressing the issue as a leading company, we recognized the need for the Fujitsu Group to have a long-term vision and tackle the issue as a united group. We gathered knowledge and engaged in dialogue with various stakeholders through interviews with outside experts and the activities of external organizations. (*1) Taking these into account, the Environmental Management Committee (*2), led by the CEO, formulated the Fujitsu Climate and Energy Vision, our medium- to long-term environmental vision with regard to climate change, and we made it public in May 2017.

In addition, in April 2021, we revised the emissions reduction targets for FY2030 shown in Vision 1 from 33% to 71.4% in order to accelerate our own moves toward carbon neutrality.

(*1) See here for the status of stakeholder dialogue at that time.
(*2) The name of the committee in 2017. The current name is the Sustainability Management Committee.

Concept

As an international framework of measures against global warming starting in 2020, the Paris Agreement (*3), which sets a goal of limiting the rise in global average temperature to less than 2°C above the average temperature prior to the industrial revolution, came into effect in November 2016. In order to achieve this, the goal to "achieve a balance between emissions and removals of greenhouse gases (GHG) in the second half of this century" has been set, and a shift to a carbon neutral society will be necessary beginning in 2050.

Various changes are taking place in the global market as well, and it is expected that regulations on CO_2 emissions will be tightened, carbon taxes and other carbon pricing will be applied to more countries, and carbon taxes will rise sharply.

In addition, investment taking into account Environmental, Social and Governance (ESG) factors is expanding, which is also exerting a significant influence on market rules.

This vision has three pillars, namely, Our Business: Achieving Zero CO_2 Emissions; Mitigation: Contributing to a Carbon Neutral Society; and Adaptation: Contributing to Measures in Society to Adapt to Climate Change. The Fujitsu Group aims to use ICT effectively to accelerate its own efforts to shift away from carbon, and by providing the knowledge gained from such efforts to customers and society as solutions, leverage its own business activities as a way to mitigate and adapt to climate change.

(*3) Paris Agreement: New framework adopted by the 21st Session of the Conference of the Parties to the UN Framework Convention on Climate Change for measures to combat climate change starting in 2020

Achieving Zero CO_2 Emissions

Contributing to a Carbon Neutral Society

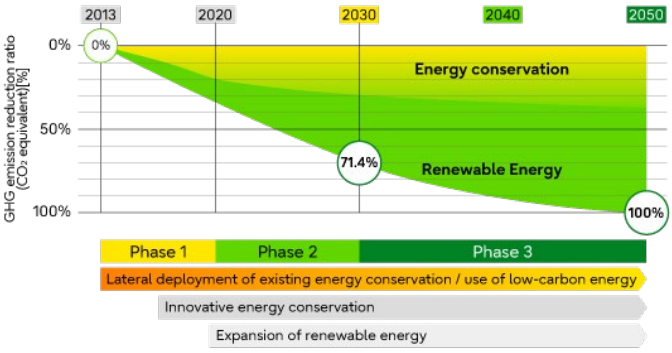
Contributing to Measures to Adapt to Climate Change

Three pillars of the Fujitsu Climate and Energy Vision

Vision 1　Achieving Zero CO_2 Emissions in the Fujitsu Group

The Fujitsu Group established a roadmap for reducing CO_2 emissions where it would gradually reduce them to zero in three phases by 2050, with its intention to take the initiative as a global ICT company to strive to create a carbon neutral society. The roadmap has been certified at 1.5°C by the Science Based Targets initiative (SBTi) (*4) that recommends setting scientifically consistent targets.

In June 2022, we submitted a commitment letter to the SBT Initiative towards the Net-Zero targets and it was accepted.



The Roadmap to reduce the Fujitsu Group's CO_2 Emissions to Zero by 2050

(*4) SBTi: An initiative jointly established by the United Nations Global Compact, the World Resources Institute (WRI: World Resources Institute), and other organizations in 2015. It encourages companies to set GHG emission reduction targets consistent with science-based evidence to the level required by the Paris Agreement, validating targets that comply with criteria including indirect emissions not only within the company but also in the supply chain.

Phase I

In Phase I (until 2020), from the perspective of usability and economic efficiency of the technology, in Japan, we will laterally deploy existing energy conservation technologies, verify new energy conservation technologies that use AI, etc., and move forward with the use of low-carbon energy. Overseas, we will proactively implement renewable energy, focusing on the EU.

Phase Ⅱ

In Phase II (until 2030), the Fujitsu Group will work to establish and spread a transition to AI and ZEB (*5), etc. to accelerate the reduction of emissions. Further, we will expand strategic implementation of renewable energy, which is expected to become easier to use in Japan, with consideration given to local characteristics and economic efficiency.

(*5) ZEB: Zero Energy Building. A building with significantly reduced yearly energy consumption achieved through conservation of energy in its structure and facilities, and thorough creation of energy by using solar power generation, etc.

Phase Ⅲ

In Phase III (2030 and after), we will accelerate implementation of increasingly easy-to-use renewable energy, while supplementing with offsets from carbon credits, with an eye toward deploying and deepening innovative energy conservation technologies and shifting away from carbon.

The Fujitsu Group intends to increase the use of renewable energy in the electricity consumed at Fujitsu Group locations to at least 40% by 2030 and to 100% by 2050. In July 2018, Fujitsu gained membership to RE100, a collaborative initiative led by The Climate Group in partnership with CDP, for companies committed to sourcing 100% of the electricity they use from renewable sources.

Visions 2 and 3: Contributing to a Carbon Neutral Society and Contributing to Measures in Society to Adapt to Climate Change

The Fujitsu Group believes that ICT has the potential to contribute to the mitigation of and adaptation to climate change. To that end, we have established Mitigation: Contributing to a Carbon Neutral Society and Adaptation: Contributing to Measures in Society to Adapt to Climate Change as pillars of Fujitsu's medium/long-term environmental vision, and we are utilizing advanced ICT to create social innovation that contributes to resolving global environmental issues.

Vision 2: Contributing to a Carbon Neutral Society

The Fujitsu Group contributes to the creation of a carbon neutral society by developing ecosystems with customers in a variety of industries and business areas. The key point of mitigation measures is the utilization of AI and other advanced digital technologies to maximize energy efficiency. We will achieve optimal usage of energy for the overall societal structure by incorporating those technologies into a mechanism that transcends boundaries between businesses, industries, and regions.

Vision 3: Contributing to Measures in Society to Adapt to Climate Change

The key point of measures to adapt to the impact of climate change is advanced measuring technology using AI, big data, and simulations through sensing technology and high-performance computing (HPC), etc. Fujitsu will utilize these to create solutions to enable creation of a resilient societal infrastructure and stable supply of agricultural products, as well as solutions to minimize food product loss, thereby contributing to the minimization of damage to our customers and society caused by climate change.

Medium- to Long-Term Vision Focused on Climate Change

Medium- to Long-Term Targets

The Fujitsu Group participates in the following initiatives with the aim of making the Fujitsu Climate and Energy Vision—its medium- to long-term environmental vision—a reality.

Approval by Science Based Targets (SBT) Initiative

In August 2017, the reduction targets of greenhouse gas (GHG) emissions from its business facilities and a part of value chain, set by Fujitsu Group, was approved by Science Based Targets (SBT) initiative as being at science based level. The SBT initiative was established in 2015 jointly by a number of organizations, including the World Resources Institute (WRI) and UN Global Compact. It encourages companies to set GHG emission reduction targets consistent with science-based evidence to the level required by the Paris Agreement, validating targets that comply with criteria including indirect emissions not only within the company but also in the supply chain.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

In April 2021, we revised its reduction targets in fiscal 2030 from 33% to 71.4% below fiscal 2013 levels and were validated as 1.5°C-aligned targets by the SBT initiatives. In June 2022, we submitted a commitment letter to the SBT Initiative towards the Net-Zero targets and it was accepted.

Targets

- To reduce GHG emissions from our business facilities by 71.4% by FY 2030 and 80% by FY 2050 in comparison to FY 2013.
- To reduce GHG emissions from our business value chain (purchased goods and services, and the use of sold products) by 30% by FY 2030 in comparison to FY 2013.

Joining RE100 as Japan's First Gold Member

In July 2018, Fujitsu joined RE100, which strives to significantly expand the adoption of renewable energy at a global scale, as Japan's first Gold Member. RE100 is an international initiative led by The Climate Group in partnership with CDP and consists of companies committed to source 100% of the electricity they use from renewable sources.

RE100 | CLIMATE GROUP | CDP

The Fujitsu Group will consider the appropriate steps for each region and expand its procurement of electricity from renewable sources at locations in Japan and around the world, starting with data centers outside Japan. The Group will concurrently continue its work on R&D and technology trials for energy management and storage, and contribute to the spread of renewable energy in society as a whole.

Renewable Energy Electricity Usage Goals at Fujitsu Group Locations

- Goal : 100% by 2050
- Intermediate Goal : 40% by 2030

Medium- to Long-Term Vision Focused on Climate Change

TCFD-Based Information Disclosure

The Task Force on Climate-Related Financial Disclosures (TCFD) was established by the Financial Stability Board at the request of the G20 with the objective to reduce the risk of instability in financial markets due to climate change. The task force announced its recommendations in June 2017, asking companies and organizations to identify and disclose the risks and opportunities arising from climate change. The Fujitsu Group announced its support for the TCFD recommendations in April 2019 and is making every effort to disclose information in line with those recommendations to investors and other stakeholders. Disclosures are provided via media such as financial statements, CDP(*1) questionnaires, the Integrated Report, and websites.

(*1) CDP: An international nonprofit organization that conducts environmental surveys of thousands of companies worldwide and acts on behalf of institutional investors with a combined US$130 trillion in assets. (As of June 2022).

Item		Response status	Reference
Governance	Oversight structure under the Board of Directors for climate-related risks and opportunities	• In the Fujitsu Group, the Sustainability Management Committee shares the risks and opportunities arising from climate change, deliberates on medium- and long-term issues, and formulates policy. It also reports on the results of these activities to the Board of Directors at meetings of the Management Council. In October 2021, the results of analysis using multiple climate change scenarios, including limiting global warming to 1.5°C, were reported on and discussed by the Sustainability Management Committee. • The Risk Management & Compliance Committee regularly reports to the Board of Directors on the most serious risks identified for the group as a whole, including climate risks. The Fujitsu Group has also developed an environmental management system (EMS) based on the ISO 14001 standard, and the results of EMS activities are reported to the Board of Directors at meetings of the Management Council.	• Sustainability Management in the Fujitsu Group • Corporate Governance • Environmental Management Systems • Risk Management
	Role of management in assessing and managing climate-related risks and opportunities	• Fujitsu's CEO, in the role of Chair of the Sustainability Management Committee and the Risk Management & Compliance Committee, bears ultimate responsibility for all decisions made and all business conducted. The Board of Directors is responsible for oversight based on reports from meetings of the Management Council. The Chief Sustainability Officer (CSO) bears the highest level of responsibility for sustainability, and in that role proposes reforms to the Board of Directors and to management and conducts business that relates to sustainability. • In April 2022, it was decided to add "non-financial indicators" that include consideration of climate change issues to the evaluation indicators for bonuses paid to Executive Directors.	

<table>
<tr><td rowspan="3">Strategy</td><td>Short-, medium- and long-term climate-related risks and opportunities</td><td rowspan="2">• Based on analyses of climate change scenarios, the Fujitsu Group identifies the risks and opportunities relating to climate change and considers and promotes appropriate responses. Developing services and IT products that contribute to climate change mitigation and adaptation offers opportunities for increased sales, while factors such as physical and regulatory risks have an impact on the operating costs of Fujitsu's operations and supply chain.

Major risks
Stronger regulation (carbon tax, etc.), Stronger competition in low-carbon technologies, Insufficient responses to customer needs

Risk responses
Ongoing reductions in greenhouse gas emissions, Increased use of renewable energy, Information disclosure aimed at ensuring transparency in climate change strategy, etc.

Major opportunities
Supplying products/services to tackle climate change, Proposing new uses of digital technology, etc.

Opportunity responses
Services for climate change mitigation/adaptation (CO_2 emissions calculation, visualization, etc.), Energy-efficient products (HPC, 5G virtualization base stations, etc.)

Note: See the CDP responses (C 2.3, 2.4) for details.</td><td rowspan="3">• Response to Environmental Risks

• The Fujitsu Group Medium/Long-term Environmental Vision</td></tr>
<tr><td>Impacts on business, strategy, and financial planning</td></tr>
<tr><td>Resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario</td><td>• In 2021, the Fujitsu Group conducted scenario analyses out to 2050 using 1.5°C and 4°C scenarios, focusing on businesses likely to be impacted by climate change.
• As a result of our analysis with respect to Fujitsu's risk responses and its ability to seize opportunities by helping customers to resolve issues, our assessment showed that Fujitsu's business strategy was resilient in the medium- and long-term.</td></tr>
<tr><td rowspan="3">Risk Management</td><td>Climate-related risk identification and assessment process</td><td>• Group-wide risk management is conducted by the Risk Management & Compliance Committee. This committee conducts matrix analysis of the results of the risk assessments by each department in terms of impact and likelihood of occurrence. It then identifies and assesses those risks and reports its findings to the Board of Directors.</td><td rowspan="3">• Response to Environmental Risks
• Environmental Management Systems
• Risk Management</td></tr>
<tr><td>Climate-related risk management process</td><td>• Fujitsu monitors risks using environmental management systems that are based on the ISO14001 standard. The Sustainability Management Committee is responsible for managing the progress of climate change measures.</td></tr>
<tr><td>Status of integration with organization-wide risk management</td><td>• The Risk Management & Compliance Committee identifies and assesses risk for the entire company, including climate change risk. It collaborates with the Sustainability Management Committee to identify, analyze, and assess risks, and then formulates and implements recurrence prevention measures.</td></tr>
</table>

Metrics and Targets

Metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process

- The Fujitsu Group recognizes the importance of reducing greenhouse gas (GHG) emissions and adopting renewable energy sources in addressing climate-related risks. We also believe that the deployment of innovative energy-saving technologies implemented by our company will lead to the acquisition of climate-related opportunities. We therefore use our GHG emissions and our rate of renewable energy adoption as indicators. We have set SBTi certification targets and RE100 targets as medium- and long-term goals and established the "Environmental Action Plan" for short-term goals. We are monitoring those indicators, managing the progress of our strategies, and conducting risk management.

Scope 1 and 2, and the corresponding Scope 3 GHG emissions

GHG emissions

Item	GHG Emissions Performance (FY2021)
Scope 1	68 ktons-CO_2
Scope 2 (Location-based)	524 ktons-CO_2
Scope 2 (Market-based)	422 ktons-CO_2
Scope 3 (Category 1)	1,207 ktons-CO_2 ★
Scope 3 (Category 11)	3,142 ktons-CO_2 ★

Targets used by the organization to manage climate-related risks and opportunities and performance against targets

Climate-related targets & performance

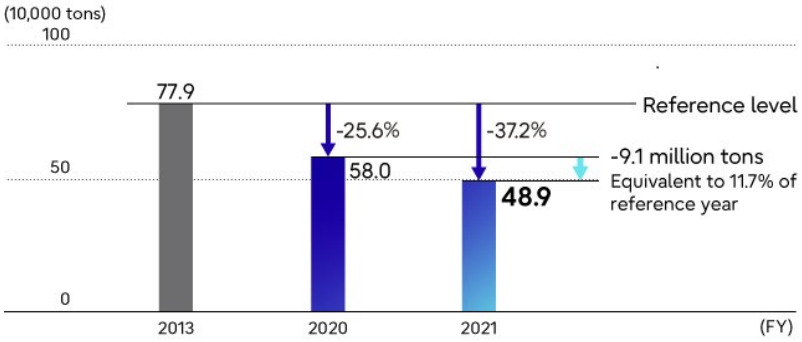
Item		Targets		Performance (FY2021)
Reducing the volume of our own GHG emissions*1	Short-term	33.6% reduction by 2021*2	Environmental Action Plan	37.2% reduction
	Medium-term	71.4% reduction by 2030*2	SBT 1.5°C certification	
	Long-term	80% reduction by 2050*2, *3	SBT certification	
Reducing the volume of the value chains' GHG emissions*1	Medium-term	30% reduction by 2030*4	SBT certification	46.9% reduction
Renewable energy adoption rate	Medium-term	40% adoption by 2030	RE100 membership	20%★ adoption
	Long-term	100% adoption by 2050	RE100 membership	

*1: vs. 2013 *2: Scope 1 + Scope 2 *3: Excluding carbon credits
*4: Scope 3 Category 1 + Category 11

- The Fujitsu Group Medium/Long-term Environmental Vision
- Fujitsu Group Environmental Action Plan

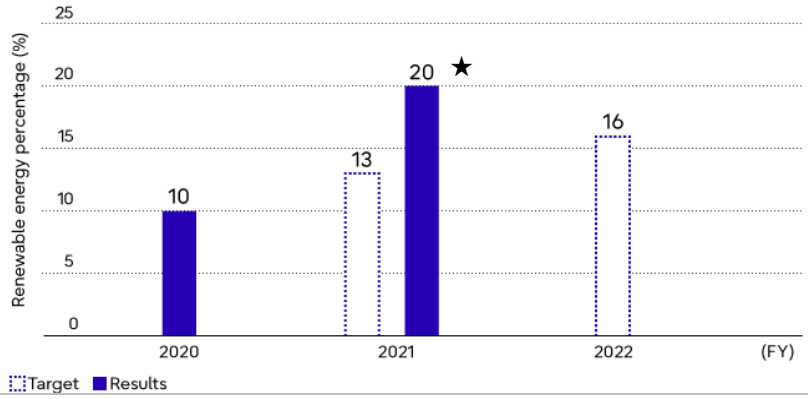
GHG emissions reduction targets & performance (Scope 1+2)

Environmental Action Plan (Stage X) GHG Emissions Reductions



Progress against renewable energy adoption targets

Environmental Action Plan (Stage X) Renewable energy percentage



Governance

The Fujitsu Group has established a Sustainability Management Committee, chaired by the CEO. This committee examines medium- and long-term issues, formulates policy, shares the business risks and opportunities of climate change and decides how to address those risks and opportunities, and manages the company's progress. It also reports on the results of its activities to the Board of Directors at meetings of the Management Council. In October 2020, the committee made a key decision by revising the Fujitsu Group GHG reduction target (SBT) from 2.0°C to 1.5°C, and in April 2021 the new target was validated as 1.5°C-aligned by the SBTi. And in October 2021, the results of scenario analyses using two external scenarios, one for 1.5°C and the other for 4°C, were reported to the Sustainability Management Committee. The findings prompted lively discussion among the committee members on topics such as the need to discuss management strategies, the selection of key solutions, and the measurement of impacts once solutions are provided.

