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For Our Environment

Fujitsu Group's Environmental Management

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Fujitsu Group's Environmental Management

Environmental Policy at the Fujitsu Group

Fujitsu Group Environmental Policy

The Fujitsu Group has established the Fujitsu Group Environmental Policy based on the principles and guidelines set forth in the FUJITSU Way.

Philosophy

The Fujitsu Group recognizes that global environmental protection is a vitally important business issue. By utilizing our technological expertise and creative talents in the ICT industry, we seek to contribute to the promotion of sustainable development. In addition, while observing all environmental regulations in our business operations, we are actively pursuing environmental protection activities on our own initiative. Through our individual and collective actions, we will continuously strive to safeguard a rich natural environment for future generations.

Principles

- We help customers and society reduce the environmental impact of their business activities and improve environmental efficiency with advanced technologies, ICT products and solutions.
- We proactively promote environmentally conscious business activities to help the environment and economy coexist harmoniously.
- We strive to reduce the environmental impact of our ICT products and solutions throughout their entire lifecycle.
- We are committed to conserving energy and natural resources, and practice the 3Rs approach (reduce, reuse and recycle) to create best-of-breed eco-friendly products and solutions.
- We seek to reduce risks to human health and the environment from the use of chemical substances and waste.
- We disclose environment-related information on our business activities, ICT products and solutions, and we utilize the resulting feedbacks to critique ourselves in order to further improve our environmental programs.
- We encourage our employees to work on global environmental conservation such as tackling climate change and preservation of biodiversity through their business and civic activities to be role models in society.

Mid/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 through 2050, with the goal of bringing the Fujitsu Group's CO_2 emissions to zero, and achieving a decarbonized society, as well as contributing to the response to climate change, through technology supporting digital transformation.

More Details»
http://www.fujitsu.com/global/microsite/fujitsu-climate-and-energy-vision/

Approval by Science Based Targets Initiative

In August 2017, the reduction targets of greenhouse gas (hereafter, GHG) emissions from its business facilities and a part of value chain, set by Fujitsu Group, was approved by Science Based Targets Initiative as being at science based level. An initiative was established in 2015 jointly by a number of organizations, including the World Resources Institute and UN Global Compact. It encourages companies to set goals for reducing greenhouse gas emissions based on scientific evidence, in order to limit the global temperature increase to less than 2℃ over pre-industrial revolution temperatures.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Targets

- To reduce absolute Scope 1 and 2 GHG emissions 33% by 2030 and 80% by 2050, from a 2013 base-year.
- To reduce Scope 3 GHG emissions 30% by 2030 from a 2013 base year. The scope 3 reductions cover "purchased goods and services" and "the use of sold products".

Joining of RE100 as Gold Member

RE 100 | ℃ CDP DISCLOSURE INSIGHT ACTION

In July 2018, Fujitsu joined RE100, which strives to significantly expand the adoption of renewable electricity on 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.

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 datacenters outside of Japan. Fujitsu 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 whole.

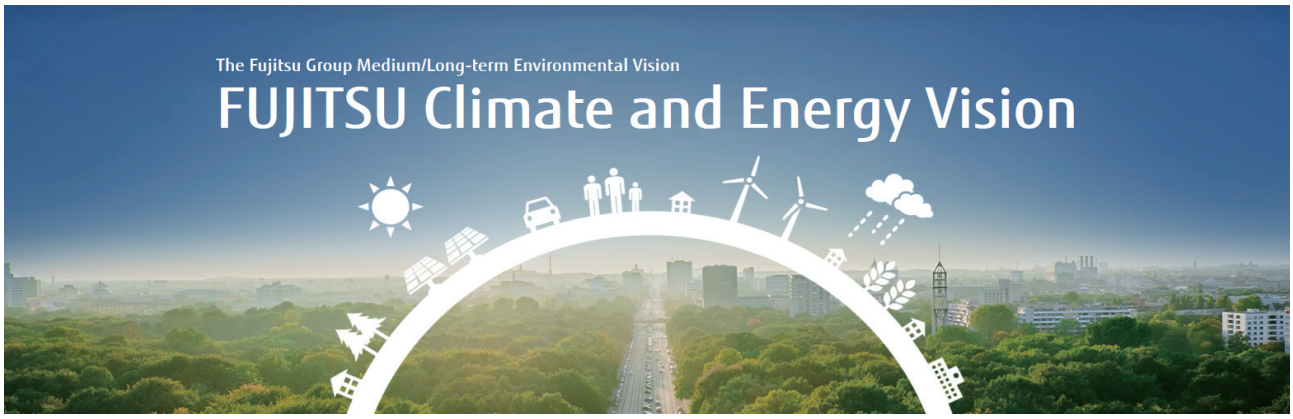
Renewable Energy Electricity Usage Goals at Fujitsu Group Locations

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

First ICT Services Company to Garner "Eco-First" Credentials

In September 2010, Fujitsu became the first ICT services company to be certified under Japan's Ministry of the Environment's "Eco-First Program." Under the program, industry-leading companies pledge to fulfill their environmental commitments to the Minister of the Environment in areas such as countering climate change and conserving biodiversity as a way to further promote their environmental protection initiatives.

FUJITSU Climate and Energy Vision

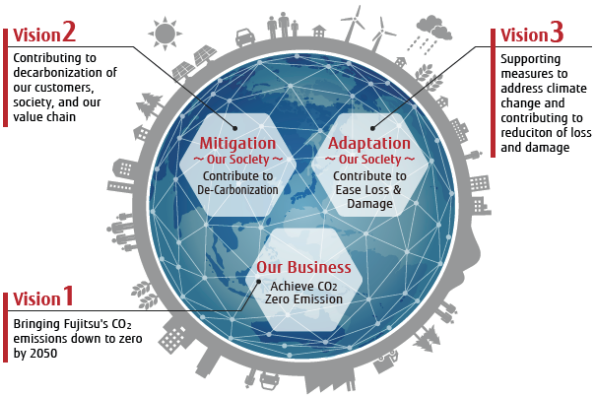


The Fujitsu Group has established the "FUJITSU Climate and Energy Vision," a medium- to long-term environmental vision with the goal of bringing the Fujitsu Group's CO_2 emissions to zero by 2050, as well as contributing to the achievement of a decarbonized society and the adaptation to climate change,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

Concept

As an international framework of measures against global warming starting in 2020, the Paris Agreement, which sets a goal of limiting the rise in global average temperature to less than 2℃ 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 decarbonized society will be necessary beginning in 2050.

The Fujitsu Group Medium/Long-term Environmental Vision



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: Achieve Zero CO_2 Emissions", "Mitigation: Contribute to a Decarbonized Society" and "Adaptation: Contribute 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.

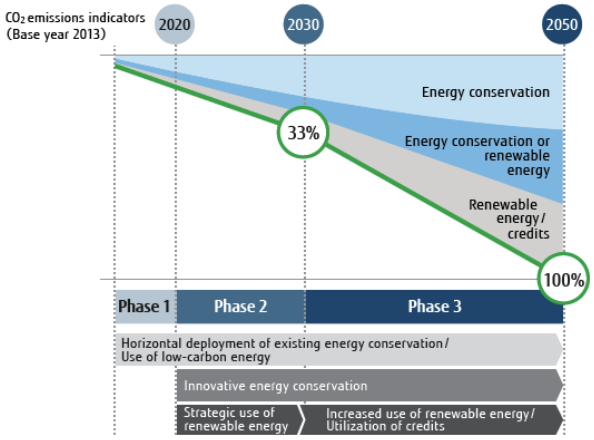
Vision1　Achieving Zero CO_2 Emissions in the Fujitsu Group

The Fujitsu Group established the challenging scenario of reducing its CO_2 emissions gradually to zero in three phases by 2050, with its intention to take the initiative as a global ICT company to strive to create a decarbonized society. This scenario has been established with scenarios recommended by the Science Based Targets (SBT) initiative. It is also consistent with the 2℃ goal[*1].

Phase Ⅰ

In Phase Ⅰ (until 2020), from the perspective of usability and economic efficiency of the technology, in Japan, we will horizontally deploy energy conservation technologies that already exist, 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.

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



Phase Ⅱ

In Phase Ⅱ (until 2030), the Fujitsu Group will work to establish and spread a transition to AI and ZEB[*2], etc. to accelerate the reduction of emissions. Further, we will expand strategic implementation of renewable energy, which is expected to be easier to use in Japan as well, with consideration given to local characteristic and economic efficiency.

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 towards deploying and deepening innovative energy conservation technologies and shifting away from carbon.

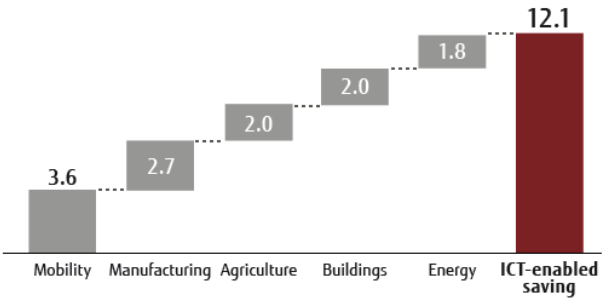
The Fujitsu Group intends to increase the use of renewable energy in the electricity consumed at Fujitsu Group locations to at least 40% by 2030 and to 100% by 2050 with the membership gained in July 2018 to RE100. RE100 is a collaborative initiative led by The Climate Group in partnership with CDP,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

*1　The GHG reduction target, with the Group's carbon credits subtracted, was approved by the SBT initiative.
*2　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.

Vision2 and 3 "Contributing to a Decarbonized 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: Contribute to a Decarbonized Society" and "Adaptation: Contribute to Measures in Society to Adapt to Climate Change" as pillars of Fujitsu's medium/long-term environmental vision, and are utilizing advanced ICT to create social innovation that contributes to resolving global environmental issues.

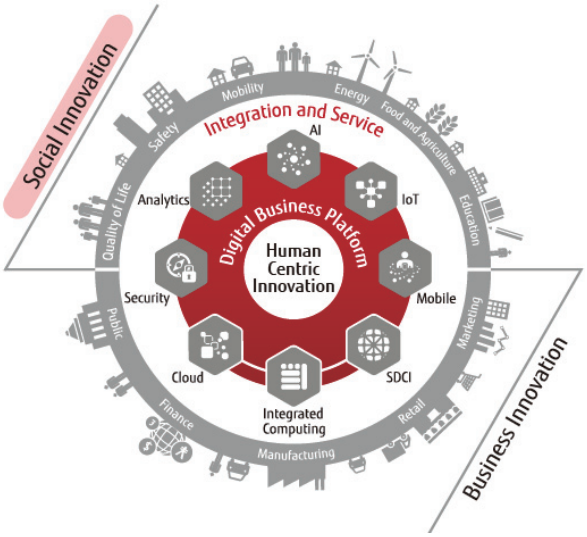
Potential to Reduce CO_2 emissions through ICT



Exhibition:"#SMARTer2030",Global e-Sustainabilitye Initiative

Vision2 Contributing to a Decarbonized Society

The Fujitsu Group contributes to the decarbonization of society by creating ecosystems with customers in a variety of industries and business types. 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 system by incorporating those technologies into a mechanism that crosses the boundaries between businesses, industries, and regions.



Vision3 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.

Fujitsu Group Environmental Action Plan (Stage Ⅷ)

The Fujitsu Group views contribution to global sustainability as one of the responsibilities that a company bears. Under this belief, since 1993 we have formulated environmental action plans and have expanded activities aimed at continuously reducing environmental impacts.

Now we are enacting Environmental Action Plan (Stage Ⅷ), covering environmental targets for FY 2016 to FY 2018.

Fujitsu Group Environmental Action Plan (Stage Ⅷ)

Fujitsu Group endeavors to help hold the increase in the global average temperature to well below 2 degree Celsius, as adopted in the Paris Agreement at COP21, while striving to achieve zero emissions as a long term goal.

We improve customers' and society's sustainability through deploying our ICT services and enhancing our products' energy and resource efficiency. We also reduce our own greenhouse gas emissions and environmental impact throughout the value chain.

Through Stage Ⅷ, we will work to meet the objectives of the FUJITSU Climate and Energy Vision, our medium- to long-term environmental vision through 2050.

Our Society

Theme / FY2018 Targets		FY2017	
		Performance	Status
Contribute to sustainable development and preservation of biodiversity through provision of ICT services			
	(1) Contribute to sustainable development of society through provision of ICT services.	Publish 8 cases	✔
	(2) Develop innovative technologies that address environmental issues.	Announced 62 key green technologies*1	✔
Improve environmental performance of products throughout their lifecycle			
	(3) Achieve top-level energy efficiency for 50% or more of the new products.	68.3% achieved	✔
	(4) Promote eco design for resource saving and circulation and increase resource efficiency of newly developed products by 15% or more. (Compared to FY2014)	23.1% improvement	✔
	(5) Maintain over 90% resource reuse rate of business ICT equipment.	91.5% achieved	✔

Our Business

Theme / FY2018 Targets	FY2017 Performance	FY2017 Status
Reduce greenhouse gas emissions throughout the value chain		
(6) Reduce greenhouse gas emissions in our business facilities		
Reduce greenhouse gas emissions by 5% or more compared to FY 2013.	16.6% reduction	✔
Improve PUE*2 of our major data centers by 8% or more compared to FY 2013.	6.2% improvement	✔
Improve energy intensity by an average of 1% or more each year.	3.2% improvement	✔
Increase usage of renewable energy to at least 6%.	7.3% achieved	✔
(7) Drive activities to reduce CO_2 emissions in the supply chain.	Through major business partners, requested secondary suppliers (over 38,000 companies) to implement CO_2-reduction activities.	✔
(8) Reduce CO_2 emissions per sales from transport by an average of 2% or more each year.	10% reduction	✔
Reduce environmental impact		
(9) Reduce water consumption by 1% in total (128,000 m^3).	1.9% reduction	✔
(10) Reduce chemical pollutant (PRTR) release to less than the average level of FY 2012–2014 (20.7 t).	16.7 tons	✔
(11) Reduce the amount of waste to less than the average level of FY 2012–2014 (25,568 t).	21,905 tons	✔

*1 Key green technologies: Technologies for reducing power/energy, improving man-hour efficiency, conserving resources, and resolving social issues.
*2 PUE (Power Usage Effectiveness): An indicator of the efficiency of electric power usage by the Data Center. It is a value calculated by dividing the Data Center's total electric power consumption by the electric power consumption of servers and other ICT devices. Values indicate higher efficiency the closer to 1.0 they become.

Related Links

- Fujitsu Group Environmental Protection Program (Stage VII)
  http://www.fujitsu.com/global/about/environment/approach/plan/stage7/index.html
- Fujitsu Group Environmental Protection Program(Stage VI)
  http://www.fujitsu.com/global/about/environment/approach/plan/stage6/index.html
- Fujitsu Group Environmental Protection Program(Stage V)
  http://www.fujitsu.com/global/about/environment/approach/plan/stage5/index.html
- Fujitsu Group Environmental Protection Program(Stage IV)
  http://www.fujitsu.com/global/about/environment/approach/plan/stage4/index.html
- Fujitsu Group Environmental Protection Program(Stage III)
  http://www.fujitsu.com/global/about/environment/approach/plan/stage3/index.html

Environmental Management System

We are continuously working to improve our ISO 14001*1-based environmental management systems and to promote group-wide environmental management.

*1 ISO 14001:
Environmental Management Systems (EMS) standard determined by the International Organization for Standardization (ISO). Certification is granted to environmentally aware organizations that develop systems for ongoing reductions in their environmental footprint.

Fujitsu Group's Environmental Management Systems

Fujitsu 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 Japanese consolidated subsidiaries at the end of FY 2004, we expanded this effort to include overseas subsidiaries and acquired global integrated certification in FY 2005.

By constructing EMS along with a global supply chain, the Fujitsu Group has further strengthened its global governance. This also allows the Group to promote even more efficient and highly effective environmental activities; not only grasping our achievement status for the Fujitsu Group Environmental Action Plan but also collecting a wide variety of information from all Group companies, such as legal compliance, emergency response, environmental communication and preservation activities, and conducting management reviews.