Within the company-wide risk management regime and with oversight by the Board of Directors, the Risk Management & Compliance Committee, chaired by the CEO, conducts risk analysis and implements responses for the entire Group, including on issues relating to climate change. This committee is also the ultimate decision-making body for risk management and reports regularly to the Board of Directors regarding major risks that have been identified, analyzed, and assessed. The Fujitsu Group has also developed environmental management systems (EMS) based on the ISO 14001 standard, and the results of EMS activities are reported to the Board of Directors at meetings of the Management Council.

To further strengthen governance relating to climate change, in April 2022 we added ESG-related third-party evaluations (DJSI(*2)) and CDP climate change program(*3) evaluations as assessment indices for the bonuses paid to Executive Directors. As of FY2022, these indices will apply to their bonuses. (Executive compensation consists of base compensation, bonuses, and performance-linked stock compensation.).

(*2) Dow Jones Sustainability Index (DJSI): This is a share index published by S&P Dow Jones of the United States that analyzes companies with respect to their corporate economic, environmental, and social performance, and selects companies with superior corporate sustainability.

(*3) CDP climate change program: A program run by CDP to survey and assess corporate climate change initiatives and publish the results of those surveys.

Strategy

Climate Change Risks and Opportunities

We have identified the risks and opportunities of climate change for the Fujitsu Group, and considered our responses, by analyzing the business impacts of climate change using external scenarios for 2°C of global warming in FY2018, and for warming of 1.5°C and 4°C in FY2021. Our aim is to address the transitional and physical risks that negatively impact Fujitsu operations and supply chains, and to identify the climate-related risks faced by customers so that we can better make proposals that create value and grasp the business opportunities on offer.

<Risks>

Risk type		Term	Details	Key responses
Transition	Policy/Regulation	Short- to long-term	• Increased costs due to stronger laws and regulations relating to greenhouse gas emissions and energy use (carbon taxes, energy-saving policies, etc.) • Risk of lost corporate value if such laws or regulations are violated	• Ongoing reductions in greenhouse gas emissions (increased use of renewable energy, comprehensive energy savings) • Strict compliance with laws and regulations through EMS
	Market	Medium- and long-term	• Surging electricity prices with the shift to a carbon-neutral world (widespread electrification, etc.)	• Reduced electricity consumption by formulating internal company standards and developing innovative technology, etc.
	Technology	Medium- and long-term	• Risk of missing out on business opportunities if we fall behind in fiercely competitive technology development (energy savings, low-carbon services, etc.) and cannot meet market needs	• Promote innovation and develop products/services that address customers' climate change issues
	Reputation	Short- to long-term	• Increased cost of responding to demands from stakeholders (investors, customers, etc.) • Negative impacts on ratings and sales due to delays in responding to external demands	• Formulation and promotion of our Medium/Long-term Environmental Vision and Environmental Action Plan • Proactive information disclosure to ensure transparency in our climate change strategy
Physical (Natural disasters etc.)	Chronic/Acute	Short- to long-term	• Increased cost of responding to changing rainfall/weather patterns, higher average temperatures, higher sea levels, droughts, etc. • Increased recovery costs when operations, including supply chains, stop due to increasingly severe abnormal weather events	• Implement measures such as greater multi-sourcing, stronger BCP measures, and conducting surveys of suppliers' business continuity systems • Assess potential water risks and undertake monitoring

<Opportunities>

Opportunity type	Term	Details	Key responses
Products/services	Short- to long-term	• Increased sales by developing and supplying products and services that are highly energy-efficient	• Development and supply of high-performance, energy-saving 5G virtualization base stations, high-performance, low-energy supercomputers, etc.

Market	Short- to long-term	• Seizing new market opportunities for climate change solutions created using ICT	• Development and supply of measures to calculate and visualize CO_2 emissions in supply chains and more efficiently search for new materials in the shift to zero emissions
Resilience	Short- to long-term	• Increased sales through new products and services for resilience enhancement	• Development and supply of disaster prevention information systems and AI predictive water management systems to forecast river levels during floods

Scenario Analysis

Premise

In FY2021, the Fujitsu Group conducted scenario analyses out to 2050 using scenarios for 1.5°C and 4°C of global warming. The analyses studied businesses likely to be impacted by climate change in the following areas: Sustainable Manufacturing (sectors studied: petrochemicals, automotive, foods, electronic device-related businesses), Trusted Society (sectors studied: public sector, transportation, energy-related businesses), and Hybrid IT (sector studied: datacenter-related businesses).

Scenario selection	• 1.5°C, 4°C scenarios *Selected based on data from the IPCC, IEA, IRENA, etc.
Target businesses	Opportunity-focused analysis: Addressing climate-related risk in client industries • Sustainable Manufacturing (sectors studied: petrochemicals, automotive, foods, electronic device-related businesses) • Trusted Society (sectors studied: public sector, transportation, energy-related businesses) Analysis of both risks and opportunities: Addressing climate-related risk in Fujitsu businesses and client industries • Hybrid IT (sector studied: datacenter-related businesses)
Term	• 2050

Analysis steps & details

The analysis was conducted in 4 steps: assessment of risk severity, definition of scenarios, evaluation of impacts on business, and discussion of countermeasures.

We began by organizing the risks and opportunities for the target businesses based on data such as the TCFD recommendations and external reports. We also conducted workshops to look at the qualitative aspects of business impacts stemming from the respective items from the perspectives of Fujitsu and industry generally, and we assessed the severity of each risk or opportunity as “High”, “Medium” or “Low”. We then considered the future changes in each of the items classified as having a “High” severity and defined our scenarios using data from agencies such as the IPCC, IEA, and the Ministry of the Environment, together with the evidence provided in various reports. Specifically, we held an executive input session to consider global outlooks for 2050 given temperature rises of 1.5°C and 4°C, and then went on to consider the global outlook for each of the target industries, using tools such as Five Forces analysis. (See below for the 1.5°C global outlook.)

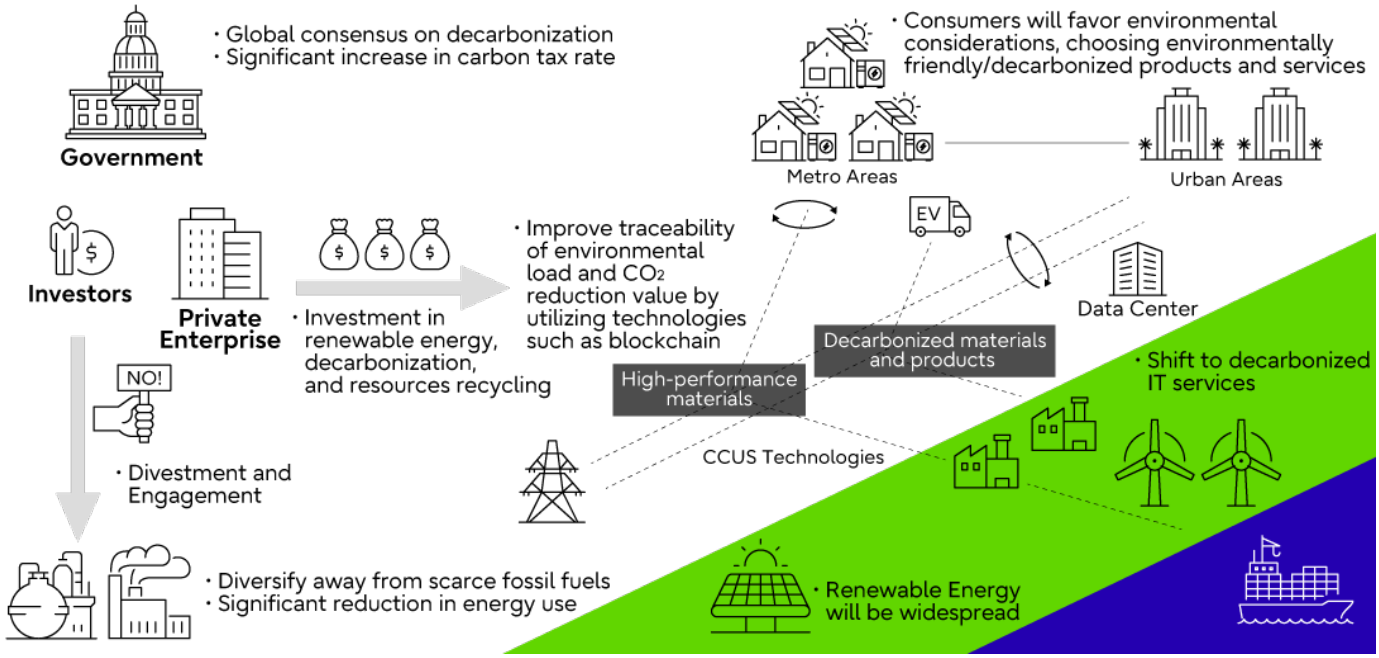


Fig. 1.5°C global outlook "A carbon-neutral world in 2050"

To look at the impacts on business, we then tentatively calculated the qualitative gap between the scenarios and our existing strategies and plans with respect to risks and opportunities. For Hybrid IT (sector studied: datacenter-related businesses), we discussed how the impacts of climate change on business would affect our Profit and Loss Statement, specifically looking at which financial indicators would be impacted and in what ways. We then summarized those impacts by developing calculation logic for each impact. Both internal and external data and information were used to confirm the positive (opportunities) and negative (risks) impacts on operating profit in 2050. For example, the calculations for the 1.5°C scenario showed rising costs due to changes in power prices, but also revealed that there will be increased demand for carbon-neutral datacenters and for datacenters generally due to increased communications traffic as the uptake of smart devices accelerates. Overall, the calculations showed that the negative financial impacts of risks will be outweighed by the positive financial benefits arising from opportunities, ultimately leading to a net positive financial impact on operating profits.

Our analysis of Sustainable Manufacturing (sectors studied: petrochemicals, automotive, foods, electronic device-related businesses) and Trusted Society (sectors studied: public sector, transportation, energy-related businesses) focused on the business opportunities arising from climate change, assuming the potential to establish new climate change-related markets and concluding that the net impact on sales in 2050 would be positive.

Finally, we held a workshop in which we organized the trends in each industry that had been identified when defining the scenarios and the direction of measures to deal with the business impacts requiring emphasis. In specific terms, during the group work we reviewed the current initiatives and gathered views on the directions that future initiatives should take, taking into account the expectations on Fujitsu in the medium- and long-term.

Analysis results

Because we were able to confirm that the study and development directions for our business unit offerings are aligned with the opportunities shown in the scenario analyses, and that countermeasures for the identified risks are also being prepared, our assessment was that Fujitsu's businesses are strategically resilient from a medium- and long-term perspective.

Using the scenario analysis results as one input for business consideration, we also announced the value proposition themes for our Key Focus Areas such as Carbon Neutrality (promoting the visualization and reduction of CO_2 emissions), Resilient Supply Chain (resilient response to uncertainty) in the Sustainable Manufacturing area, and Sustainable Energy & Environment (carbon neutrality through green energy) in the

Trusted Society area. We are now progressing with discussions on the details of our offerings, considering the opportunity-related measures revealed by the scenario analyses.

<Opportunity Analysis>

* Main Risk and Opportunity Items　Policy / regulation, markets, technology, reputation　Natural disasters

Target businesses	Sectors studied	Risk severity assessment (both 1.5°C and 4°C)		Scenario definitions	Countermeasure considerations (in part)
		Policy/regulation, markets, technology, reputation	Natural disasters		
Sustainable Manufacturing	Petrochemical businesses	Proliferation of ICT in recycling-based business platform in the shift to carbon-neutrality Carbon pricing Emissions targets Energy-saving measures Key product / Service price variations	Increased damage to factories/supply chains due to heightened risk of natural disasters Flooding / Changing weather patterns More severe abnormal weather events	**1.5°C scenario** Switch to environmentally friendly products that use carbon-neutral materials throughout the supply chain, increasing portfolio reform, increased demand for greater traceability and more efficient R&D	• Visualization of CO_2 emissions throughout the supply chain, support for strategies and policies aimed at carbon-neutrality • Eco-friendly materials development solutions that use materials informatics • Management visualization with an ESG pivot, formulation and implementation of SX measures through data-driven management
				4°C scenario Increased demand for resilient factories and supply chains due to increasingly severe natural disasters	• Support for risk event simulation and timely provision of risk information • Rapid solutions through data-driven management (review of manufacturing systems, suppliers, SCM, etc.)
	Automotive businesses	Stronger regulation of internal combustion engines; widespread adoption of electric vehicles, move toward carbon-neutrality in the entire product life cycle Carbon pricing Emissions targets Key product / Service price variations Proliferation of next-generation technology Changes in investor sentiment	Increased damage to factories/supply chains due to heightened risk of natural disasters Flooding / Changing weather patterns	**1.5°C scenario** Increased demand for services such as MaaS and greater supply chain traceability to help reduce environmental impacts through the entire life cycle	• Visualization of CO_2 emissions throughout the supply chain, support for strategies and policies aimed at carbon-neutrality • Support for EV demand (e.g., circular management of EV batteries) • Management visualization with an ESG pivot, formulation and implementation of SX measures through data-driven management • Process automation services using digital technology, from design through to manufacturing and maintenance
				4°C scenario Faster rollout of internal combustion engines, increased demand for advanced technology. Also, increased demand for enhanced business continuity and stability in raw materials procurement in the face of more severe natural disasters	• Support for risk event simulation and timely provision of risk information • Rapid solutions through data-driven management (review of manufacturing systems, suppliers, SCM, etc.) • Engineering outsourcing service which contributes to acceleration of development processes/technology and selection of management resources

	Food-related businesses	Increased awareness of ethical consumption, promotion of resource recycling and biodiversity, etc. Key product / Service price variations Proliferation of next-generation technology	Increased damage to agriculture due to heightened risk from natural disasters and temperature rises Higher average temperatures More severe abnormal weather events	**1.5°C scenario**	
				Changed consumer awareness leading to increased demand for measures to deal with food waste and support smart agriculture, certificates of origin, and environmentally friendly packaging materials	• Visualization of CO_2 emissions throughout the supply chain, support for strategies and policies aimed at carbon-neutrality • Support for greater traceability throughout the value chain (supply-demand optimization, help with changes in consumer behavior) • Management visualization with an ESG pivot, formulation and implementation of SX measures through data-driven management
				4°C scenario	
				Increased demand for "resilient agriculture" to cope with issues of stable food supply resulting from natural disasters	• Support for risk event simulation and timely provision of risk information • Rapid solutions through data-driven management (review of manufacturing systems, suppliers, SCM, etc.)
	Electronic device-related businesses	Energy savings in factories and growth in the market for products for EVs; potential for fundamental manufacturing reforms, such as 3D printers and the "buy local" movement Carbon pricing Emissions targets Key product / Service price variations Proliferation of next-generation technology Changes in investor sentiment	Increased damage to factories/supply chains due to heightened risk of natural disasters, water shortages Flooding / Changing weather patterns	**1.5°C scenario**	
				Proliferation of energy/labor-saving technologies. Increased demand from radical changes to business models (demand chains, etc.)	• Visualization of CO_2 emissions throughout the supply chain, support for strategies and policies aimed at carbon-neutrality • Process automation services using digital technology, from design through to manufacturing and maintenance • Management visualization with an ESG pivot, formulation and implementation of SX measures through data-driven management
				4°C scenario	
				Increased demand for higher labor productivity in production sites and the construction of factories and supply chains capable of handling the risks posed by natural disasters	• Process automation services using digital technology, from design through to manufacturing and maintenance • Support for risk event simulation and timely provision of risk information • Rapid solutions through data-driven management (review of manufacturing systems, suppliers, SCM, etc.)
Trusted Society	Public sector, transportation, energy-related businesses	The values by which we select cities and services, such as environmental concerns, will changes as we shift to carbon neutrality Carbon pricing Emissions targets Key product / Service price variations	Increased damage to cities, buildings, and infrastructure due to heightened risk from natural disasters Flooding / Changing weather patterns More severe abnormal weather events	**1.5°C scenario**	
				Increased demand for quantifying and visualizing new values, such as environmental concerns, and the digitalization of urban and energy infrastructure	• Services/solutions related to prediction and regulation of the energy supply-demand balance using real-time data as green energy is used to transition to a carbon neutral society
				4°C scenario	
				Increased demand for resilient urban infrastructure	• Construction of Digital Twin platforms, enhanced use of simulations, optimization of urban infrastructure that caters for population flows and individuals, support for resilience in transport and logistics, disaster prevention/minimization, etc.