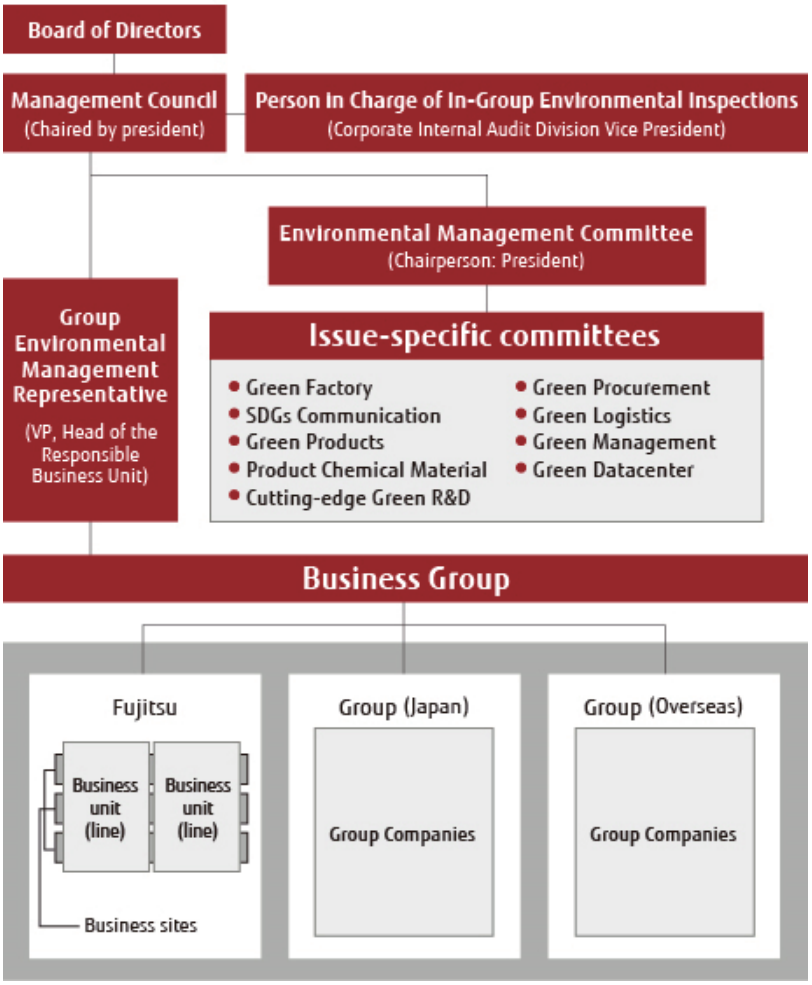
Environmental Management Framework

To conduct a comprehensive discussion of the Fujitsu Group's environmental management, we have established an Environmental Management Committee chaired by the president. This committee is considering medium-to-long term issues, implementing policy decisions, and discussing methods for handling and sharing operating risks and opportunities from climate change, all with the aim of raising the level of the group's environmental management and strengthening its governance. Based on that, final decisions on environmental management at the Fujitsu Group are made at meetings of the Management Council and reported to the Board of Directors.

Subordinate to the Environmental Management Committee, we have organized environmental issue-specific committees composed of concerned parties that go beyond the framework of business groups and business units. Through this promotion structure, we are making it possible to quickly diffuse initiatives on these issues throughout the group.

We have also established an Environmental Management Working Group (WG) subordinate to the Green Management Committee, an issue-specific committee. The Environmental Management WG is working to unify global information transmission and strengthen environmental management systems (EMS) activities.

Environmental Management Framework (as of March 2018)



Configuration and Operation of 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 EMS construction 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 2018, the Fujitsu Group has acquired global integrated ISO 14001 certification for a total of 120 companies of Fujitsu and its Japanese group companies, as well as for 12 overseas Group companies. Our 15 overseas consolidated subsidiaries that are not production base sites have constructed and are operating an EMS in line with Fujitsu Group environmental policies. In this way, we have established an environmental management structure across the whole Group.

Environmental Management Systems Operational Status

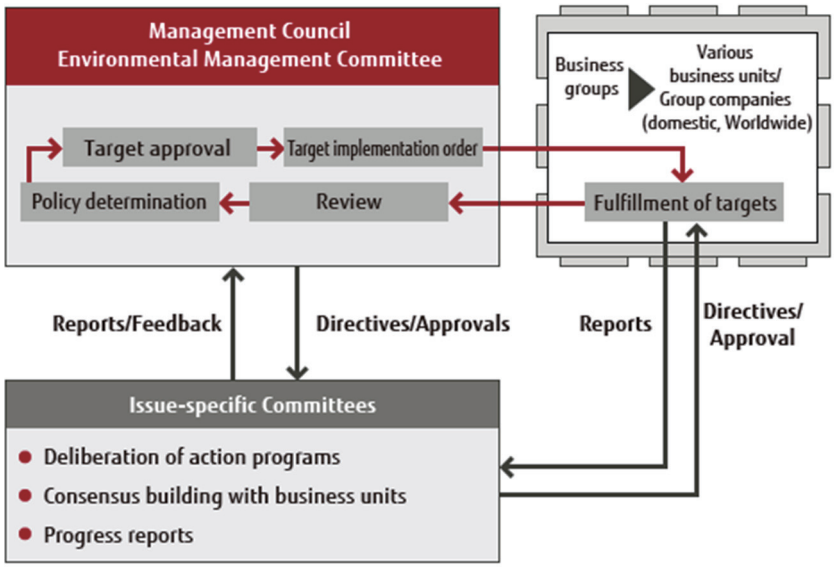
		FY 2015	FY 2016	FY 2017
Internal audit	Findings	130	145	122
External audit	Findings	2	4	8
	Opportunities for improvement	82	103	126

Activity Flow

The Environmental Management Committee proposes, deliberates, and decides upon environmental matters relating to all Group companies. It determines the directions to be taken for energy usage volume, CO2 emissions reductions, ways to address environmental risk, and other medium-to-long term matters important to environmental management at an overall level. The Environmental Management Committee also conducts environmental management reviews and has approval authority for the Fujitsu Group Environmental Action Plan.

The issue-specific committees are subcommittees set up by the Environmental Management Committee to make a dedicated response to specific issues. Their main role is to discuss targets for the Environmental Action Plan check on the progress being made for each target and promote further activity toward achieving them. Issue-specific committees' progress reports are approved and directed by the Environmental Management Committee.

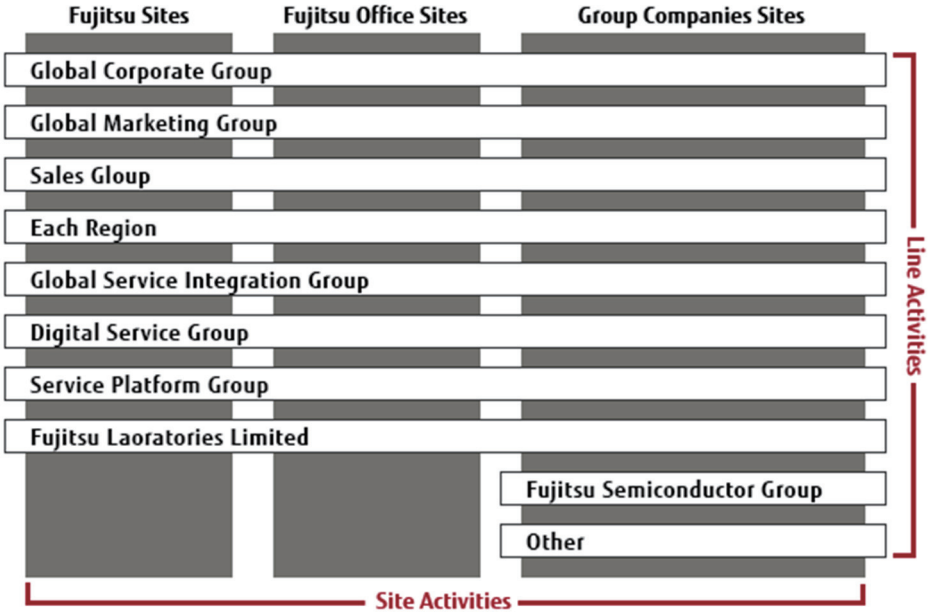
Activity Flow



Management Based on the Line/Site Matrix Structure

The Fujitsu Group carries out its environmental management along the same lines as its corporate management. To this end, we are pursuing environmental management within a matrix structure combining (1) "line activities" directly tied to the business operations of various divisions and companies (including eco-friendly product development 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, along with minimizing the environmental burden of our own business activities, we promote reductions in environmental burdens more generally through the sale of our products and services.



ICT-based EMS

Aiming at efficiency improvement and visualization of its environmental management, the Fujitsu Group actively utilizes its own environmental management tools that take full advantage of ICT.