<Risk & Opportunity Analysis>

Target businesses	Sectors studied	Risk severity assessment (both 1.5°C and 4°C)		Scenario definitions	Countermeasure considerations (in part)
		Policy/regulation, markets, technology, reputation	Natural disasters		
Hybrid IT	Datacenter-related businesses	Traceability of environmental values, datacenter electrification, and the adoption of smart technology will all progress Emissions targets Key product / Service price variations Proliferation of next-generation technology Changes in investor sentiment	Increased damage to datacenters due to heightened risk from natural disasters Higher average temperatures More severe abnormal weather events	**1.5°C scenario**	
				Energy savings and environmental concerns become the standard for service selection by customers, and carbon neutrality in datacenters themselves becomes a source of competitive strength	• Highly energy-efficient datacenters, etc.
				4°C scenario	
				Increased demand for resilient datacenters. Disaster risk for Fujitsu-owned datacenters is also increasing and countermeasures are needed	• Disaster recovery center services in case disasters occur • Resilient earthquake-proof datacenters equipped with every security measure, etc.

* The above scenario analyses are intended to verify the strategic resilience of Fujitsu businesses based on an assumed hypothesis and are positioned as one simulation that takes into account future uncertainties.

Risk Management

As part of our company-wide risk management system, we have established the Risk Management and Compliance Committee to identify, assess and manage risks across the entire Fujitsu Group, including those related to climate change. To conduct company-wide risk assessments on a regular basis, the committee prepares tools, distributes them to each employee responsible for risk management and compliance, and gathers responses. The departments in charge of each risk across the company utilize these tools to conduct assessments on items such as the impact and likelihood of occurrence related to risk threats and the status of countermeasures, and they also provide responses regarding those risk threats. Climate change-related risk assessments are conducted by all relevant departments, using information collected from across the company, based on the expertise of each department in areas such as policy, reputation, natural disasters, the supply chain, and products and services. The Risk Management and Compliance Committee conducts an integrated matrix analysis of the assessments returned by each department with respect to impact severity and likelihood, and then identifies high-priority risks at the company-wide level. The results of this analysis are reported to the Board of Directors.

The Sustainable Management Committee shares the business risks, opportunities, and countermeasures resulting from climate change, and manages their progress. The Fujitsu Group has also established environmental management systems based on the ISO 14001 standard. Under these systems, we monitor regulatory compliance and other risks.

Metrics and Targets

In April 2021, the Fujitsu Group adopted a GHG emissions reduction target consistent with 1.5°C of global warming and committed to reducing its emissions by 71.4% (on 2013 levels) by 2030. To reach that target, we have set GHG emissions reduction targets and are managing our GHG emissions and our rate of renewable energy adoption as indicators.

In FY2021, we emitted 489 ktons-CO_2 against our annual GHG emissions target of 517 ktons-CO_2, achieving a reduction of 28 ktons-CO_2, which exceeded our reductions target. We also increased our use of renewable energy by as much as 20%, against our annual target of 13%. Specific initiatives include a Power Purchase Agreement signed in April 2022 by Fujitsu Australia Limited (FAL) to procure renewable energy for the next 10 years from the Sapphire Wind Farm(*4), operated by CWP Renewables. As of June 2022, around 40% of the power supplied to FAL datacenters was renewable energy. This equates to roughly 30% of the annual power use by the entire FAL organization. This measure alone has enabled FAL to offset around 30 ktons-CO_2 of its annual greenhouse gas emissions.

(*4) Sapphire Wind Farm: Largest wind-operated power station in NSW, run by CWP Renewables.

Environmental Action Plan

Fujitsu Group Environmental Action Plan

Operating Environment and Growth Strategy

Changing Environmental Activities in Line with Our Business Model Transformation

Originally a manufacturer of telecommunications equipment, Fujitsu developed into a global ICT enterprise with vertically integrated operations in three sectors: Technology Solutions offers a range of IT-based services and solutions, Ubiquitous Solutions designs and manufactures products such as PCs and mobile phones, and Device Solutions is responsible for developing the semiconductor business. Structural reforms undertaken since FY 2015 have channeled most management resources into the core sector of Technology Solutions. In FY 2019, Fujitsu repositioned itself as a Digital Transformation (DX) enterprise that aims to make full use of digital technologies in the creation of innovative services and business processes.

The nature of the Fujitsu Group's environmental impact has changed as a result of this modified business model. As an example, most energy consumption in the past was linked to the manufacture of PCs and our semiconductor and electronic component operations, but that requirement is declining significantly. Conversely, the expansion of cloud computing and the Internet of Things (IoT) is driving increased power consumption in data centers, and this growing trend is expected to continue. We are therefore focusing at present on energy conservation, efficiency enhancements and the use of renewable energy in our data centers. In this way, the Fujitsu Group is implementing environmental activities that respond to the demands of society while also supporting the corporate growth strategy.

Operating as a Responsible Global Corporate Citizen

Recent years have seen a further ramping up of demand for initiatives aimed at building sustainable communities on a global scale, including the adoption of the Sustainable Development Goals (SDGs) by the United Nations and the coming into effect of the COP 21 Paris Agreement. The Fujitsu Group employed a materiality analysis in a Groupwide review designed to enhance the effectiveness of activities that aim to contribute to sustainable development. This analysis identified seven priority issues including the environment; human rights, diversity and inclusion; wellbeing; and supply chain. The result is a unified framework under the banner of Global Responsible Business (GRB), which will oversee activities that strengthen initiatives in non-financial areas while striving for 'sustainability management' worthy of a responsible global corporate citizen.

History of the Environmental Action Plan

Environmental Awareness Contributes to Sustainability for Our Customers and Society

The Fujitsu Group has formulated an Environmental Action Plan since 1993 and continues to broaden the scope of its environmental activities. Between stages I and V (FY 1993-2009) the objective was to significantly reduce the environmental impact of the Fujitsu Group itself. Far-reaching measures were implemented throughout our factories and offices to cut CO_2 emissions and chemical pollutants, to reduce waste, and so on. In stage VI (FY 2010-2012), we expanded the focus of our activities to three important initiatives. In addition to strengthening measures to lessen our own impact on the environment, we supported similar efforts by customers and society as a whole and also took on the challenge of conserving biodiversity. During stages VII and VIII (FY 2013-2018), we clearly demonstrated our intention of using technology to contribute to the

resolution of environmental challenges for our customers and society. To further reduce our own environmental footprint, we extended activities to include key partners and the whole supply chain. In stage IX (FY 2019-2020), we broadened the operational efficiency of air conditioning equipment controlled by artificial intelligence (AI) in our data centers with the intake of external air. We also purchased certificates for green power and renewable energy, in line with regional characteristics and economic rationality, and boosted the use of renewable energy at our business sites. Furthermore, we utilized blockchain and other leading-edge ICT technologies unique to the Fujitsu Group to promote and expand the use of renewable energy.

The Fujitsu Group will continue responding to the demands of changing times and will deepen and further develop its environmental activities with the goal of helping to create a sustainable and rewarding society.

Fujitsu Group Environmental Action Plan (Stage X)

Strengthening Our Response to Global Societal Challenges

The Global Risks Report 2021 (*1) ranks as major risks, by likelihood of occurrence and by impact, climate-related matters including climate change, resource circulation and biodiversity loss. Regarding climate change, the IPCC's special report Global Warming of 1.5°C (*2) recommends a more rapid transition to a decarbonized society. The global initiative Science Based Targets set a goal for reductions in greenhouse gas (GHG) emissions to limit global warming to 1.5°C and called on companies to set their own ambitious targets.

In terms of resource circulation, the issue of waste plastics is a global concern and the use of plastics is being questioned in Japan and elsewhere. As for biodiversity, when considering a post-2020 biodiversity target, we are discussing ways of reducing negative impacts on biodiversity throughout our supply chain.

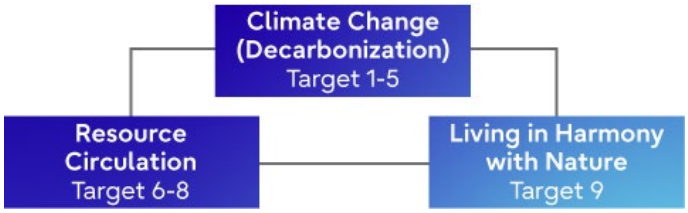
Given this background, the Fujitsu Group has specified targets that address the three global societal challenges of climate change, resource circulation and living in harmony with nature (conservation of biodiversity). As we undertake workstyle reforms and restructure our business operations, we will focus on these targets over the two-year period from FY 2021 to FY 2022 by working to minimize negative environmental impacts in the supply chain.

(*1) An annual report issued by the World Economic Forum that lists, by likelihood and by impact, the major risks facing the world.

(*2) A special report issued by the Intergovernmental Panel on Climate Change (IPCC). This report was submitted to the 48th Session of the IPCC in October 2018.

Key Topics

As we enter the era of a 'new normal', we have set targets in line with the societal challenges of climate change, resource circulation and coexisting with nature.



- Climate Change: Strengthening our commitment to meet the target of limiting global warming to 1.5°C
- Resource Circulation: Maintaining and enhancing efforts in the areas of resource-saving product design (with an emphasis on reducing the use of plastics) and water risk assessments throughout the supply chain
- Living in Harmony with Nature: Based on global trends, a new target to visualize impacts on biodiversity

Target Period

The two-year period from FY 2021 to FY 2022

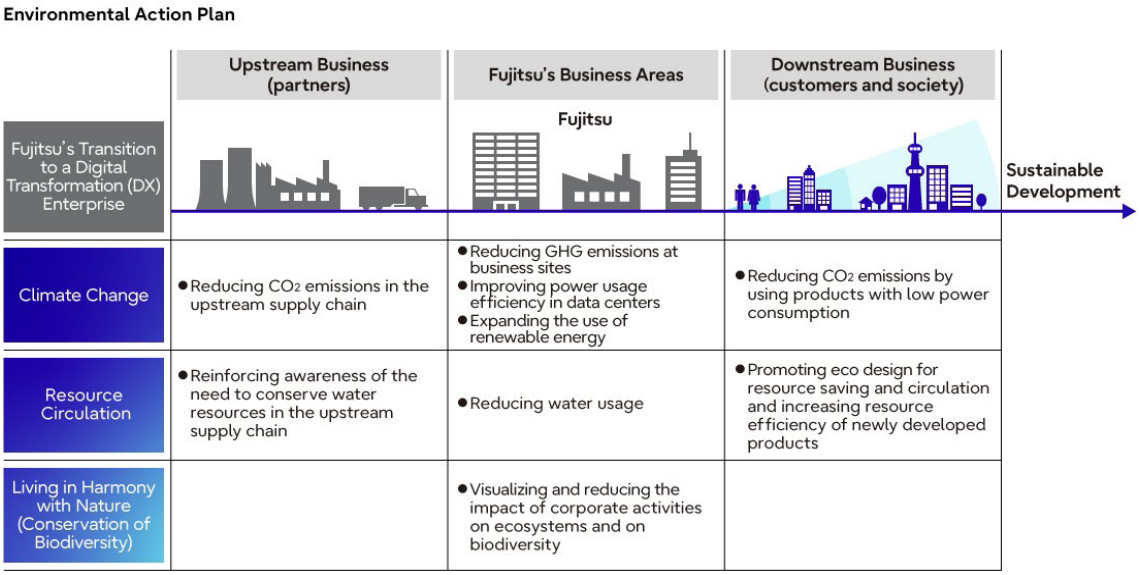


Image of Environmental Action Plan Stage X

Targets (to be achieved by FY2022)	FY2021 Achievements (FY2021 Target)
Climate Change	
1. Reduce greenhouse gas (GHG) emissions from business sites each year by 4.2% or more, compared with the base year of FY2013	11.7% reduction (37.2% reduction from the base year)
2. Improve PUE (*3) (Power Usage Effectiveness) of our data centers by 3%, compared with FY2017	1.56 (FY2021 target : 1.57)
3. Increase renewable energy usage to 16% of total electricity	20% (FY2021 target : 13%)
4. Reduce CO_2 emissions due to power consumption during product usage by 17% or more, compared with FY2013	37% reduction (FY2021 target : 16% reduction)
5. Drive activities to reduce CO_2 emissions in the upstream supply chain.	Requests to key partners to undertake reduction activities 100% completed
Resource Circulation	
6. Promote eco design for resource saving and circulation and increase resource efficiency of newly developed products by 10% or more, compared with FY2019	10.1% improvement (FY2021 target : 5% improvement)
7. Reduce water usage by 30,000 kiloliters or more by implementing water resource conservation measures	56,671 kiloliters reduction (FY2021 target : 19,000 kiloliters reduction or more)

	8. Reinforce awareness of the need to conserve water resources in the upstream supply chain	Requests to key partners to undertake conservation activities 100% completed
Living in Harmony with Nature (Conservation of Biodiversity)		
	9. Visualize and reduce the impact of corporate activities on ecosystems and on biodiversity	Based on global-level discussions, the evaluation indicator of 'Ecological Footprint' was selected, and activities have commenced to establish the evaluation methodology.

(*3) PUE (Power Usage Effectiveness): An indicator of the efficiency of electric power usage by the data center. This value is calculated by dividing the data center's total electric power consumption by the electric power consumption of servers and other ICT devices. The closer the value is to 1.0, the higher is the efficiency.

Environmental Action Plan

Climate Change

External Trends

Accelerated Controls on GHG Emissions are Required for Carbon Neutrality

The Paris Agreement, adopted in December 2015, set out a long-term, shared worldwide goal of limiting the average global temperature increase to considerably less than 2°C and preferably 1.5°C over pre-Industrial Revolution temperatures, as well as the goal of carbon neutrality (net zero emissions) by the second half of this century. Correspondingly, moves aimed at achieving a carbon neutral society have been accelerating on a global scale.

The Task Force on Climate-related Financial Disclosures (TCFD) was established in December 2015 by the Financial Stability Board, which includes participants representing central banks, financial regulatory authorities and finance ministries from major countries. The TCFD requests companies to use multiple climate scenarios to evaluate the climate-related risks and opportunities to their business and to assess and disclose the financial impact. Various international initiatives have also been launched, such as Science Based Targets (SBT), which calls for corporate emissions reduction goals designed to meet the 1.5°C target, and RE100, which calls for companies to source 100% of the electricity they use from renewable energy. Furthermore, CDP (*1), which runs the global disclosure system for investment that takes into account Environmental, Social and Governance (ESG) factors, requests that companies reduce GHG emissions by at least 2.1% year-on-year through voluntary efforts.

(*1) CDP: An international not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage, and share vital environmental information. CDP works with major institutional investors around the world to encourage companies to disclose their impact on the environment and natural resources and to adopt measures that mitigate the impact.

Fujitsu's Position

GHG Emissions Reductions are a Critical Issue for the Fujitsu Group

The Fujitsu Group, as an entity with global operations, is fully aware that climate change is a serious worldwide issue that spans national and regional boundaries. For example, disasters triggered by climate change can disrupt procurement, logistics and energy supply networks, which in turn interrupts the process of supplying materials and energy to business sites. Regulations governing GHG emissions have an impact on the development and production of products and services, and any delays in responding to requirements can lead to lost business opportunities.

Since launching the Fujitsu Group Environmental Action Plan, we have treated the reduction of GHG emissions as a critical issue and worked to achieve the defined targets.

Most of the GHG emissions generated by the Fujitsu Group derive from purchased electricity, not from the combustion of oil or gas. Advances in 5G technology will lead to the expansion of cloud computing, IoT and mobile communications, thereby spurring increased power consumption in data centers, and this growing trend is expected to continue. We are therefore focusing on reducing power consumption by conducting energy conservation audits and regular power usage checks in our data centers, as well as in our factories and production lines in Japan and elsewhere.

Approach under the Fujitsu Group Environmental Action Plan (Stage X)

Focusing on Expanding the Use of Renewable Energy

In May 2017, the Fujitsu Group formulated the FUJITSU Climate and Energy Vision, its medium- to long-term environmental vision. In August of the same year, the company obtained SBT certification for 2°C-aligned GHG emissions reduction targets. The SBT initiative aims to significantly reduce greenhouse gases over the medium to long term by encouraging companies to set voluntary GHG emissions reduction targets based on scientific knowledge compiled by organizations such as the IPCC (*2). Given the accelerating global trend toward carbon Neutrality, the Fujitsu Group reviewed its position and revised its target to reduce GHG emissions from business sites in FY2030 from 33% to 71.4% below FY2013 levels. On April 15, 2021, this revised figure was successfully validated as a 1.5°C-aligned target by SBT. In April 2021, we revised its reduction targets in fiscal 2030 from 33% to 71.4% below fiscal 2013 levels and were validated as 1.5 °C-aligned targets by the SBT initiatives. In June 2022, we submitted a commitment letter to the SBT Initiative towards the Net-zero targets and received it.

In the Fujitsu Group Environmental Action Plan (Stage X), we are undertaking activities to “reduce GHG emissions at our business sites by at least 4.2% year-on-year”, in accordance with the 1.5°C SBT target.

The use of renewable energy is an important element in achieving carbon neutrality, and Fujitsu joined the global initiative RE100 in 2018. At Fujitsu Group locations in Japan and elsewhere, we are aiming to source 40% of the electricity used from renewable energy by 2030, with a goal of 100% by 2050. In the Fujitsu Group Environmental Action Plan (Stage X), we have set a target of “expanding to 16% the renewable energy usage ratio in terms of power generation”. From April 1, 2021, the largest facility in the Fujitsu Group, the Kawasaki Factory, switched over to 100% renewable energy for power consumed. This initiative accounts for approximately 5% of the electricity used by the Fujitsu Group in Japan. Furthermore, from October 1, 2021, we transitioned to fully renewable sources for the power consumed on the floors leased by Fujitsu at its headquarters in the Shiodome City Center building in Tokyo. This marks the first such attempt for the Fujitsu Group within a leased office facility in Japan.

In addition, Fujitsu intends to continue boosting purchases of green energy and renewable energy certificates, after considering relevant regional characteristics and the economic feasibility, and to implement more on-site renewable energy capacity. Use of the Fujitsu Group’s leading-edge technological expertise in areas such as blockchain technology will also contribute to the spread and expansion of renewable energy.

(*2) In 2017, Fujitsu obtained SBT certification for 2°C-aligned emissions reduction targets. In April 2021, these targets were revised for business sites in FY2030 from 33% to 71.4% below FY2013 levels, and these were successfully validated as 1.5°C-aligned targets by SBT.
https://www.fujitsu.com/global/about/resources/news/press-releases/2021/0416-01.html

RELATED LINKS

Actions and targets related to climate change initiatives under the Fujitsu Group Environmental Action Plan (Stage X)

- Reducing Greenhouse Gas (GHG) Emissions at Our Business Sites
- Improve Power Usage Effectiveness (PUE) at Our Data Centers
- Expand the Use of Renewable Energy

Environmental Action Plan

Reducing Greenhouse Gas (GHG) Emissions at Our Business Sites

Our Approach

The Fujitsu Group considers the prevention of global warming an important issue. We have, therefore, formulated our medium- to long-term environmental vision, the FUJITSU Climate and Energy Vision, and aim to eliminate all CO_2 emissions from our business activities by 2050.

Among GHGs, our business sites (plants and offices, as well as datacenters) primarily emit CO_2 when energy (electricity, fuel oil, gas) is used, and perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3) during the semiconductor manufacturing processes. We will set reduction targets in addition to complying with the relevant laws, and we are striving to reduce and control the volume of use and emission of these gases.

Reducing CO_2 Emitted During Energy Consumption

About 99% of the Fujitsu Group's total GHG emissions arise from CO_2 emissions due to energy consumption. Therefore, we continuously promote the following energy-saving measures to reduce CO_2 emissions.

- Appropriate operation of equipment, improvement in management, and energy-saving measures focused on motive-power facilities (introduction of free cooling, inverters and energy saving equipment, fuel conversion, etc.)
- Increasing efficiency by reviewing the manufacturing process (innovations in production, development of green production technology)
- Maintaining appropriate room temperature for office air conditioning, saving electricity used in lighting and office automation equipment
- Measuring energy consumption for visualization and promoting use of the data so collected

Reducing Emission of GHGs Other Than CO_2

As for GHGs other than CO_2, the Fujitsu Group mainly uses perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3) at the semiconductor divisions. We are taking continuous steps to switch to gases with lower global warming potential (GWP) and install equipment to remove harmful gases in our new and existing production lines.

FY 2021 Performance

Targets under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Reduce GHG emissions of our business sites by 4.2% or more every year (compared to FY 2013) (*1)	Reduction by 11.7% (*2)

(*1) Target organizations: Business sites owned by Fujitsu and the Fujitsu Group. Includes major data centers.
(*2) Reduction rate based on market standards

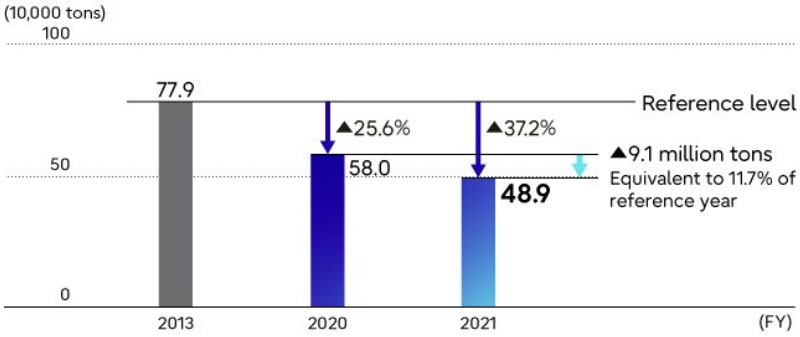
Promoting Reduction in CO_2 Emitted During Energy Consumption

We continue to invest in energy-saving equipment (introduction and upgrade of BAT (*3) equipment, mainly for air conditioning and lighting) and ensure their appropriate operation at the facilities at all business sites. We are also streamlining our production processes, saving electricity used for air conditioning, lighting and automation in offices, making energy consumption visible, and leveraging measurement data.

For instance, regarding our investment in air conditioners for server room expansions at the Yokohama System Center, by adopting equipment that is highly efficient, we contributed to reducing emissions by 1,548 tons-CO_2 in comparison to conventional air conditioners. We also improved facility operations at the Tatebayashi System Center (1,201 tons-CO_2) by controlling the number of air conditioners, reviewing their operating conditions, suspending operation of pumps and air conditioning devices, and taking other measures. Through our own efforts, we carried out measures to reduce our emissions by roughly 7,000 tons-CO_2 (1.1% in comparison to last fiscal year).

As a result of these initiatives, we reduced our GHG emissions according to market standards in keeping with SBT, which is an objective in the Environmental Action Plan (Stage X), by11.7% in comparison to our emissions in FY 2013.

Environmental Action Plan (Stage X) GHG Emissions Reductions



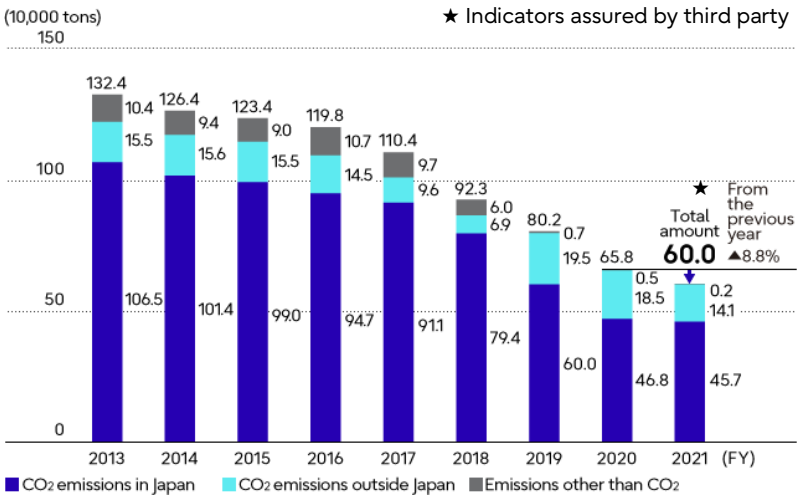
(*3) BAT (Best Available Technologies): Usable state-of-the-art technologies to reduce GHGs.
(*4) Environmental Action Plan (Stage X) performance values for the reference year (FY 2013) and FY 2021 are the total values for business sites targeted by the Environmental Action Plan (Stage X).
(*5) CO_2 conversion factors of purchased electricity are market standards in keeping for both the reference year (FY 2013) and FY 2021 performance values.

Total Emissions of 600 ktons-CO_2 ★in FY 2021

Our total GHG emissions in FY 2021 were 600 ktons-CO_2 (output level per sales amount: 16.7 tons-CO_2/100 million yen). They increased overseas due to boundary changes (additions of DC with management authority), but decreased by 8.8% in comparison to FY 2020 for reasons such as the business transfer of our semiconductor division.

For details, please refer to pages 22-23 of the Fujitsu Group Integrated Report 2020 – Special Feature: “Progress Toward Becoming a DX Company”, Management Indicators and Global Responsible Business (GRB).

Trends in Total Greenhouse Gas Emissions



(*6) CO_2 emissions in Japan and overseas: The CO_2 conversion factor for purchased electric power in performance reports has been calculated with a fixed value of:
- In Japan - 0.570 tons-CO_2/MWh from FY 2013 to FY 2015, 0.534 tons-CO_2/MWh for FY 2016, 0.518 tons-CO_2/MWh for FY 2017, 0.497 tons-CO_2/MWh for FY 2018, 0.461 tons-CO_2/MWh for 2019, 0.444 tons-CO_2/MWh for FY 2020, and 0.441 tons-CO_2/MWh for FY 2021
- Overseas – Same coefficients as those used in Japan from FY 2013 to FY 2018, and the latest IEA values (by country) for the relevant FY from FY 2019 onwards

(*7) Emissions other than CO_2: These are converted to equivalent amounts of CO_2 using the global warming potential (GWP) for each gas.

› Case Studies

Environmental Action Plan

Improve Power Usage Effectiveness (PUE) at Our Data Centers

Our Approach

Energy consumption in data centers is on the rise, due to factors such as the spread of cloud computing, and society is paying greater attention to the environmental performance of data centers.

Data centers account for approximately 40% of the CO_2 emissions (FY 2021) for each business in the Fujitsu Group. Since data center CO_2 emissions are expected to continue increasing along with the expansion of digitalization, the Fujitsu Group has a social responsibility to promote environmentally friendly data centers. At the same time, in terms of enhancing our business infrastructure, it has also become an important topic that we should work on from a long-term perspective.

FY 2021 Performance

Targets under the Fujitsu Group Environmental Action Plan (Stage X)	Middle fiscal year (FY 2021 result)
Improve PUE (*1) at data centers by 3% or more. (Compared to FY 2017)	PUE 1.56 - Improvement of 1.6%

(*1) PUE (Power Usage Effectiveness):
An index for power usage effectiveness at data centers. Expresses overall power consumption at data centers as a value divided by the power consumption of servers and other ICT devices. The closer the number is to 1.0, the greater the efficiency.

Promoting Activities to Achieve Our Goals

We are moving forward with activities to improve PUE at data centers in Japan and around the world, based on the Fujitsu Group Environmental Action Plan. Due to the continued impact of the spread of COVID-19 in FY 2021, some of our activities were restricted by lockdowns in certain cities where our overseas data centers are located. However, overall, we carried out updates to air conditioning equipment and implemented extensive energy saving, and we were able to achieve our goals for FY 2021. We are attempting to reduce air conditioning power usage through expanded operational measures such as extending the operation time for air conditioning using outside air and free cooling in the middle of the plan, and striking a proper balance between the amount of heat generated by IT equipment and cooling capacity.

Continuing from the previous year, we also conduct functional evaluation and performance maintenance to determine whether the air conditioning equipment is performing at its proper capability. In parallel with our energy-saving activities, we are also working to expand the use of renewable energy to achieve carbon neutrality. (We are currently operating toward 100% renewable energy for cloud services in domestic data centers in 2022.)

PUE values and calculation methods

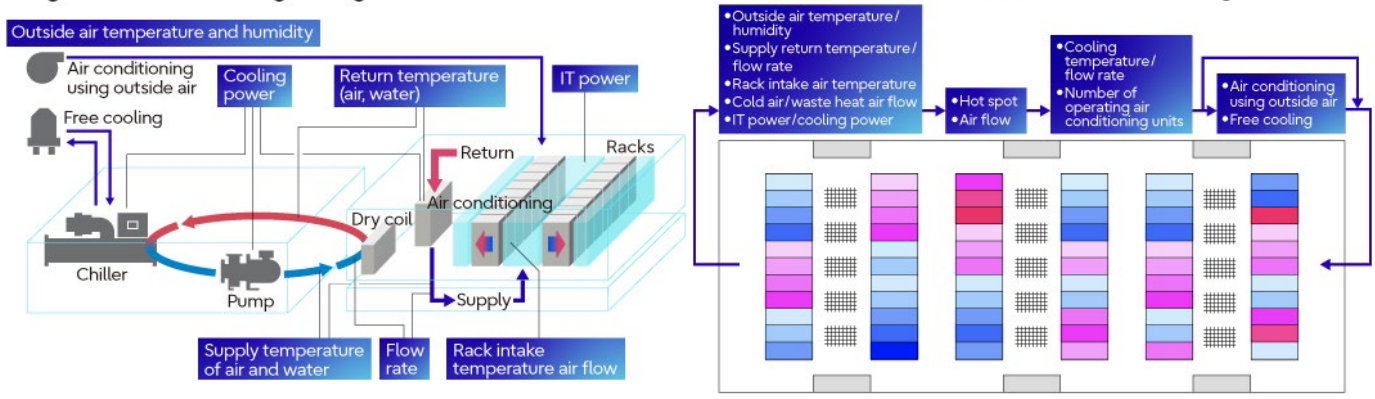
PUE Value	PUE calculation method, other
Range: 1.33 to 2.14 No. of data centers: 23	• Apply the Green Grid • Work to implement improvements using DCMM • DCMM: Data Center Maturity Model

Examples of Initiatives in FY 2021

Reducing Air Conditioning Power With a Focus on Improved Operation

Due to the impact of the spread of COVID-19, improvement activities could not be started as planned at some data centers. However, we are implementing overall air conditioning tuning according to IT power consumption (heat generation). We expanded the target floors through measures such as lessening the air conditioning temperature and cold water temperature, and adjusting the number of cooling equipment in operation. Furthermore, at data centers with air conditioning using outside air or free cooling, the outside air temperature was relatively low compared to the previous fiscal year, so we started operating them early in the middle of the plan in an effort to reduce power consumption for air conditioning. We are also expanding the target floors for AI control of air conditioning, which started operation at one domestic data center from FY 2019, and reduced the overall energy used for air conditioning by 15% to 20%. We plan to continue the rollout to include other data centers.

Image of Air Conditioning Tuning



Promoting Improvements through Better Information Sharing with Overseas Data Centers

In an effort to coordinate our PUE improvement activities with overseas data centers and further enhance our activities, we conduct regular meetings remotely in order to share and communicate information such as the progress of improvement and know-how on improvement measures gained at each data center. We are planning to share related information on internal portal sites and to use the sophistication of data to visualize the progress status and improvement points. These measures will enable improvement activities to progress more smoothly in the future.

› Case studies

Environmental Action Plan

Expand the Use of Renewable Energy

Our Approach

The popularization and widespread use of renewable energy is becoming increasingly necessary as a way of addressing global warming, securing stable energy supplies through the diversification of our energy sources, and as an energy-based foundation for economic growth.

The Fujitsu Group has established an environmental vision aimed at realizing a decarbonized society. The main pillars for this vision are a dedication to energy conservation, and the active implementation of renewable energy. To achieve this vision, we have set quantitative targets under the Environmental Action Plan, and are actively promoting the introduction and installation of solar power generation equipment at our business sites, as well as the purchase, use, and expansion of green power (electric power generated through 100% renewable energy).

FY 2021 Performance

★ Indicators assured by third party

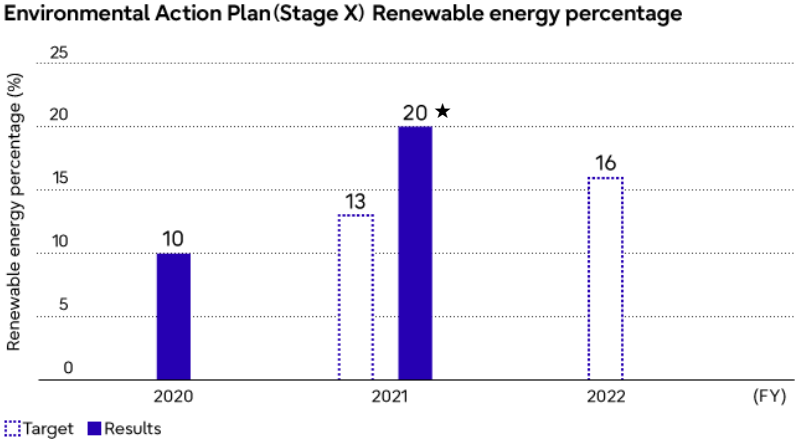
Targets under the Fujitsu Group Environmental Action Plan (Stage X)	Last fiscal year (FY2021 result)
Expand the rate of renewable energy used to 16%	20%★

(*1) Target organizations: Fujitsu and the Fujitsu Group's own offices and managed rental offices
(*2) Calculation Standard: 5 -3 -4 -5
Refer to "Environmental Performance Data Calculation Standards" for details.