EMS Applying ICT

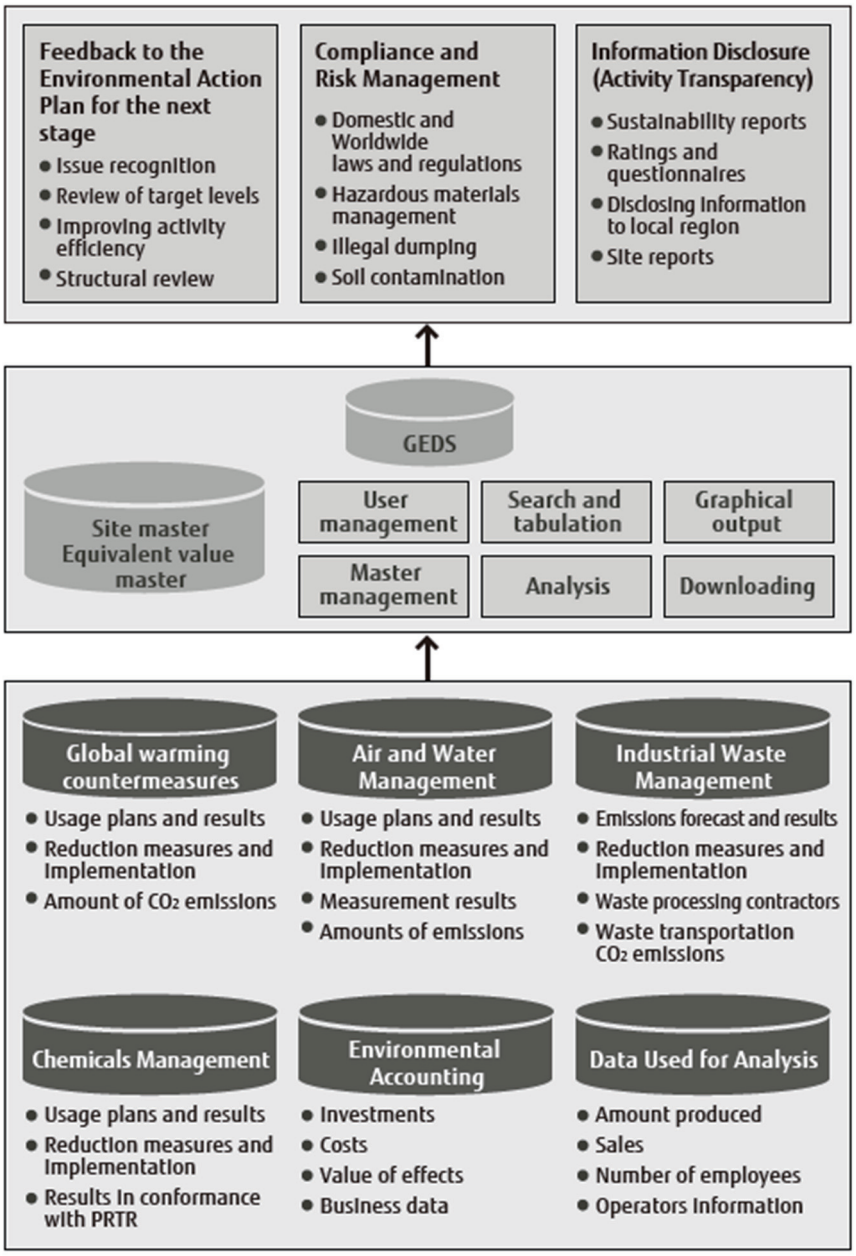
The Fujitsu Group uses proprietary environmental management tools that make the most of ICT. For example, we use the Global Environment Database System (GEDS), which can centrally manage data on plans, results, implementation status, and other matters for Fujitsu Group business sites throughout the world, and the ISO 14001 Green Management System (GMS), which supports EMS operation by centrally managing data on compliance and risk management conditions, to make environmental management efforts more efficient and visible.

In addition, the communications platforms of all Fujitsu Group companies are used for EMS operations. Video conference systems, for example, are used for regional seminars and other forms of smart communication for EMS operation.

Use of the Global Environment Database System

The Fujitsu Group uses the Global Environment Database System (GEDS) to collect the environmental burden (performance) information for Fujitsu Group companies and business sites and to manage plans, results, and policy information uniformly.

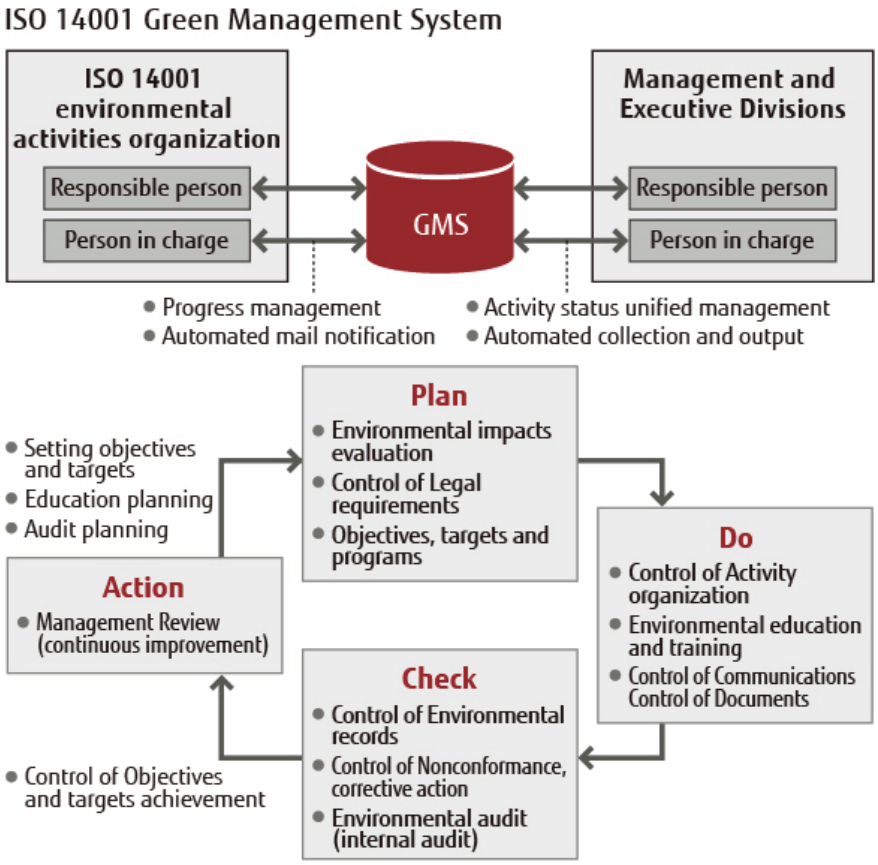
Global Environment Database System



Use of the ISO 14001 Green Management System

The ISO 14001 Green Management System (GMS) is used to exercise unified control over the operational status of the EMS with regard to improvements in and conformance issues relating to findings from internal audits, communications activities, direct and indirect effects identified in environmental impact assessments, and the setting of environmental management objectives and targets.

GMS enables corrective measures and objectives to be soundly managed, and effectively ensures continual improvement of the activities with reduced risks.



Implementing Environmental Audits

Internal Audit Implementation and Results

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

In FY 2017, we carried out internal audits for factories, offices, and other facilities at 356 sites in Japan and 19 overseas. For these audits, we scrutinized the results of the FY 2016 internal audit and external audit, took the opinions and instructions of the Environmental Management Committee into consideration, and found three major focal points: (1) compliance, (2) operational control, and (3) organizations operating original EMS. There were 122 total findings. Items related to ISO14001:2015 accounted for roughly 40% of all the findings (both Japan and overseas). There were also many findings relating to methods for managing chemical substances and industrial waste. Overseas, receiving cooperation from external experts thoroughly knowledgeable in local laws and regulations and operation, we carried out internal audits with the objective of strengthening compliance.

An internal audit being conducted overseas

External Audit and Results

To maintain our ISO 14001 certification, we are carrying out external audits by a certifying body. In FY 2017, we were audited in Japan by the Japan Audit and Certification Organization for Environment and Quality (JACO). Outside Japan, we were audited by DNV GL Business Assurance Japan K.K.

As a result, 71 areas, for our organizations in Japan, and 55 areas, for our overseas Group companies, were pointed out as opportunities for improvement. Eight minor nonconformities were identified at our overseas entities. We have completed corrective actions against these matters as of the end of FY 2017. Moreover, external audit findings on these were shared throughout the Group in order to help efforts to prevent recurrences.

These audits were carried out, and as a result of the judgment of the two certifying bodies, we were able to acquire ISO 14001:2015 certification.