Environmental Action Plan (Stage X) Initiatives

With the aim of achieving the Fujitsu Group's medium-term environmental goal of "using more than 40% renewable energy in FY 2030," we set a target under the Fujitsu Group Environmental Action Plan (Stage X) of expanding the rate of renewable energy we use to 16%. In FY 2021, through the purchase of green power and power generation through solar panels, the rate of our renewable energy use grew to 20%.
The amount of renewable energy used was 242 GWh★.

We will continue to work toward the implementation of renewable energy in both our domestic and overseas business offices, in order to further our purchase and usage of renewable energy.



Renewable Energy Procurement Principle

Mandatory Requirement

- Renewable energy that can be reported through RE 100 activities
  - Power sources are Solar, Wind-power, Geothermal, Biogas, Small-hydro etc.
  - Environmental value (renewable attribute) can be pursued and verified
  - No double counting of environmental value

  Ex.) Amortization of environmental value of renewable energy, to be executed through the system of public agency

Recommended Requirement

- The electric power, in which power consumption to be combined with environmental value
  - The electric power, in which grid power and environmental value certification to be one set (The renewable energy to be generated in the same grid)
  - Power balancing to be managed. In time of emergence, minimum gap of power consumption and environmental value to be generated (within one year etc.)
- To select the renewable energy, by which we can contribute to local society
  - For example, by selecting the renewable energy in the same area as grid consumption, we can make "Local generation for local consumption" possible.
    Or to support the power generation company which makes effort to enlarge renewable energy power
- To procure the power from relatively new sites, in order to contribute the enlargement of renewable energy (Additionality)
  - To promote new project conjuncture, then to procure the power from it, we can contribute to increase the capacity of renewable energy of whole society
- To procure from the power generation site which was developed and constructed with the agreement of local society
  - To avoid making significant impact to the environment or society in which the power generation site is located

Examples of Initiatives in FY 2021

Introduction of Green Power

At Fujitsu, in addition to switching the Kawasaki Main Office to 100% renewable energy, we procured approximately 115 GWh of renewable energy at domestic plants, business sites and other locations.

› Case Studies

Kawasaki Main Office

Environmental Action Plan

Reduction of CO_2 Emissions by Reducing Power Consumption When Using Products

Our Approach

As ICT grows more and more common, we expect there to be an increase in energy demand in proportion to the higher performance and higher-density integration of servers and other ICT products. Various countries and regions are also expanding their energy-related regulations for ICT products, and energy efficiency is taking on increasing social importance as a factor in energy label conformance and green procurement requirements.

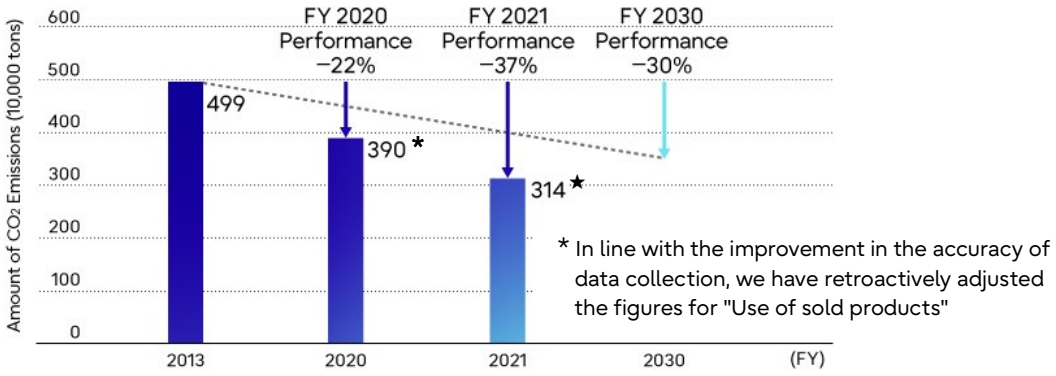
Here at the Fujitsu Group, we believe that we should work to improve the energy performance of our products during their use, in order to reduce GHG emissions. As such, we will actively implement energy-saving technologies and continue working to further improve the energy efficiency of products. Through these efforts, we will work to promote the development of products that contribute to reduced power consumption when in use.

FY 2021 Performance

Targets under the Fujitsu Group Environmental Action Plan (Stage X)	Last fiscal year (FY2021 result)
Reduce CO_2 emissions due to product power consumption by 17% or more in comparison to FY 2013.	Reduced by 37%

Change in CO_2 Emissions Due to Product Power Consumption

★ Indicators assured by third party



Fujitsu Group Environmental Action Plan (Stage X) Initiatives

Based on the Fujitsu Group's medium-term environmental goal of "reducing CO_2 emissions due to product power consumption in FY 2030 by 30% or more in comparison to FY 2013," we set a target in the Fujitsu Group Environmental Action Plan (Stage X) to reduce CO_2 emissions due to product power consumption by 17% or more in comparison to FY 2013 in FY 2022, as a transitional year. To achieve this target, each business unit goals to improve the energy efficiency of products that were expected to be developed in FY 2020 and FY 2021, then worked to meet them. Applications of energy-saving technologies include new, high-efficiency microprocessors and power supplies, energy-saving displays, optimized energy-saving controls, and the strengthening of power management features. In addition to these, we are actively pushing for the

aggregation of LSIs, reductions in the numbers of components, and the implementation of eco-friendly devices.

Attained a 37% Reduction in CO_2 Emissions in Comparison to FY 2013

In FY 2021, as a result of applying and expanding energy-saving technologies in our servers, storage, PCs, and network devices, we were able to attain a 37% reduction in CO_2 emissions in comparison to FY 2013.

Working Toward Our Targets

In order to achieve the targets set in the Fujitsu Group Environmental Action Plan (Stage X), each unit will work to further develop products with improved energy efficiency. We will also implement advanced energy-saving technologies and expand their application to our products, as part of our cross-Group policy to improve energy efficiency.

Looking toward the future, we aim to push the development of advanced eco-friendly devices, which will contribute to revolutionary improvements in energy efficiency, and aim for the products to be applied at an early stage.

› Case Studies

Environmental Action Plan

Activities to Reduce CO_2 Emissions in the Upstream Portion of the Supply Chain

Our Approach

In addition to reducing our own emissions, the Fujitsu Group has also been requesting, as part of green procurement, that its suppliers engage in activities to reduce their own CO_2 emissions in order to help contain global warming. As a result, all of our primary suppliers have undertaken efforts to reduce their CO_2 emissions.

Starting in FY 2016, we have also been expanding these efforts further upstream in the supply chain by requesting that our suppliers include their own suppliers (secondary suppliers from the perspective of the Fujitsu Group) in these activities.

We have participated in the CDP Supply Chain program since FY 2018, in parallel with the above-mentioned activities. Based on our international environmental research activities, we are taking a more in-depth look at the activities of our primary suppliers to reduce CO_2 emissions and conserve water resources, and considering the issues and our policies.

We expect that having the supply chain as a whole work toward reducing emissions can produce even greater reduction effects (synergies), while also expanding the network of these activities through the supply chain to cover an even wider area spreading beyond national boundaries. Through efforts such as these, the Fujitsu Group hopes to help create a carbon-free society for the future and a sustainable water environment.

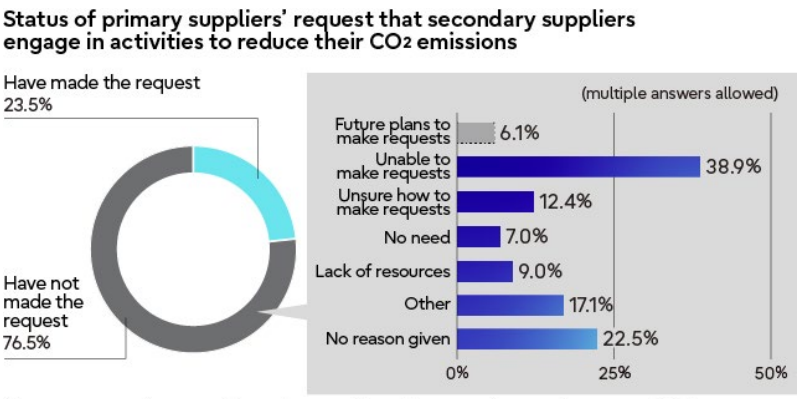
FY 2021 Performance

Targets Under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Reduction of CO_2 Emissions: Drive Activities to Reduce CO_2 Emissions in the Supply Chain	Requested that secondary suppliers (over 56,000 companies) engaged in activities to reduce emissions through primary suppliers of the Fujitsu Group (approximately 750 companies)

Reduction of CO_2 Emissions: Requesting and Supporting the Expansion of Activities to Secondary Suppliers

The Fujitsu Group has requested that its primary suppliers, who account for the top 80% of the Group's procurement, to engage in activities to reduce their CO_2 emissions, and to expand these efforts to also include their own suppliers (the Fujitsu Group's secondary suppliers). We also conducted our own environmental survey to ascertain the status of activities by these suppliers. We then provided suppliers who responded to the survey with feedback in the form of a report that analyzed survey responses as a reference for their future activities, and we also requested that they further promote these activities and expand them to include their own suppliers.

As of the end of FY 2021, 23.5% (161 suppliers) responded that they had requested their own suppliers to engage in emissions reduction activities. Over 56,000 secondary suppliers have been asked to engage in emissions reduction activities, and this should substantially impact awareness.



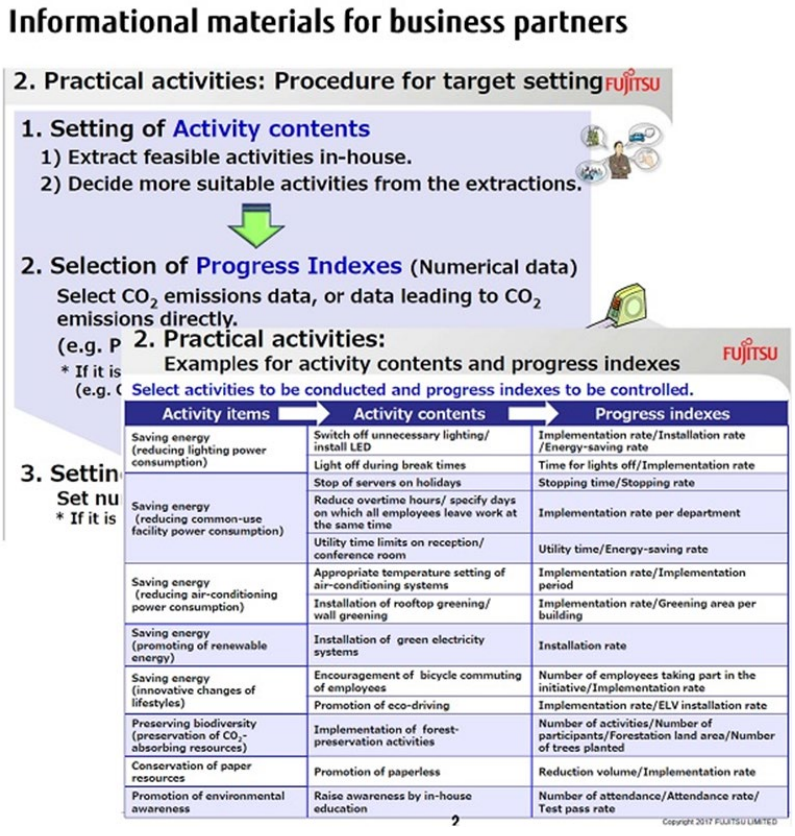
*Non-responses and responses from primary suppliers with no secondary suppliers were excluded

Offering Guidelines for Activities for Reducing CO_2 Emissions

The Fujitsu Group created original explanatory materials to facilitate the spread of activities for reducing CO_2 emissions throughout the entire supply chain, and since the end of November 2017, we have made the materials available on the company website and we have provided them to suppliers. The purpose of these materials was not only to give suppliers a greater understanding of the importance of these activities taking place in the supply chain, but also to serve as something they could use to request and assist such activities amongst their own suppliers. To fulfill our responsibilities as a global enterprise, the Fujitsu Group will continue to think about what must be done to contain global warming and will continue to take action.

"Guideline for activities for reducing CO_2 emissions" can be downloaded from the following sites.

- Japan: https://www.fujitsu.com/jp/about/procurement/material/green/index.html
- Global: https://www.fujitsu.com/global/about/procurement/green/



Environmental Action Plan

Resource Circulation

External Trends

Strengthening Global Resource Circulation

Goal 12 of the Sustainable Development Goals (SDGs), adopted by the United Nations in September 2015, is 'Responsible consumption and production'. The actions that organizations are urged to take in order to meet this goal include the efficient use of natural resources, the appropriate management of chemical substances and waste products throughout the entire product life cycle, and significant reductions in the volume of pollutants emitted into the air, water, and soil. In addition, in March 2022, the European Commission announced its Sustainable Products Initiative (SPI), which is pivotal to the new Circular Economy Action Plan formulated in March 2020. The series of sustainable product standardization packages for the EU market in this announcement consists primarily of 5 measures, and companies need to closely monitor future trends.

The Problem of Plastic Waste

According to a new report by the Organization for Economic Co-operation and Development (OECD), the volume of plastic waste generated globally is forecast to triple by 2060 from its 2019 level of 353 million tons. While the resumed fifth session of the United Nations Environment Assembly (UNEA-5.2) held in February 2022 acknowledged the usefulness of plastics, it also noted that the problem of plastic pollution is global in scale and includes the contamination of our oceans. It was decided that an intergovernmental negotiating committee would be established in the second half of 2022 with the task of formulating a legally binding global agreement to be finalized by the end of 2024. In view of these developments, companies need to implement plastic resource circulation throughout the life cycles of their products.

Fujitsu's Position

Aiming for Resource Circulation

The Fujitsu Group has a long-standing commitment to the "three R's" (reduce, reuse, recycle) relating to plastics and other resources. We are conducting ongoing discussions around resource circulation for our products, including reuse, recycling and the use of recycled materials, particularly in view of the acceleration of global action and the abovementioned announcement of Europe's new Circular Economy Action Plan in March 2020. We are continuing to promote the use of recycled plastics in our IT products, switching from plastic to cardboard packaging materials, and reducing the number of components used in our products while making them smaller, thinner, and lighter. Another focus for Fujitsu is the recycling of resources from used IT products and from waste generated at business sites. One of the targets we have been working towards in our Environmental Action Plan is the reuse of resources in used IT products, and having reached a resource reuse rate of over 90% for IT products used in business, we are now continuing our efforts by focusing on our management targets. In March 2022, we also announced proposed framework regulations for eco-design to be used in sustainable products as the first package of measures, promoting initiatives that target plastic waste in light of the urgent need to address the problem of plastic waste, as outlined above. Changes in our business model are also resulting in reduced volumes of waste as we bolster our efforts to further limit waste and recycle resources in order to make a stronger contribution to a society oriented toward resource circulation.

Responses to the Plastic Resource Circulation Act

In response to environmental changes, both in Japan and overseas, involving the waste from products that use plastic, there is increasing demand for resource circulation of plastic products. This ranges from limiting the use of plastic products through to having local and municipal governments recycle plastics for use in other products, and developing regimes that will promote voluntary plastics collection and recycling by businesses. In line with this trend, Japan promulgated the "Plastic Resource Circulation Act" in June 2021. This Act targets the plastics used in a wide range of products and promotes measures to recycle plastic resources in each stage of a product's life, from design right through to the treatment of plastic waste (3R + Renewable).

Fujitsu is designated as a "high-volume waste emitter" under the legislation, and as such, has set targets for recycling and limiting the production of plastic waste and is promoting activities in line with those targets.

Target: Promotion of zero-emissions activities for plastic waste and greater use of returnable plastics

FY2021 plastic waste volume: 1,582 tons

Related Information

- Improving the Resource Efficiency and Resource Circulation of Products and Product Recycling
- Reducing the Amount of Water Used

Improving the Resource Efficiency and Resource Circulation of Products and Product Recycling

Improving the Resource Efficiency and Resource Circulation of Products

Our Approach

As risks that threaten the sustainability of society and companies continue to rise, such as environmental destruction due to resource depletion and excessive mining, major fluctuations in resource costs around the world, and concerns about the supply of rare metals, the European Commission (EC) has established a new Circular Economy Action Plan (2.0) as a growth strategic pillar of the European Green Deal and is moving forward with measures to accelerate further implementation of resource efficiency into society. For example, the EC has proposed the Circular Electronics Initiative as a priority area, as well as maintenance for the eco design directive, and is promoting a circular economy through the entire life cycle of products. This is a growing trend all over the world. We believe that from the perspective of recycling resources, it is important for us to make efficient use of the resources in the ICT products that we provide to customers. We have engaged in a 3R design that draws on the principles of reduce, reuse, and recycle, and have developed our products with technology that is effective in reducing the amount of resources we use. We are also making efforts to improve resource efficiency and reduce our environmental burden by designing products to be lighter and smaller, using recycled plastics, reducing the number of parts, enhancing ease of disassembly, and improving recyclability. Our goal is to offer such products so that they provide even the customer with benefits, whether it be by making these products smaller, more lightweight, or designing them so they take up less space.

FY 2021 Performance

Targets Under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Promoting improved resource conservation and recycling in our products and increasing resource efficiency in new products by 10% or more (compared to FY 2019).	Improved by 10.1%

Improving the Resource Efficiency of New Products

In FY 2012, the Fujitsu Group created its own definition of resource efficiency, as the Group had previously not had a system that could comprehensively and quantitatively evaluate improvements in resource efficiency, and due to the fact that there were as of yet no public indices that could measure resource efficiency.

In FY 2020, we continued to use our indicators to evaluate products newly developed by Fujitsu, and worked to reduce product part quantities and reduce product size through smaller, thinner, and lighter parts and higher-density mountings.

We Improved Resource Efficiency by 10.1%

By reducing the size and weight of our servers, PCs, network devices, and imaging devices, in FY 2021 we were able to improve resource efficiency by 10.1% with respect to efficiency in FY 2019.

Working Toward Targets in the Fujitsu Group Environmental Action Plan (Stage X)

To achieve the targets set in the Fujitsu Group Environmental Action Plan, Fujitsu will continue current initiatives, while expanding development of new lightweight, rigid materials and the use of recycled materials. We will also widely publicize the eco-friendliness of our products in order to expand sales.

REFERENCE INFORMATION Definition and Calculation of Resource Efficiency

Resource efficiency is evaluated by dividing the value of a production, by the environmental burden (in terms of use and disposal) of the elements (resources) comprising the products.

$$\text{Resource efficiency} = \frac{\text{Product value}}{\text{Environmental burden from resource usage} + \text{Environmental burden from resource disposal}}$$

$$\text{Environmental burden from resource usage} = \Sigma(\text{Resource burden coefficient} \times \text{Resource usage volume})$$

$$\text{Environmental burden from resource disposal} = \Sigma(\text{Resource burden coefficient} \times \text{Resource disposal volume})$$

Definition of Each Item

Product value	To place emphasis on the valuation of reduction in environmental burden due to resource usage and disposal, product value is limited to those that related to resource usage and is set on a per-product basis. (Example of factor not considered: CPU performance improvements)
Resource burden coefficient	Environmental burden weighting coefficient that is specific to a particular resource and considers factors like exhaustibility, scarcity, and environmental impact from mining and disposal. Activities will begin with this figure set to a value of "1" for all resources.
Resource usage volume	Mass of each resource used in the product (excluding the mass of recycled plastic used).
Resource disposal volume	Mass od each resource disposed of (not reused) in connection with a post-use product (design value). Activities will begin with this figure set to a value of "0".

Examples of Initiatives in FY 2021

Featuring state-of-the-art optical transport technology, the 1FINITY T700 has improved resource efficiency and reduced energy consumption

The 1FINITY series are optical transport systems that support telecommunications carrier systems. Optical transport equipment transmits information and it sends data. The 1FINITY series separates the functionality of conventional optical transport equipment to enable capital investment suitable for the scale of the network, continuous network evolution, minimization of running costs, and flexible operation.

1FINITY T700

We have developed the 1FINITY T700 as part of the 1FINITY series. The 1FINITY T700 Transport Blade is capable of long-distance transport at 400 Gbps*. The 1FINITY T700 is equipped with state-of-the-art optical transport technology and it allows flexible optical path (line) management.

From an environmental perspective, the 1FINITY T700 reduces the environmental burden in terms of both resource and energy conservation. The components of the 1FINITY T700 are smaller, fewer in number, consolidated, and modular, improving resource efficiency with respect to performance by 40.0% compared to previous models. Moreover, the use of industry-leading reduced power consumption technology has reduced power consumption with respect to transport performance by 45% compared to previous models.

The 1FINITY T700 features state-of-the-art optical transport technology and improved resource efficiency. Through this system, we will help to create an affluent society.

Gbps* : A unit of data transport speed that indicates how many gigabits of data can be sent per second

› Case Studies

Product Recycling

Our Approach

The Fujitsu Group's recycling activities are based on the concept of Extended Producer Responsibility (EPR), which holds producers responsible for product design and manufacturing as well as disposal and recycling, and the concept of Individual Producer Responsibility (IPR), which holds a company responsible for its own products. Fujitsu is certified for area-wide disposal of industrial waste based on the Act to Promote Effective Utilization of Resources in Japan. In accordance with these concepts, Fujitsu Recycling Centers around Japan are entrusted to properly dispose of industrial waste, and one of Fujitsu's voluntary management indicators is "to reuse at least 90% of the resources in its ICT products for businesses."

Changes in Resource Reuse Rates of End-of-life Business ICT Products

Item	FY 2019	FY 2020	FY 2021
Resource reuse rate (%)	91.1	91.6	92.9

› Case Studies

Environmental Action Plan

Reducing the Amount of Water Used

Our Approach

The risk of a global water shortage is on the rise, due to such factors as climate change, the destruction of forests, and the economic growth and population boom in emerging and developing countries. Such a water shortage is a risk for companies as well, since it may very well affect the survival of their businesses. As such, it is important for us to recycle and reduce the amount of water we use.

Since the Fujitsu Group uses particularly large amounts of water in the manufacture of semiconductors and printed circuit boards, we believe it is necessary to reduce our water consumption in these areas especially. In addition to our general water conservation efforts, we have also worked to reuse and recirculate water, through methods such as pure water recycling and the reuse of rainwater. We are continuing our efforts to effectively use water resources in the Environmental Action Plan (Stage X).

FY 2021 Performance

Targets under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Adding policies to reduce water consumption and reducing water usage by at least 30,000 m^3 by the end of FY 2022. (*1)	Water consumption was reduced 83,000 m^3 (target for FY 2021: 19,000 m^3)

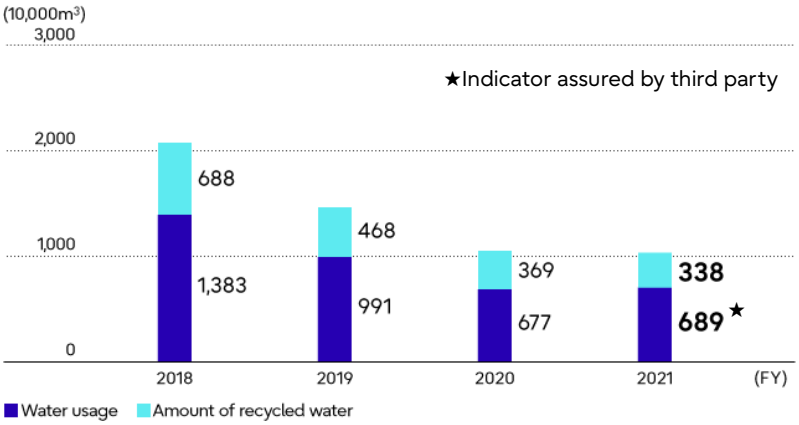
(*1) Target organizations:
Japan; Fujitsu and Fujitsu Group offices (excluding data centers)
Overseas; Fujitsu and Fujitsu Group manufacturing sites

The policies we established in FY 2021 to reduce water usage include reducing the amount of water used in coating and cleaning processes, reviewing our water supply and wastewater through actions such as optimizing the water supply for our scrubbers, and upgrading air conditioners from water-cooled units to air-cooled units. We implemented these policies at each business site, plant, etc., so that we could make more efficient use of our water resources. As a result, in FY 2021 we reduced our water usage by 83,000 m^3, which is 277% of the target of 30,000 m^3 as was set in the Fujitsu Group Environmental Action Plan (Stage X).

Water Usage in FY 2021 was 6.89 Million m^3★ (a 1.8% Increase Compared to the Previous Fiscal Year)

The total amount of water we used in FY 2021 was 6.89 million m^3 (output level per sales amount: 192 m^3/100 million yen), a slight increase of 1.8% compared to FY 2020. 3.38 million m^3 of that usage was recycled water, which was a reduction of 8.4% in comparison to FY 2020. The total amount of water we used increased slightly, so recycled water comprised 49.0% of our total water usage, a 5.5%pt decrease from FY 2020.

Trends in Water Usage and Amounts of Recycled Water



Environmental Action Plan

Activities to Conserve Water Resources in the Upstream Portion of the Supply Chain

Our Approach

We have also situated the conservation of water resources as a priority issue which we need to ask our suppliers to address, as well as the reduction of CO_2 emissions. We reviewed the questions we posed on our environmental survey forms so that we would be able to understand the status of our suppliers' activities and their actual circumstances, and are promoting the implementation of water risk assessments as the initial step for our water resource conservation activities.

We have participated in the CDP Supply Chain program since FY 2018, in parallel with the above-mentioned activities. Based on our international environmental research activities, we are taking a more in-depth look at the activities of our primary suppliers to reduce CO_2 emissions and conserve water resources, and considering the issues and our policies.

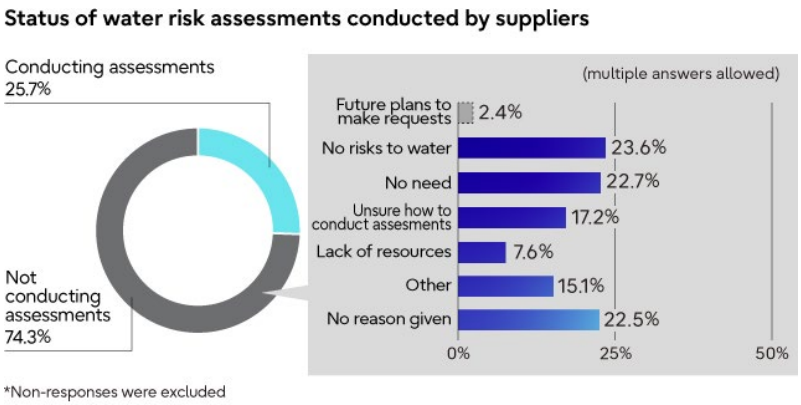
We expect that having the entire supply chain work toward reducing emissions can produce even greater reduction effects (synergies), while also expanding the network of these activities through the supply chain to cover an even wider area spreading beyond national boundaries. Through efforts such as these, the Fujitsu Group hopes to help create a sustainable water environment.

FY 2021 Performance

Targets Under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Conservation of Water Resources: Request that Primary Suppliers Engage in Activities to Conserve Water	Requested that approximately 750 of the Fujitsu Group's primary suppliers engage in activities to conserve water

Conservation of Water Resources: Requesting that Primary Suppliers Work to Conserve Water Resources as a Key Theme They Should Address

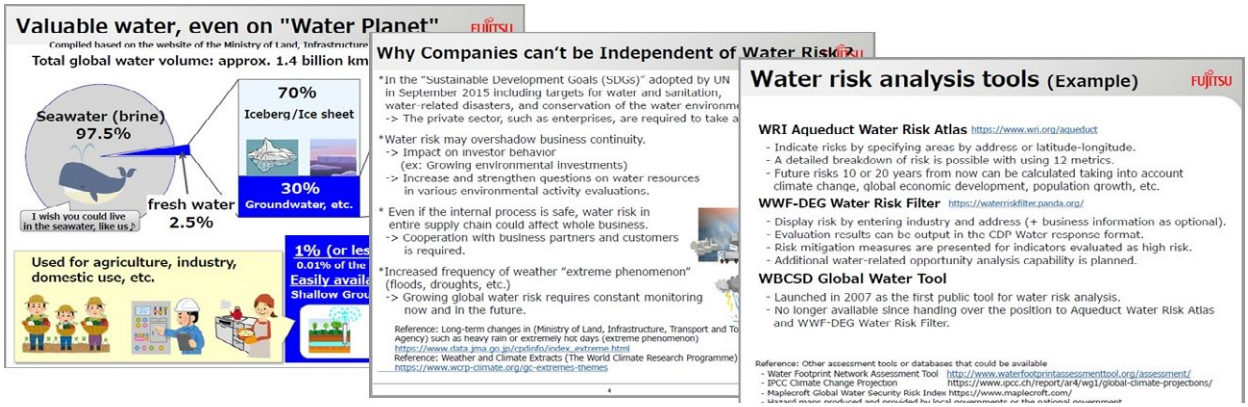
Against the backdrop of worsening water resource problems and growing international concern, in addition to continuing our work to reduce CO_2 emissions as pursued under the Fujitsu Group Environmental Action Plan (Stage VIII) from FY 2016 to FY2018, we situated the conservation of water resources as a priority issue which we need to ask our suppliers to address, starting in FY 2019. We reviewed the questions we posed on our environmental survey forms so that we would be able to understand the status of our suppliers' activities and their actual circumstances, and identified the challenges we will face in expanding our activities in the future.



As many businesses are connected in the global supply chain, conservation of water resources is a relevant issue for any company. The first step in working to conserve water resources is to comprehend exactly what water risks are associated with one's own company. In our environmental survey, 25.7% of suppliers (about 190 companies) said that they were conducting water risk assessments, which is an increase from 22.8% last year. We received many responses from suppliers who are not conducting water risk assessments who said that conservation of water resources was not relevant to their companies—answering that they had "no water risks" or had "no need to conduct assessments" —as well as responses from companies that did not know how to assess water risks. In order to have suppliers think about conservation of water resources as a more familiar issue, we are offering the "Water Risk Assessment for Companies" document, which compiles materials on topics such as the importance of risk assessments, and introduces publicly available assessment tools. In the future, we will request that even more suppliers conduct water risk assessments and request that they work to conserve water resources.

"Water Risk Assessment for Companies" can be downloaded from the following sites.

- Japan: https://www.fujitsu.com/jp/about/procurement/material/green/index.html
- Global: https://www.fujitsu.com/global/about/procurement/green/



Contents of "Water Risk Assessment for Companies"

Environmental Action Plan

Living in Harmony with Nature (Conservation of Biodiversity)

Management Approach

The loss of biodiversity poses an enormous global risk; an integrated response toward a net-zero and nature-positive world is vital

The Global Risks Report 2022 released by the World Economic Forum (WEF) ranks biodiversity loss as the third most severe risk globally, recognizing the loss of nature and biodiversity alongside climate change as a critical long-term threat. Viewing the creation of a nature-positive world as essential to addressing this issue, the G7 Summit held in June 2021 agreed on a G7 2030 Nature Compact, which includes a commitment to "halt and reverse biodiversity loss by 2030". In Part 2 of the 15th Conference of the Parties to the UN Convention on Biological Diversity (hereinafter CBD-COP15), scheduled to be held in 2022, the Post-2020 Global Biodiversity Framework, which includes international targets for 2030, will also be adopted. Business groups such as the World Business Council for Sustainable Development (WBCSD) and international environmental NGOs such as the World Wide Fund for Nature (WWF) have also announced a joint proposal with a target of achieving a nature-positive world by 2030. It is now considered vital that we not only have net-zero initiatives to counter climate change, but also integrated measures aimed at achieving a nature-positive world.

Assessing our impact on nature and biodiversity and setting targets to identify Fujitsu's high-impact business activities

In 2009, the Fujitsu Group formulated the Fujitsu Group Biodiversity Action Principles. Those principles state that our approach to doing business will "pursue the conservation of biodiversity and the sustainable use of natural resources in our business activities" and will "contribute to building a society which ensures the conservation of biodiversity and the sustainable use of natural resources". Not only will we continually reduce the environmental impact of our business activities, but we will also utilize ICT to assist in the protection of endangered species and the conservation of tropical rainforests on an ongoing basis.

To achieve a nature-positive world, the Fujitsu Group also believes that no time should be lost in promoting such initiatives. As one of the targets in Stage X of our Environmental Action Plan, we have set a target for the conservation of nature and biodiversity, and we have initiated actions aimed at assessing and reducing our dependencies and impacts on ecosystems and on biodiversity.

FY2021 Performance

Target under the Fujitsu Group Environmental Action Plan (Stage X)	Results for FY2021
Visualize and reduce the impact of corporate activities on ecosystems and on biodiversity	Based on global-level discussions, the assessment indicator of 'Ecological Footprint' was selected, and activities have commenced to establish the assessment methodology.

Selection of 'Ecological Footprint' as the assessment indicator based on global-level discussions

Of the draft international targets for 2030 scheduled to be adopted at CBD-COP15, one very relevant goal for the business sector is target 15: "All businesses (public and private, large, medium and small) assess and report on their dependencies and impacts on biodiversity, from local to global, and progressively reduce negative impacts, by at least half and increase positive impacts, reducing biodiversity-related risks to businesses and moving towards the full sustainability of extraction and production practices, sourcing, and supply chains, and use and disposal (Reference "CBD/WG2020/3/3 FIRST DRAFT OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK")." Discussions on the assessment indicators for each of the targets were also held at the 24th meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (hereinafter SBSTTA24), with 'Ecological Footprint' being proposed as one of the candidate indicators for target 15.

Following consideration of these and other global-level discussions, the Fujitsu Group selected Ecological Footprint as the assessment indicator for targets in its Environmental Action Plan (Stage X).