Status of Environmental Compliance

The Fujitsu Group committed no major violations of environmental laws and caused no accidents that had any major impact on the environment in FY 2017.

However, there were complaints about the noise from the factory, but we took appropriate measures to resolve these issues

Green Procurement

To provide customers with products and services that have a light environmental footprint, we are implementing green procurement in partnership with our business partners.

Procurement Activities Based on Green Procurement Direction

The Fujitsu Group summarized what it asks of its business partners regarding purchasing green parts, materials, and products in the "Fujitsu Group Green Procurement Direction." Together with partners in Japan and overseas, the Group implements green procurement activities and promotes procurement from business partners that fulfill the green procurement requirements (see below).

Using a Fujitsu Group Environmental Survey Sheet, we conduct annual monitoring of partners' status with regard to environment management system, CO_2 emission reduction, biodiversity preservation and water resource preservation activity, and ask them to take appropriate measures.

- Fujitsu Group Green Procurement Direction
  http://www.fujitsu.com/global/about/procurement/green/

Green procurement requirements for business partners

Requirements	Materials/parts business partners*	Non-materials/ parts business partners
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 Aquatic resource preservation initiatives	○	○

* **Materials/parts business partners:** Business partners who supply components of Fujitsu Group products or OEM/ODM products

Establishment of Environmental Management Systems

We request our business partners to establish environmental management systems (EMS) to provide a backbone for ensuring that they independently and continuously implement environmental-preservation activities. In principle, we would like them to have third party-certified EMS. Where this is not possible, we ask them to build EMS incorporating the PDCA cycle suited to their circumstances.

CO_2 Emission Reduction Initiatives

The Fujitsu Group asks our business partners, as well, to engage in 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. Furthermore, we also ask them to collaborate with external organizations, where possible, and likewise encourage their own suppliers in an effort to expand the initiatives outside their respective businesses. Our annual Supply Chain Business Continuity Surveys give us a clear picture of how business partners are responding to a variety of climate-change risks, including tsunamis, floods, and torrential rains.

Acquiring and Managing Information on Chemical Substances Contained in Products

Countries around the world are establishing legal regulations governing chemical substances contained in products, including the RoHS directive[*1] and the REACH regulation.[*2] The scope of the regulations continues to expand, as well, adding more and more substances, products, and applications on a nealy daily basis.

The Fujitsu Group is investigating and acquiring information on chemical substances contained in products by using chemSHERPA[*3] as the standard format. We share our findings with other Group companies via our internal system and allow relevant parties to access the information whenever necessary. We have established a system for fast response to revisions of laws/regulations and enactment of new legal systems.

*1 RoHS directive:
Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment
*2 REACH regulation:
Regulation for Registration, Evaluation, Authorization, and Restriction of CHemicals
*3 chemSHERPA:
Chemical information SHaring and Exchange under Reporting PArtnership in supply chain

Establishment of a Chemical Substance Management System (CMS) for Product Substances

In addition to acquiring information on chemical substances contained in products from business partners, the Fujitsu Group also asks its business partners to establish a Chemical substances Management System (CMS) based on the industry-standard JAMP[*4] 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 chemical substances contained in products.

The Group also carries out CMS audits in order to confirm appropriate establishment and operation of CMS. Specifically, Fujitsu's auditors implement on-site confirmation of the management status of chemical substances contained in products. If there are any inadequacies, auditors make requests for corrections and provide support for establishment. Moreover, even after the establishment of CMS, we continually confirm the operation status through periodic audits.

*4 JAMP:
Joint Article Management Promotion-consortium

Response to Environmental Risks

Initiatives to Minimize Environmental Risks

In order to minimize risks related to environmental pollution, destruction of ecosystems, and climate change throughout our entire value chain, the Fujitsu Group continues actions such as risk analysis/support based on a company-wide risk management structure and environmental load reduction activities based on strict voluntary control values which are more stringent than those designated by laws and regulations.

Environmental Pollution Prevention and Preparations for Climate Change Risks Throughout the Value Chain

Fujitsu Group is striving to prevent the occurrence of environmental pollution and conserve the environment in the entire value chain. We are preparing rules that designate a response to accidents and emergency situations in case of the rare occurrence of environmental risks and educating employees on how to carry them out correctly.

Additionally, there is the 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. We have formulated a business continuity plan and are devoting effort to continually revising and improving the plan.

Furthermore, the implementation of stricter regulations for greenhouse gas emissions and a carbon taxes creates a risk of increasing the energy cost incurred by the Fujitsu Group, as well as the cost required for measures aimed at reducing greenhouse gases. 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 risk analysis/response within our company-wide risk management structure. Moreover, based on the FUJITSU Climate and Energy Vision, we are working to achieve net zero CO_2 emissions by 2050 and to contribute to mitigation/adaptation for climate change through business.

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 is conducted based on these controls. Efforts are made to appropriately process dust and soot, sulfur oxide, nitrogen oxide, and other harmful substances, and reduce emissions. Furthermore, we are reducing the atmospheric discharge 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 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). Regarding refrigerant chlorofluorocarbons used in air conditioning facilities (freezers, etc.), we have implemented leakage countermeasures and are transitioning to non- chlorofluorocarbon gas when updating facilities.

Results for complete elimination of ozone-depleting substances	
Ozone-depleting substances	**Timing 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 Water Pollution

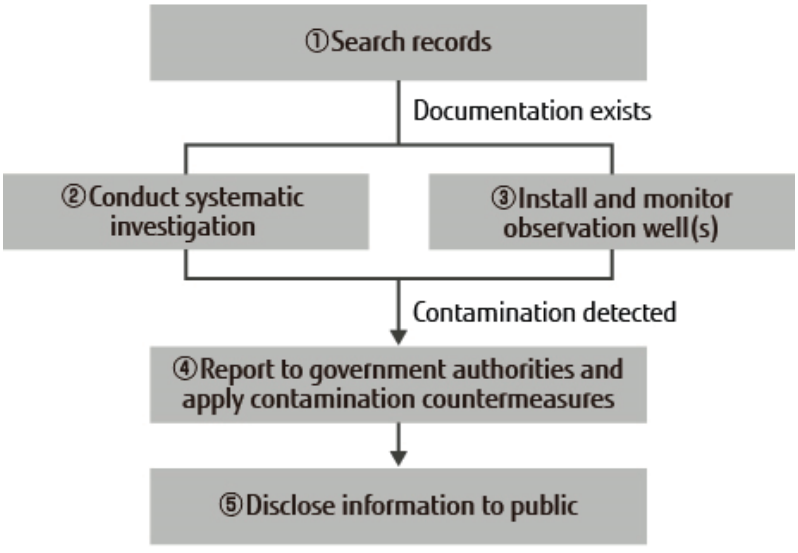
In order to preserve the water quality of surrounding waterways, including rivers, groundwater and sewers, we have set voluntary controls that are even tougher than legal mandates, and conduct regular measurement and monitoring on this basis. We recover and recycle chemicals used in production processes,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

Preventing Pollution of Soil and Groundwater

We have established rules for soil and groundwater surveys, measures and disclosure. 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 disclosing information in partnership with administrative agencies.

As of FY 2017, 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-lifting aeration, etc.

Monitoring the Impact of Groundwater Contamination Outside of Fujitsu Sites*



* We monitor groundwater contamination near our sites, which is the largest risk for soil and groundwater pollution.

Business Sites Where Soil or Groundwater Contamination Has Been Found

Site Name (Location)	Cleanup and Countermeasure status	Monitoring Well Maximum Value (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.	Cis-1, 2-dichloroethylene	2.7	0.04
Oyama Plant (Oyama City, Tochigi Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	4.076	0.04
		Trichloroethylene	0.372	0.03
FDK Sanyo plant (Sanyo-Onoda City, Yamaguchi Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Trichloroethylene	0.045	0.03
FDK Washizu Plant (Formerly FDK Energy) (Kosai City, Shizuoka Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	0.42	0.04
		Trichloroethylene	0.24	0.03
		Tetrachloroethylene	0.16	0.01

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 the original Chemical Information System called "FACE" and working to appropriately control and reduce emissions at our business sites.

● Fujitsu Group Environmental Action Plan (Stage VIII): Reducing Chemical Substances Emissions（P120）

Furthermore, with regard to chemical substances included in products, we have determined banned substances and are working to thoroughly control them, including both inside the company and with business partners.

● Green Procurement（P74）

Appropriately Processing Waste

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

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 carries out PCB waste interim storage and disposal under government supervision, and are carefully carrying out processing based on JESCO plans.