Examples of Initiatives in FY2021

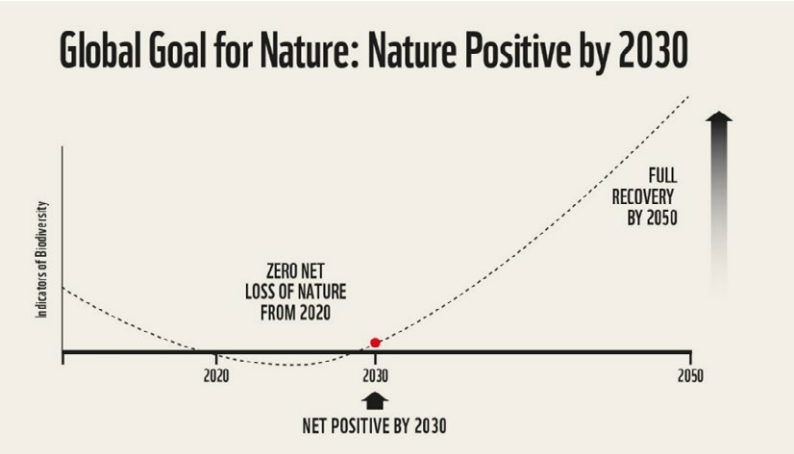
In considering future initiatives, the Fujitsu Group believes that the most important factor is to align its plans with the trends of international initiatives and has accordingly identified the international trends outlined below. We also feel it is crucial that initiatives "work towards achieving a nature-positive world by 2030" and "contribute to attaining the 2030 targets in the post-2020 global biodiversity framework". Therefore, in Stage X of the Fujitsu Group Environmental Action Plan, targets and indicators were selected that aligned with target 15 of the draft international targets for 2030.

We will continue to expand the range of our nature and biodiversity conservation activities in the future as we work toward achieving a nature-positive world by 2030.

Identifying International Trends – Nature-positive –

At the G7 Summit held in Cornwall, England in June 2021, the G7 nations agreed on the G7 2030 Nature Compact. This agreement included a commitment to "halt and reverse biodiversity loss by 2030", and statements such as: "our world must not only become net zero, but also nature positive, for the benefit of both people and the planet", and: "Nature, and the biodiversity that underpins it, ultimately sustains our economies, livelihoods and well-being."

Fourteen organizations, including the WBCSD and the WWF, released a report titled 'A Nature-Positive World: The Global Goal for Nature', which set out three objectives: 1. Zero Net Loss of Nature from 2020; 2. Net Positive by 2030 (on a baseline of 2020); and 3. Full Recovery by 2050.



Global Goal for Nature : Nature Positive by 2030

Source: A Nature-Positive World : The Global Goal for Nature

Identifying International Trends – Post-2020 Global Biodiversity Framework –

The Post-2020 Global Biodiversity Framework currently under discussion includes international targets for 2030 that are scheduled to be adopted in Part 2 of CBD-COP15, slated for 2022. The initial draft report from Part 1 of CBD-COP15 was released in July 2021. The target in that initial draft that relates most closely to corporate activities is target 15. Candidate indicators for that target were discussed at SBSTTA24, and one of the proposed indicators was Ecological Footprint.

Goal/Milestone/Target[5]	Headline indicator	Summary of the assessment	Component indicator	Complementary indicators
Target 15. All businesses (public and private, large, medium and small) assess and report on their dependencies and impacts on biodiversity, from local to global, and progressively reduce negative impacts, by at least half and increase positive impacts, reducing biodiversity-related risks to businesses and moving towards the full sustainability of extraction and production practices, sourcing and supply chains, and use and disposal.	15.0.1 [Number of companies assessing and reporting on their][Quantified volumes of] Dependencies [and] impacts[, risks and opportunities] of businesses on biodiversity [and related human rights]	Relevance: Green Nationally feasible: Yellow Globally feasible with national disaggregation: Yellow Readiness: Red Summary: Relevant, not fully operational Most Parties felt that an indicator on dependencies and impacts was relevant; however, such an indicator would need to be further defined and elaborated. Parties suggested a number of adjustments to the indicator and/or alternative indicators	Tbc (will align with the Task Force for Nature-related Financial Disclosures) 15.4.1 Ecological footprint 15.4.2 Recycling rate	t15.1. CO_2 emission per unit of value added (SDG indicator 9.4.1) t15.2. Change in water-use efficiency over time (SDG indicator 6.4.1)

CO-CHAIRS' SUMMARY AND PROPOSED LIST OF INDICATORS FOR CONSIDERATION IN DEVELOPING THE MONITORING FRAMEWORKFOR THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK
Source: CBD/SBSTTA/REC/24/2 27 March 2022

Related Information

Conservation of Biodiversity

- Blakiston's Fish Owl voice recognition project
- Support for the Harapan tropical rainforest (Forest of Hope)

Environmental Data

Global Warming Prevention

GHG Emissions Report Based on GHG Protocol

★ Indicators assured by third party

Indicator		FY2018	FY2019	FY2020	FY2021
Upstream (Scope 3) [ktons-CO_2]					
	Purchased goods and service	1,840	1,436	1,104	1,207 ★
	Capital goods	6	9	15	13
	Fuel and energy-related activities not included in Scopes 1 and 2	71	133	99	94
	Transportation and distribution (Upstream)	69	64	53	71
	Waste generated in operations	5	N/A	N/A	N/A
	Business travel	93	155	27	23
	Employee commuting	68	52	5	6
	Leased assets (Upstream)	281	115	88	64
Reporting company (Scope 1, 2) [ktons-CO_2]					
	Direct emissions (Scope1)	147	87	75	70 ★
	Indirect emissions from energy sources (Scope2)	808 *1 771 *2	715 *1 663 *2	583 *1 540 *2	530 (*1) ★ 428 (*2) ★
Downstream (Scope 3) [ktons-CO_2]					
	Transportation and distribution (Downstream)	N/A (*3)	N/A	N/A	N/A
	Processing of sold products	23	14	12	16
	Use of sold products	3,649	3,791	3,094	3,142 ★
	End-of-life treatment of sold products	N/A	N/A	N/A	8 ★
	Leased assets (Downstream)	N/A	N/A	N/A	N/A
	Franchises	N/A	N/A	N/A	N/A
	Investment	N/A	N/A	N/A	N/A

(*1) Location-based
(*2) Market-based
(*3) N/A : Not Applicable

Environmental Data

Material Balance

Environmental impact of business activities

★ Indicators assured by third party

INPUT

Stage		Unit	FY2018	FY2019	FY2020	FY2021
Design / Procurement / Manufacturing / Development	Raw Materials					
	Metal	ktons	15	19	13 (*2)	11
	Plastic	ktons	7	7	5	5
	Others	ktons	12	13	10 (*2)	9
	Chemical Substances (*1)					
	VOC	ktons	1.1	0.6	0.3	0.3
	PRTR	ktons	10.4	9.6	9.8	9.5
	Water					
	Water usage	Million m^3	13.83	9.91	6.77	6.89★
	Energy					
	Total	PJ	17.35	16.30	13.78	13.00★
	Purchased electricity	GWh	1,614	1,477	1,240	1,165
	Heavy oil, kerosene, etc.	kL	6,822	3,570	2,898	2,593
	LPG, LNG	tons	2,222	2,115	2,078	1,982
	Natural gas, city gas	Million m^3	28.01	28.93	25.24	24.99
	District heating and cooling	TJ	41	37	52	42
Distribution / Sales	Energy					
	Fuel (light oil, gasoline, etc.)	PJ	1.02	0.95	0.77	1.03
Usage	Energy					
	Electricity	GWh (PJ)	7,356 (73.34)	8,224 (81.99)	8,783 (*2) (87.56) (*2)	7,125 (71.04)
Collection / Reuse / Recycling	Resources recycling rate	%	91.7	91.1	91.6	92.9
	Amount processed	tons	3,436	3,210	2,991	2,393

OUTPUT

Stage		Unit	FY2018	FY2019	FY2020	FY2021
Design / Procurement / Manufacturing / Development	Raw Materials					
	CO_2 emissions	ktons-CO_2	410	450	340 (*2)	290
	Chemical Substances (*1)					
	VOC	tons	178	161	135	157★
	PRTR	tons	9	8	6	6★
	Atmospheric Release					
	Total GHG emissions	ktons-CO_2	955	802	658	600★
	CO_2 (*3)	ktons-CO_2	895	795	653	598★
	GHG other than CO_2 ($PFCs$, $HFCs$, SF_6, NF_3, others)	ktons-CO_2	60	7	5	2★
	NOx	tons	32	47	26	10
	SOx	tons	4	1	1	0.3
	Water Discharge					
	Total	Million m^3	12.65	9.06	6.48	6.68
	BOD	tons	270	274	303	301
	COD	tons	55	35	9	15
	Waste					
	Amount of Waste Generated	ktons	19.0	15.7	11.0	12.5★
	Thermal recycling volume	ktons	4.0	3.0	1.7	2.0★
	Material recycling volume	ktons	14.3	12.0	8.8	9.8★
	Disposal volume	ktons	0.7	0.6	0.5	0.7★
Distribution / Sales	Atmospheric Release					
	CO_2	ktons-CO_2	69	64	53	71
Usage	Atmospheric Release					
	CO_2	Million tons-CO_2	3.65	3.79	390 (*2)	3.14★

(*1) Substances that qualify as both a PRTR targeted chemical and a VOC are included under "VOCs" only.
(*2) In line with the improvement in the accuracy of data collection, we have retroactively adjusted these figures in FY 2020.
(*3) Location-based

Environmental Data

Environmental Performance Data Calculation Standards

- Applicable Period: April 1, 2021 – March 31, 2022

Fujitsu Group Environmental Action Plan (Stage X)

Boundary : Refer to 5 -3 -3 in this Book

Target Item	Indicator	Unit	Calculation Method
Reduce greenhouse gas (GHG) emissions from business sites each year by 4.2% or more, compared with the base year of FY2013.	GHG emissions	tons-CO_2	• Amount of CO_2 emissions: Σ [(fuel oil, gas annual usage) x CO_2 conversion factor for each type of energy*] *CO_2 conversion factor: Conversion factor based on the Act on Promotion of Global Warming Countermeasures • Location-based: • Japan: Usage of 0.441 tons-CO_2/MWh in FY 2020 (Source: Adjusted emission factors from the Electric Power Council for a Low Carbon Society) • Overseas: Latest IEA value (IEA CO_2 Emissions from Fuel Combustion 2021) • Market-based: • Japan: FY 2020 emission factors for each power producer are used (adjusted emission factors) (Source: GHG Emissions Accounting, Reporting, and Disclosure System List of Emission Factors by Power Producer) • Overseas: Value of the power company or the latest IEA value (IEA CO_2 Emissions from Fuel Combustion 2021)
			• Amount of non-CO_2 GHG emissions: Annual emissions of HFCs, PFCs, SF_6 and NF_3 at semiconductor plants (AFSW Inc.). Σ [Annual emissions for each type of gas[*1] x Global warming potential for each gas[*2]] *1 Based on the calculation method used by the appliances and electronics industries: Amount of each gas used (or purchased) x Reactant consumption rate x Removal efficiency, etc. *2 Global Warming Potential (GWP): IPCC (Intergovernmental Panel on Climate Change) Fourth Assessment Report "Climate Change 2007"
	Rate of reduction of GHG due to voluntary efforts	%	(Total amount of GHG reductions due to voluntary efforts / total amount of GHG emissions in the previous fiscal year) × 100
Improve PUE (Power Usage Effectiveness) of our data centers by 3%, compared with FY 2017.	Rate of PUE improvements	%	• PUE = Σ (Total DC energy consumption) ÷ Σ (Total IT device energy consumption) Σ: Combined total energy of the 23 main DCs • Rate of improvement (%) = (Base fiscal year PUE - PUE for the current fiscal year) ÷ Base fiscal year PUE x 100 Base fiscal year: FY 2017
Increase renewable energy usage to 16% of total electricity.	Ratio of renewable energy use	%	Ratio of the total amount of electricity generated by the company and purchased from outside using renewable energy (Solar, wind, hydro, biomass, geothermal, etc.) used in the fiscal year to the amount of electricity used in the fiscal year

Reduce CO_2 emissions due to power consumption during product usage by 17% or more, compared with FY2013.	Rate of reduction in CO_2 emissions when products are used	%	Rate of reduction in GHG emissions based on FY 2013 emissions, as calculated under Scope 3: Use of sold products through downstream
Promote eco design for resource saving and circulation and increase resource efficiency of newly developed products by 10% or more, compared with FY 2019.	Rate of improvement of resource efficiency of new products	%	• The average rate of improvement of resource efficiency (versus FY 2019) of products*. * Hardware products under the Fujitsu Brand, newly developed between FY 2021 and FY 2022. Excludes products not designed by Fujitsu (OEM products) and products designed under customer specifications. * Refer to "Improving resource efficiency of products" for the resource efficiency calculation method.
Reduce water usage by 30,000 kiloliters or more by implementing water resource conservation measures.	Amount of water usage reduction	m^3	Take the accumulated impact (actual or estimated) of water use reduction measures implemented at each business site, and calculate the amount of reduction for the relevant fiscal year

GHG Emissions Amount Report based on GHG Protocol

Indicator		Unit	Calculation Method
Upstream (Scope 3)	Purchased goods and services	tons-CO_2	Components purchased during the fiscal year x Emissions per unit of purchase The procurement volume is for the Fujitsu Group's centralized purchasing and does not include voluntary procurement by each Group company (Source: Embodied Energy and Emissions Intensity Data (3EID) published by the National Institute for Environmental Studies Center for Global Environmental Research)
	Capital goods	tons-CO_2	Total amount of acceptance inspection of construction objects in the fiscal year × emission intensity (Source: Database for calculating an organization's greenhouse gas emissions through its supply chain ver. 3.2 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)
	Fuel and energy-related items not included in Scope 1 or 2)	tons-CO_2	Annual amounts of fuel oil and gas, electricity and heat purchased (consumed) mainly at business sites owned by Fujitsu x Emissions per unit (Source: Database for calculating an organization's greenhouse gas emissions through its supply chain ver. 3.1 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry, Based on the Japanese emissions intensity database, IDEA v2.3 (For calculating greenhouse gas emissions in the supply chain)
	Transportation and distribution (upstream)	tons-CO_2	Transportation of goods within Japan: CO_2 emissions related to the transportation of goods within Japan by the Fujitsu Group * CO_2 emissions related to domestic transportation by the Fujitsu Group, based on the Act on the Rational Use of Energy as a source. The fuel economy method (for some vehicles) or the improved ton-kilometer method (vehicle, rail, air)
		tons-CO_2	International transport/overseas local transport: transportation ton-kilometer x Emission per unit (Source: GHG protocol emissions coefficient database)
	Waste generated in operations	tons-CO_2	Annual amounts of waste (discharged mainly by business sites owned by Fujitsu) processed or recycled, by type and processing method x Emissions per unit of annual amount of waste processed or recycled (Source: Database for calculating an organization's greenhouse gas emissions through its supply chain ver. 3.2 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry, Based on the Japanese emissions intensity database, IDEA v2.3 (For calculating greenhouse gas emissions in the supply chain)

	Business travel	tons-CO_2	(By means of transport) Σ(Transportation expense payment x Emissions per unit) (Source: Basic Guidelines for Calculating Greenhouse Gas Emissions Via Supply Chains Ver. 2.3 and Emissions per Unit Database Ver. 3.1 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)
	Employee commuting	tons-CO_2	For portions of commute by public transportation: (By means of transport) Σ (Transportation expense payment x Emissions per unit) (Source: Same as above) For portions of commute by private automobile: Σ (Transported persons-kilometer x Emissions per unit) (Source: Same as above) Transported persons-kilometer : calculated from transportation expense payment, price of gasoline, and fuel efficiency
	Leased assets (Upstream)	tons-CO_2	Annual amounts of fuel oil, gas, electricity, and heat consumed mainly at leased business sites x Emissions per unit of fuel oil, gas, electricity, and heat consumed (Sources – Japan: Act on Promotion of Global Warning Countermeasures – GHG Emissions Accounting, Reporting, and Disclosure System; Overseas: IEA CO_2 Emissions from Fuel Combustion Highlights 2021)
Reporting company (Scope 1, 2)	Direct emissions	tons-CO_2	Amount of CO_2 emissions from the consumption of fuel oil and gas (burning of fuel) and GHG emissions other than CO_2, mainly at business sites owned by Fujitsu * For the calculation method, see "Reduce greenhouse gas (GHG) emissions from business sites each year by 4.2% or more" in the Environmental Action Plan (Stage X)
	Indirect emissions from energy sources	tons-CO_2	CO_2 emissions from the consumption (purchase) of electricity and heat mainly at business sites owned by Fujitsu * For the calculation method, see "Reduce greenhouse gas (GHG) emissions from business sites each year by 4.2% or more" in the Environmental Action Plan (Stage X).
Downstream (Scope 3)	Processing of sold products	tons-CO_2	Intermediate product sales volume*1 x Emissions per unit of processing volume*2 *1 Intermediate product sales volume refers to Fujitsu's device solution sales *2 Emissions per unit of processing volume is calculated from Fujitsu's FY 2015 assembly plant data
	Use of sold products	tons-CO_2	Electricity consumption during product use* x Emissions per unit electricity (Source: CO_2 emission coefficient of The Electric Power Council for a Low Carbon Society (FY2020 results)) * Electricity consumption during product use: Calculated as power consumption per unit of each major product shipped in the fiscal year*1 during the estimated time of use x Units shipped for the subject fiscal year. Electricity usage for the anticipated usage time per product unit is calculated as electricity consumed (kW) x Time used (h / Days) x Number of days used / Year x Number of years used. Time used (h), number of days used per year, and number of years used are set according to Fujitsu's internal scenarios
	End-of-life treatment of sold products	tons-CO_2	Σ (Weight of major products sold during the fiscal year *1 by type (t) x Percentage of waste by type and treatment method (%) *3 x Emissions intensity by type and treatment method (tCO_2e/t)) (Source: Database for calculating an organization's greenhouse gas emissions through its supply chain ver. 3.2 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry. The emission intensity includes the transportation stage of waste.) *3 The percentage by type of waste and disposal method is calculated based on the waste disposal results of our company Recycling Center in the previous fiscal year for products sold, and based on the waste disposal results of the PC3R Promotion Association for the current fiscal year for other products collected.

Response to Environmental Risks: Environmental Liabilities

Indicator	Unit	Calculation Method
Cost of environmental liabilities	Yen	1. Asset retirement obligation (Only asbestos removal cost related to facility disposal) 2. Cost for soil contamination countermeasures 3. Disposal processing cost for waste with high concentration of PCB (polychlorinated biphenyl)

Response to Environmental Risks: Preventing Soil and Groundwater Pollution

Indicator	Unit	Calculation Method
Measured value of groundwater pollution	mg/L	The highest value in the fiscal year for substances detected at levels exceeding regulated levels set in the Soil Contamination Countermeasures Act, etc., at monitoring wells at the boundaries of sites where past business activities have resulted in soil contamination

Material Balance

Boundary : Refer to the "List of Organizations Covered by the Report on Environmental Activities" or 5-3-4-10~5-3-4-13 in this book.

Indicator			Unit	Calculation Method
INPUT				
Design/ Procurement/ Manufacturing/ Development	Raw Materials		tons	Material inputs to our major products *1 shipped from plants in the fiscal year (raw materials per unit for each product x The number of units shipped in the fiscal year)
	Chemical Substances	Volume of substances subject to VOC emissions restrictions	tons	Of the 20 VOCs (Volatile Organic Compounds) specified in the environmental voluntary action plans of the four electrical and electronic industry associations*2, total amounts handled are provided for those substances handled in quantities exceeding 100 kg annually per substance at individual business sites, including overseas sites Substances subject to VOC emissions controls that are also covered by the PRTR law are included in the section on substances subject to VOC emissions controls
		Volume of PRTR-targeted substances	tons	Of the substances covered by the PRTR law (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environmental and Promotion of Improvements to the Management Thereof), totals are provided for those substances handled in quantities exceeding 100 kg annually per substance per business site, including overseas sites
	Amount of water used		m^3	Annual use of clean water, industrial water and groundwater (not including groundwater used for melting snow or extracted for purification.)
	Amount of Recycled water		m^3	Annual amount of water used for manufacturing and other purposes once, then recovered, processed, and used again for manufacturing and other processes.
	Energy consumption (calorie basis)		GJ	Σ [(Purchased electricity, fuel oil and gas, and district heating and cooling annual usage) x Thermal conversion factor for each type of energy*] * Thermal conversion factor (Heating value unit): According to the "Act on the Rational Use, etc., of Energy," conversion factors from each supplier or 44.8 GJ/1000 m^3 were used for town gas.

		Purchased electricity	MWh	Annual electricity purchases
		Bunker A, fuel oil, light oil, benzine, gasoline	kL	Annual fuel oil usage (or purchases)
		Natural gas	m^3	Annual natural gas usage (or purchases)
		Town gas	m^3	Annual town gas usage (or purchases)
		LPG	tons	Annual LPG usage (or purchases)
		LNG	tons	Annual LNG usage (or purchases)
		District heating and cooling	GJ	Annual district heating and cooling (cold and hot water for cooling and heating) usage (or purchases)
Distribution / Sales	Energy consumed for transport		GJ	Total value of transport energy consumption for Fujitsu*1 and Fujitsu Group companies *2 *1 Fujitsu (domestic transport): Energy consumption related to domestic transport by the Fujitsu Group, based on the Act on the Rational Use of Energy "Logistics." *2 Fujitsu Group Companies: Calculated from the transport CO_2 emissions from OUTPUT (distribution and sales) using the ratio of Fujitsu (domestic transport) transport energy consumption to transport CO_2 emissions.
Use of sold Products	Energy	Electricity	GWh	Electricity consumed in connection with major products *1 shipped from plants during the fiscal year (Amount of electricity used for time estimated per product unit x Units shipped in the fiscal year) ＊Calorific value conversion factor (unit heat generation): in accordance with the "Law Concerning the Rational Use of Energy."
			GJ	
Recycling of resources	Resource recycling rate		%	Based on the calculation method provided by JEITA, recycled components and resources are calculated as a percentage of the weight of used products processed in Japan. Excludes collected waste other than used electronic products.
	Processed volume		tons	
OUTPUT				
Design/ Procurement/ Manufacturing/ Development	Raw Materials	CO_2 emissions	tons -CO_2	CO_2 emissions related to all stages from resource extraction through processing into raw materials (CO_2 emissions equivalent for raw materials used per product unit x Units shipped in the fiscal year) for the raw materials used in major products*1 shipped from plants in the fiscal year
	Chemical Substances	Volume of substances subject to VOC emissions restrictions	tons	Of the 20 VOCs (Volatile Organic Compounds) specified in the environmental voluntary action plans of the four electrical and electronic industry associations*2, total amounts released are provided for those substances handled in quantities exceeding 100 kg annually per substance at individual business sites, including overseas sites. Substances subject to VOC emissions controls that are also covered by the PRTR law are included in the section on substances subject to VOC emissions controls.
		Volume of PRTR-targeted substances released	tons	Of the substances covered by the PRTR law (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof), released totals are provided for those substances handled in quantities exceeding 100 kg annually per substance per business site, including overseas sites.

	Atmospheric pollution	CO_2 emissions	tons-CO_2	* For the calculation method, see "Greenhouse gas emissions (CO_2 emissions) from business sites" in the Environmental Action Plan (Stage X).
		GHG emissions other than CO_2	tons-CO_2	* For the calculation method, see "Greenhouse gas emissions (GHG emissions other than CO_2) from business sites" in the Environmental Action Plan (Stage X).
		NOx emissions	tons	NOx concentration (ppm) x 10^{-6} x Dry gas emissions (m^3N/hr) x Operating time (hr/yr) x 46/22.4 x 10^{-3}
		Sox emissions	tons	SOx concentration (ppm) x 10^{-6} x Dry gas emissions (m^3N/hr) x Operating time (hr/yr) x 64/22.4 x 10^{-3}
	Water Discharge	Wastewater discharges	m^3	Annual water discharge into public waterways and sewers (not including groundwater used for melting snow, but including groundwater extracted for purification when the amount of water is known)
		BOD emissions	tons	BOD concentration (mg/l) x Water discharges (m^3/yr) x 10^{-6}
		COD emissions	tons	COD concentration (mg/l) x Water discharges (m^3/yr) x 10^{-6}
	Waste	Amount of waste generated	tons	Total value obtained by adding the total amount of effective utilization (thermal recycling, material recycling) and the amount of waste processed
		Thermal recycling volume	tons	Among all types of waste put to effective use, the total volume used in thermal recycling * Thermal recycling: Recovery and use of the heat energy generated by incinerating waste
		Material recycling volume	tons	Among all types of waste put to effective use, the total volume used in material recycling * Material recycling: Processing of waste to facilitate its reuse, and re-use of processed waste as material or raw materials for new products
		Disposal volume	tons	Volume of industrial and general waste processed by, for example, landfilling or simple incineration
Distribution / Sales	Atmospheric Release		tons-CO_2	* For the calculation method, see "Transportation and distribution (upstream)" in the GHG Emissions Report based on GHG Protocol Standards.
Use of sold Products	Atmospheric Release		tons-CO_2	For the calculation method, see "Use of sold products" in the GHG Emissions Report based on GHG Protocol Standards.

*1 Major products:
Personal computers, servers, workstations, storage systems, printers, scanners, financial terminals, retail terminals, routers, LAN access equipment, access network products, mobile phone base stations and electronic devices

*2 Four electrical and electronic industry associations:
The Japan Electrical Manufactures' Association (JEMA), Japan Electronics and Information Technology Industries Association (JEITA), Communications and Information Network Association of Japan (CIAJ), and Japan Business Machine and Information System Industries Association (JBMIA).

Environmental Data

List of Organizations Covered by the Report on Environmental Activities in FY2021

Organizations covered by the report

The coverage is of Fujitsu itself plus a total of 99 companies centering on consolidated subsidiaries that have built environmental management systems. The table below shows the organizations[*1] for which individual performance data is gathered.

*1 The following company names are as of March 31, 2022.

Organizations covered by each Indicators

①GHG emissions : All Fujitsu Group business sites
②Scope 1, 2 : Fujitsu and the Fujitsu Group's own offices and managed rental offices
③Energy : Fujitsu and the Fujitsu Group's own offices and managed rental offices
④Water : Japan; Fujitsu and Fujitsu Group offices excluded datacenters
Overseas; Fujitsu and Fujitsu Group manufacturing sites
⑤Waste : Japan; Fujitsu offices excluded datacenters and Fujitsu Group manufacturing sites.
From FY 2021, waste plastics from rental offices are included in the calculation.
Overseas; Fujitsu and Fujitsu Group manufacturing sites
⑥Chemical : Fujitsu and Fujitsu Group manufacturing sites
*The sites that handle less than 100 kg per substance per year are excluded.
⑦EMS : Organizations with Environmental Management Systems (EMS). Including organizations with voluntary EMS

Headquarters

No.	Company name	①	②	③	④	⑤	⑥	⑦
1	Fujitsu Limited	✔	✔	✔	✔	✔	✔	✔

Fujitsu Group companies in Japan (71companies)

No.	Company name	①	②	③	④	⑤	⑥	⑦
1	FUJITSU HOME & OFFICE SERVICES LIMITED	✔						✔
2	Kawasaki Frontale Limited	✔						✔
3	Fujitsu Techno Research Limited	✔						✔
4	Toyama Fujitsu Limited	✔	✔	✔	✔			✔
5	Fujitsu Facilities Limited	✔						✔
6	DIGITAL PROCESS LTD.	✔						✔
7	PFU LIMITED	✔	✔	✔	✔	✔	✔	✔
8	FUJITSU BANKING SOLUTIONS LIMITED	✔						✔

9	SHIGA FUJITSU SOFTWARE LIMITED	✔						✔
10	FUJITSU KAGOSHIMA INFORNET LIMITED	✔						✔
11	FUJITSU CLOUD TECHNOLOGIES LIMITED	✔						✔
12	G-Search Limited	✔						✔
13	FUJITSU FSAS INC.	✔						✔
14	FUJITSU COMMUNICATION SERVICES LIMITED	✔						✔
15	FUJITSU NETWORK SOLUTIONS LIMITED	✔						✔
16	Fujitsu Frontech Limited	✔	✔	✔	✔	✔	✔	✔
17	Fujitsu Japan Limited	✔						✔
18	FUJITSU SYSTEM INTEGRATION LABORATORIES LIMITED	✔						✔
19	FUJITSU TOKKI SYSTEMS LIMITED	✔						✔
20	FUJITSU DEFENSE SYSTEMS ENGINEERING LIMITED	✔						✔
21	FUJITSU LEARNING MEDIA LIMITED	✔						✔
22	FUJITSU RESEARCH INSTITUTE	✔						✔
23	FUJITSU CoWorCo LIMITED	✔						✔
24	TWO-ONE LIMITED	✔						✔
25	FUJITSU I-NETWORK SYSTEMS LIMITED	✔	✔	✔	✔	✔	✔	✔
26	FUJITSU MIDDLEWARE LIMITED	✔						✔
27	Fujitsu Kyushu Network Technologies Limited	✔						✔
28	Fujitsu Telecom Networks Limited	✔	✔	✔	✔	✔	✔	✔
29	FUJITSU COMPUTER TECHNOLOGIES LIMITED	✔						✔
30	FUJITSU IT PRODUCTS LIMITED	✔	✔	✔	✔	✔	✔	✔
31	Fujitsu Isotec Limited	✔	✔	✔	✔	✔	✔	✔
32	FUJITSU PERSONAL SYSTEM LIMITED	✔						✔
33	FUJITSU QUALITY LABORATORY LIMITED	✔						✔
34	FUJITSU QUALITY LABORATORY ENVIRONMENT CENTER LTD.	✔						✔
35	Fujitsu Optical Components Limited	✔	✔	✔	✔	✔	✔	✔
36	FUJITSU KANSAI-CHUBU NET-TECH LIMITED	✔						✔
37	Fujitsu Mission Critical Software LTD.	✔						✔
38	FDK CORPORATION	✔	✔	✔	✔	✔	✔	✔
39	Transtron Inc.	✔	✔	✔	✔	✔		✔
40	SHINKO ELECTRIC INDUSTRIES CO. LTD.	✔	✔	✔	✔	✔	✔	✔
41	FUJITSU SEMICONDUCTOR LIMITED	✔						✔
42	Fujitsu Advanced Technologies Limited	✔						✔
43	FUJITSU CAPITAL LIMITED	✔						✔
44	FUJITSU DATA CENTER SERVICE CORPORATION	✔						✔
45	AFSW Inc.	✔	✔	✔	✔	✔	✔	✔
46	FUJITSU SEMICONDUCTOR MEMORY SOLUTION LIMITED	✔						✔

47	Fujitsu IT Management Partner Co. Ltd.	✔						✔
48	Fujitsu IS Service Limited	✔						✔
49	FUJITSU ADVANCED SYSTEMS LIMITED	✔						✔
50	FUJITSU SHIKOKU INFOTEC LIMITED	✔						✔
51	Ridgelinez Limited	✔						✔
52	FUJITSU NETWORK SERVICE ENGINEERING LIMITED	✔						✔
53	FUJITSU SOCIAL LIFE SYSTEMS LIMITED	✔						✔
54	Mobile Techno Corp.	✔						✔
55	Per Te Corporation	✔						✔
56	Care Net Ltd.	✔						✔
57	Fujitsu Advance Accounting service Limited	✔						✔
58	Fujitsu Harmony Limited	✔						✔
59	UCOT Infotechno co., Ltd	✔						✔
60	AB System Solutions Limited	✔						✔
61	ZIS INFORMATION TECHNOLOGY CORPORATION	✔						✔
62	Fujitsu Yamagata Information Technology Limited.	✔						✔
63	BANKING CHANNEL SOLUTIONS Limited	✔						✔
64	IT MANAGEMENT PARTNERS LIMITED	✔						✔
65	YJK Solutions Co., Ltd.	✔						✔
66	Best Life Promotion Ltd.	✔						✔
67	Fujitsu Traffic & Road Data Service Limited	✔						✔
68	Fujitsu Engineering Technologies Limited	✔						✔
69	Smart Agriculture IWATA Co., Ltd.	✔						✔
70	Grand Bouquet Otaki, K.K.	✔						✔
71	FITEC	✔						✔

Fujitsu Group companies worldwide (27 companies)

No.	Company name	①	②	③	④	⑤	⑥	⑦
1	江蘇富士通通信技術有限公司（Jiangsu Fujitsu Telecommunications Technology Co., Ltd.)	✔	✔	✔	✔	✔		✔
2	FUJITSU HONG KONG LIMITED	✔						✔
3	FUJITSU DO BRASIL LIMITADA	✔	✔	✔				✔
4	FUJITSU ASIA PTE LTD	✔						✔
5	FUJITSU NETWORK COMMUNICATIONS, INCORPORATED	✔	✔	✔	✔	✔		✔
6	Fujitsu America, Inc.	✔	✔	✔				✔
7	FUJITSU BUSINESS TECHNOLOGIES ASIA PACIFIC LIMITED	✔						✔
8	FUJITSU AUSTRALIA LIMITED	✔	✔	✔				✔
9	Fujitsu Technology Solutions GmbH	✔	✔	✔				✔

10	南京富士通南大軟件技術有限公司（Nanjing Fujitsu Nanda Software Technology Co., Ltd.）	✔						✔
11	FUJITSU SERVICES LIMITED	✔	✔	✔				✔
12	FUJITSU KOREA LIMITED	✔						✔
13	台湾富士通股分有限公司 (FUJITSU TAIWAN LIMITED)	✔						✔
14	富士通(中国)信息系統有限公司 (Fujitsu (China) Holdings Co., Ltd.)	✔						✔
15	Fujitsu Technology and Business of America, Inc.	✔						✔
16	富士通(西安)系統工程有限公司 (FUJITSU (XI'AN) SYSTEM ENGINEERING Co., Ltd.)	✔						✔
17	北京富士通系統工程有限公司 (Beijing Fujitsu System Engineering Co., LTD.)	✔						✔
18	Fujitsu Glovia, Inc.	✔						✔
19	FUJITSU AUSTRALIA SOFTWARE TECHNOLOGY PTY. LTD.	✔						✔
20	FUJITSU Enabling Software Technology GmbH	✔						✔
21	富士通(中国)有限公司 (FUJITSU (CHINA) Co., Ltd.)	✔						✔
22	Fujitsu Finance America, Inc.	✔						✔
23	FUJITSU EMEA PLC	✔						✔
24	Fujitsu RunMyProcess SAS	✔						✔
25	Fujitsu Systems Global Solutions Management Sdn. Bhd.	✔						✔
26	FUJITSU CONSULTING INDIA PRIVATE LIMITED	✔	✔	✔				
27	FUJITSU CONSULTING COSTA RICA, S.A	✔						