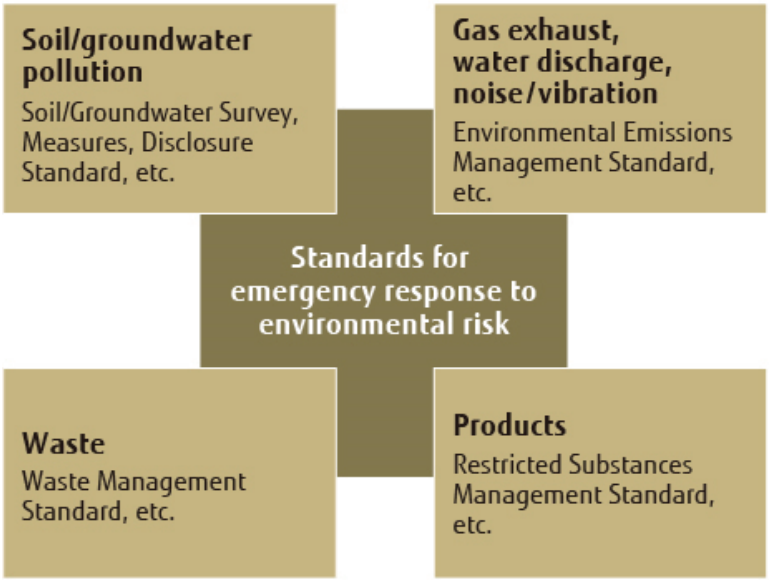
Conserving Biodiversity

In FY 2009, we settled on the Fujitsu Group Biodiversity Action Principles, and promote them based on the two pillars of reducing the impact of our activities on biodiversity and contributing to the creation of a society that conserves biodiversity.

Environmental Risk Standards

The Fujitsu Group is working to reduce environmental risk in advance and to contain any incidents if and when they do occur. We have established environmental risks standards which define response at the time of accidents or emergencies related to environmental risk. Specific examples of these standards include "Environmental Emissions Management Standard" and "Waste Management Standard." The system of environmental risk standards is listed below.

System of environmental risk standards



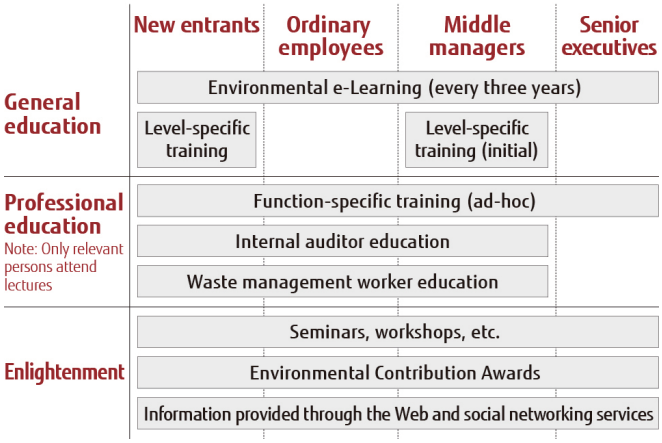
In-House Educational and Enlightenment Activities

To ensure that our environmental management takes firm root through the participation of all employees, the Fujitsu Group believes it essential to increase the environmental awareness of each and every employee to a point where it promotes environmentally friendly practice. Based on this belief, the Group has been carrying out comprehensive environmental training.

Carrying Out Comprehensive Environmental Education

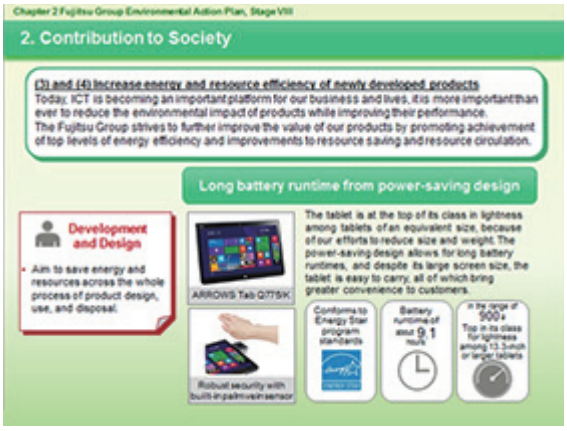
We have all our employees take E-learning to acquire a basic understanding of environmental management. Education is provided to new entrants and to managers, as well as by department. We also implement professional education for internal auditors, waste management personnel and others for employees in charge of work related to the environment.

Fujitsu's Environmental Education System



Promoting Environmental e-Learning for all Group Employees

The Fujitsu Group offers environmental e-Learning to all of its employees. The purpose of the training is to promote understanding and practical implementation of the background and content of our 8th Environmental Action Plan.



Environmental e-Learning program screenshot

Raising Awareness through an In-House Award Scheme

Holding the Environmental Contribution Award

To raise the environmental awareness of employees at all Fujitsu Group companies, we have operated an Environmental Contribution Awards scheme to recognize business and activities contributing to the environment. The awards scheme is open to all employees and has been operated every year since 1995.

In the field of contributing to customers and society, this award recognizes accomplishments such as products which use innovative energy-saving technology to contribute to reducing the amount of power used by the customer, increases in logistics efficiency which lead to improvements in traffic pollution, and IoT services that contribute to the prevention of heatstroke. Furthermore, in the field of initiatives within one's own business activities, in addition to achieving reduced environmental load by implementing advanced technology based on onsite expertise, awards were given to paperless initiatives in conjunction with workstyle transformation, the use of renewable energy at overseas offices, and initiatives for promoting the use of EVs as company cars.

Winners of the FY 2017 Environmental Grand Prize (Environmental Contribution Award)

1. Installed a liquid immersion cooling system

The Japan Automobile Research Institute installed the Fujitsu Group's first PC cluster using a liquid immersion cooling system. This marked the first use of the system outside of field trials. Compared to conventional air-cooling system, our system reduces power consumption by a maximum of 40%.

2. Reduced amount of water used at factory of Shinko Electric Industries Co., Ltd.

For wet processes which use large amounts of water, we used equipment such as ultrasonic flowmeter to conduct a thorough survey of water usage amount. We performed detailed analysis for the required amount of water usage for each process and then reduced the amount of water supplied by considering quality elements such as revision of water pressure and nozzle shape. We also surveyed the water quality of waste water and suppressed the amount of water supply during desalination by using waste water with a low degree of pollution as recycled waste water. Overall, we achieved significant reductions in the amount of water used.

・ Reductions in amount of water
http://www.fujitsu.com/global/about/environment/operation/water/

In-House Environmental Seminar and Workshop

Believing that the first step toward the realization of a sustainable society is to be aware of social and environmental issues and international trends, we conduct environmental seminars for our employees periodically. In FY2017, the following five events were held.

Feb. 2018: "2nd Nikkei BP Industrial Sectors Seminar (Retail & Distribution)"

To better understand the challenges and changes facing retail & distribution divisions from the perspective of sustainability, Nikkei BP presented the latest in company trends, while Tatsuyuki Negoro, a professor at Waseda Business School, talked about the sharing economy, and Motohiro Honma of the Japan Weather Association spoke on weather forecasting and the use of AI in demand forecasting.


Tatsuyuki Negoro


Motohiro Honma

Jan. 2018: "1st Nikkei BP Industrial Sectors Seminar (Production & Manufacturing)"

To better understand the challenges and changes facing the production & manufacturing sectors from the perspective of sustainability, Nikkei BP presented the latest in company trends, while Omron's Shinichi Kodama spoke on innovations his company is promoting on the production floor, and Hironori Hibino talked about new production management systems in the era of IoT.


Hironori Hibino


Shinichi Kodama

Dec. 2017: Fujitsu In-house Photo Exhibit "Are You Familiar With the SDGs?"

Poverty, food, heath, education, gender.... To get employees to think about sustainable development goals, Fujitsu held an in-house exhibition of photographs that express in a real way the challenges our world faces.

Dec. 2017: Seminar "An Environmental War Without Weapons–Survival Strategies for Japan and It's Companies"

This seminar covered current world affairs and policy trends related to climate change. Ryuichi Teshima, former NHK Washington Bureau Chief, provided an explanation of intelligence regarding climate change issues, while Yusuke Matsuo from the Institute for Global Environmental Strategies presented international trends and changes in the business environment from COP23.


Ryuichi Teshima


Yusuke Matsuo

Jun. 2017: Environment Month Seminar "Global Warming in the Eyes of a Weather Forecaster"

An environmentally themed seminar was held for employees in June, the Environment Month in Japan. We invited NHK Good Morning Japan weathercaster Nobuyuki Hirai to speak in an easy to understand fashion from his perspective as a weather forecaster about such topics as climate trends related to global warming and the response that will be required of us, and expectations for ICT companies.

Nobuyuki Hirai

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Fujitsu Group Environmental Action Plan (Stage VIII)

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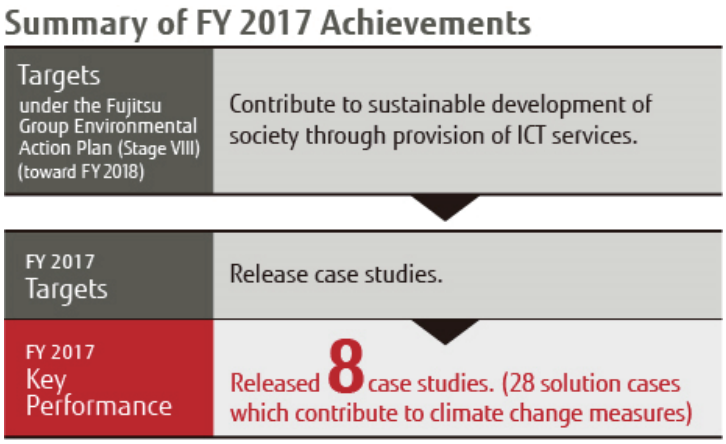
Contributing to a Sustainable Society through ICT Services

Our Approach

The effort to "Contribute to sustainable development of society through provision of ICT services" is one of the goals in the Fujitsu Group's Environmental Action Plan (Stage VIII). With the United Nations having adopted a set of Sustainable Development Goals (SDGs) in 2015, thereby laying out clear international targets, the Fujitsu Group is now aiming to contribute even more to the sustainability of customers and society.

Bringing that vision of a sustainable society to fruition will require initiatives to tackle a wide variety of social and environmental issues, ranging from combating global warming through reductions in GHG emissions to saving natural resources, preserving biodiversity, stabilizing food supplies, responding to urbanization, and protecting against disasters. Information and communication technology (ICT), which helps optimize, streamline, and automate processes in a diverse mix of fields, has the power to drive solutions to the problems that society and the natural environment are facing. By leveraging its ICT services and working with customers, the Fujitsu Group is determined to play an important role in achieving SDGs on a global scale.

FY 2017 Performance and Results



Publishing Case Studies of Contribution to Sustainable Growth for Society through the Provision of ICT Service

On our website, Fujitsu published eight new case studies of contribution including “solutions for breaking away from conventional administrative styles which use dedicated financial equipment and realizing increased administrative efficiency and paperless business through the use of tablets, etc.” and “solutions for providing SaaS services and increasing the efficiency of power consumed for conventional servers and operation management processes.”

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Efforts toward Sustainable Development of Society

Case Studies

The Fujitsu Group contributes to the realization of a sustainable society through the provision of various services and solutions.
http://www.fujitsu.com/global/about/environment/society/sustainability/sdgs-case-studies/index.html

GHG Emission Reduction through the Provision of ICT

ICT can help reduction of the amount of energy and resources used, movement of people and materials, and office space required for business operations, which eventuates into a reduction in GHG emissions. The Fujitsu Group has been increasing the contribution of its customers and society as a whole on the reduction of GHG emissions, by quantitatively assessing the amount of GHG emissions

http://www.fujitsu.com/global/about/environment/society/sustainability/contribution/index.html

Provision of Environmental Solutions

We offer our customers solutions that support implementation and advancement of environmental management to support their competitiveness and reduce environmental burden. (link to Japanese site)

http://www.fujitsu.com/jp/solutions/business-technology/sustainability/eco/

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GHG Emission Reduction through the Provision of ICT

Main Activities in FY 2017

GHG Emission Reduction through the Provision of ICT

Through the provision of ICT, the Fujitsu Group is working to create innovations in wide-ranging areas of society, including improvement of efficiency in energy usage, greater efficiency in production activities, and reduction in the movements of people and goods. By doing so, we aim to contribute to the reduction of GHG emissions. We believe that the use of ICT by large numbers of customers will reduce GHGs in society overall, while leading to ongoing business growth for the Fujitsu Group as well.

The Fujitsu Group is working to quantitatively visualize - and also expand - the contribution to GHG reductions from the ICT used by our customers. The Fujitsu Group recognized 28 new cases of environmentally conscious solutions in FY 2017, bringing the cumulative total to 517 and helping reduce total CO_2 emissions by 7.31 million tons.

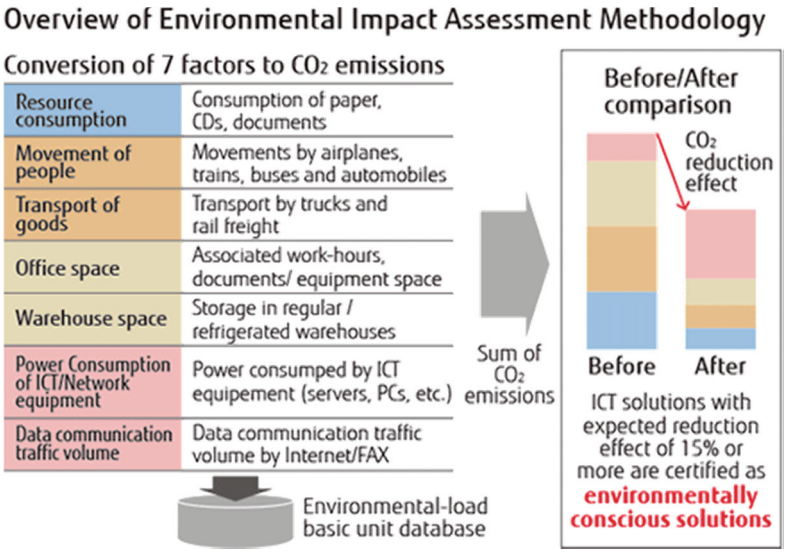
Case Studies

http://www.fujitsu.com/global/about/environment/society/sustainability/contribution/casestudy/index.html

Method to calculate the contribution to GHG reduction

At the Fujitsu Group, we have quantitatively assessed the environmental burden reduction effect of our ICT (in CO_2 emissions) using an environmental impact assessment method developed by Fujitsu Laboratories Ltd. in 2004. More than 500 cases have been assessed to date, and CO_2 emissions reduction effect per one user, one client, or revenue (CO_2 reduction amount basic unit) using the data accumulated.

Fujitsu measures annual GHG reductions from solution user count, client count, or annual sales.



Environmental Impact Assessment Method for Solution Services

http://www.fujitsu.com/global/about/environment/society/sustainability/contribution/certification/index.html

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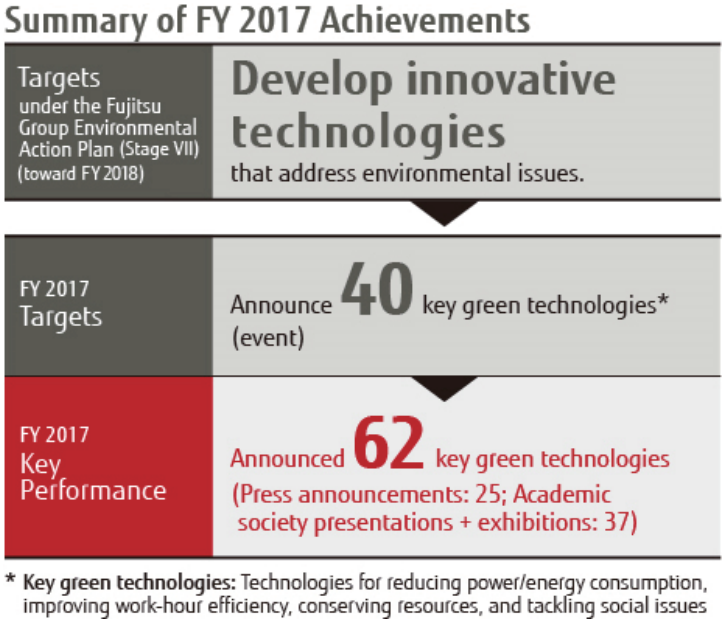
Developing Innovative Technologies for Solving Environmental Issues

Our Approach

Fujitsu Laboratories, the core research and development (R&D) organization in the Fujitsu Group, recognizes environmental contribution as a priority theme and conducts R&D in diverse fields ranging from advanced materials, next-generation devices, computers, networks, and ICT systems to the creation of next-generation solutions, services, and business models–all with the goal of contributing to a sustainable society.

Drawing on these efforts to develop innovative technologies and embracing its mission to create technologies that can help solve social and environmental problems, Fujitsu Laboratories promotes environmental activities ranging from CO2 emission reductions through energy conserving practices and work task-efficiency improvements to resource-saving initiatives, countermeasures for natural disasters, the preservation of biodiversity, and efforts to combat global warming.

FY 2017 Performance and Results



Showcasing Developed Technologies to the World

Fujitsu's Environmental Action Plan (Stage VIII) includes the objective of enhancing the company's ability to showcase the green-oriented technologies in its development portfolio to the public. In FY 2017, we advertised our ICT environmental value outside of the Group by giving presentations at press releases, academic society meetings, and exhibitions.

In terms of the SDGs, the technologies that Fujitsu announced in FY 2017 contribute primarily to five goals: “Ensure healthy lives and promote well-being for all at all ages” (Goal 3), “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” (Goal 9), "Make cities and human settlements inclusive, safe, resilient and sustainable" (Goal 11), "Take urgent action to combat climate change and its impact" (Goal 13), and “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss” (Goal 15).

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FY 2017 Development Performance (items appearing in the media)

1. "fipick," a direct device-to-device communication technology without the need for infrastructure
2. Technology for ultra-slim palm vein authentication
3. Development of "Digital Annealer" computational architecture for high-speed solving of combination optimization problems
4. Technology for using AI-powered chat to respond automatically to call center inquiries
5. Development of positive electrode material for lithium iron phosphate batteries possessing high voltage
6. Information-oriented networking technology for connecting participants in data distribution markets
7. Technology for embedding information to LED light and receiving information via smartphone cameras
8. AI-based technology to retrieve similar disease cases in CT inspections
9. Virtual machine control technology to improve server density of datacenter racks
10. Design technology for circuits and GaN-HEMT high-output devices using millimeter-wave bans
11. Technology for speeding up transaction processing on the blockchain
12. Technology using AI to estimate the degree of internal damage to bridge infrastructure
13. AI-based matching technology to calculate an optimal matching of children to daycare center
14. World's highest transmission density optical transceiver and high-speed energy efficient optical modulator technology
15. Development of a GaN-HEMT AC adapter for significantly reducing power consumption when charging mobile devices
16. Technology for automatically generating patch candidates for new bugs during program debugging
17. Technology using open data for visualization and analysis of municipality characteristics from the perspectives of environment, society, and economy
18. Technology for highly accurate estimation of ship performance (ship speed, amount of fuel consumed, etc.)
19. Wireless communication high-capacity technology for fifth generation mobile communications
20. Technology for using AI when processing measurement data of mass spectrometers
21. Security technology to safely connect blockchains
22. High accuracy tsunami Prediction technology which considers tsunami propagation characteristics unique to the region
23. WAN (Wide Area Network) acceleration technology utilizing FPGA accelerators
24. Development of the world's smallest sensor device supporting LPWA (Low Power Wide Area) communication that eliminates need for battery replacement
25. Technology for collecting/analyzing operation data from the entire cloud and then visualizing/adjusting operation of customer systems

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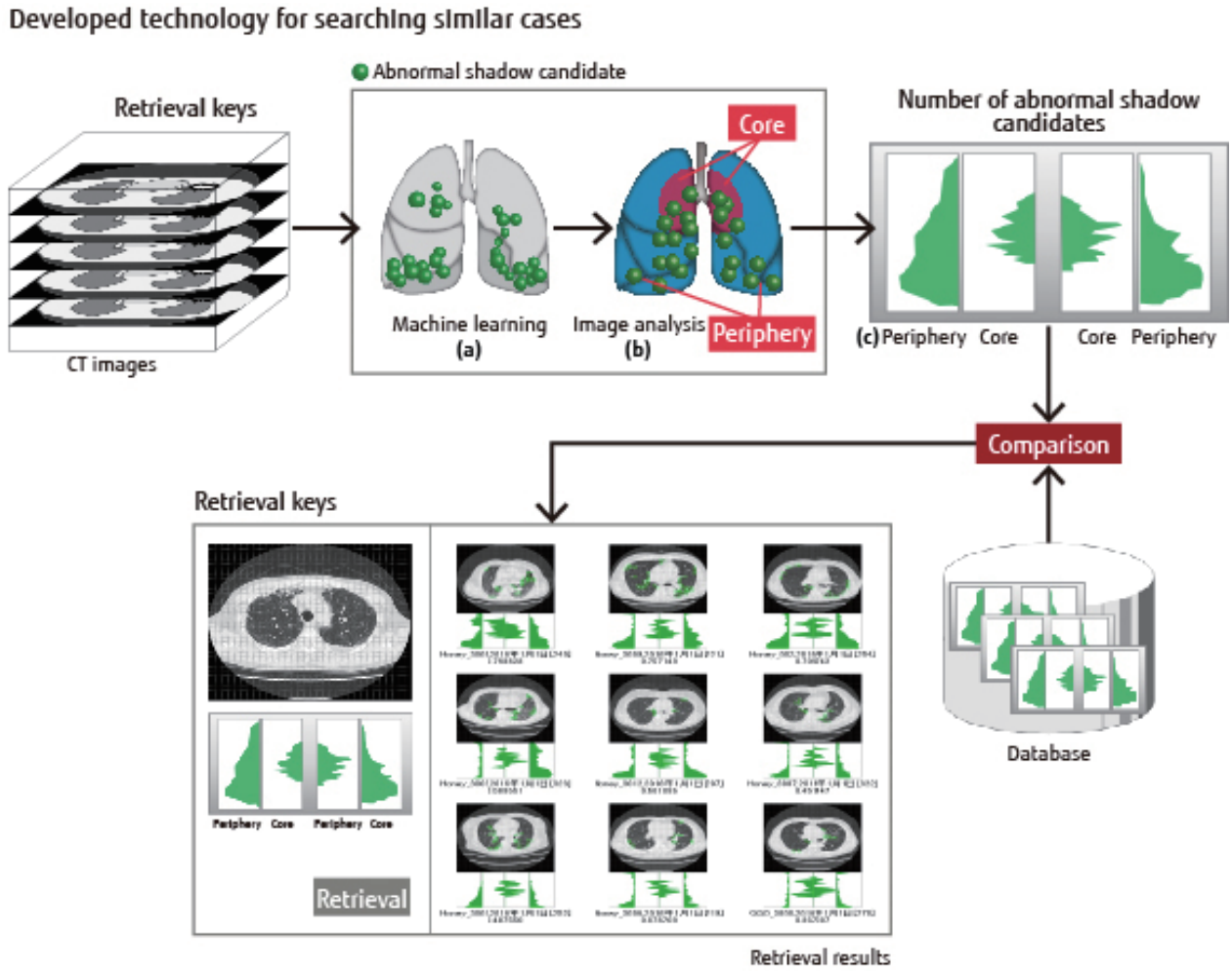
Main Development Initiatives in FY 2017

AI-based Technology to Retrieve Similar Disease Cases in CT Inspections

Previously, for early lung cancer and cases in which abnormal shadows are concentrated in a single location, doctors used technology which searched for similar cases based on CT images. However, for patients of diffusive lung disease such as pneumonia, abnormal shadows spread in a three-dimensional form throughout the entire organ. In such cases, it was necessary for doctors to confirm three-dimensional similarity. Accordingly, it took a long time for doctors to make a judgment.

Recently, Fujitsu Laboratories Ltd. developed CT inspection technology for searching cases with similar three-dimensional spreading of abnormal shadows from among databases of CT images taken in the past. First, the technology uses machine learning to identify abnormal shadow candidates from CT images (Figure (a)). Next, the technology divides the lung into core and peripheral ranges (Figure (b)) by successively estimating the border between the center and periphery based on relatively clear portions of the CT images. Finally, the technology plots a histogram along the body axis in the vertical direction (Figure (c)) for the number of abnormal shadow candidates existing in both the core and peripheral ranges and examines the characteristics of three-dimensional spreading in the abnormal shadows, thereby searching for similar cases.

The technology shortens the diagnosis time for cases which previously required a long time for doctors to make a judgment. Accordingly, the technology is expected to increase the efficiency of clinical procedures.



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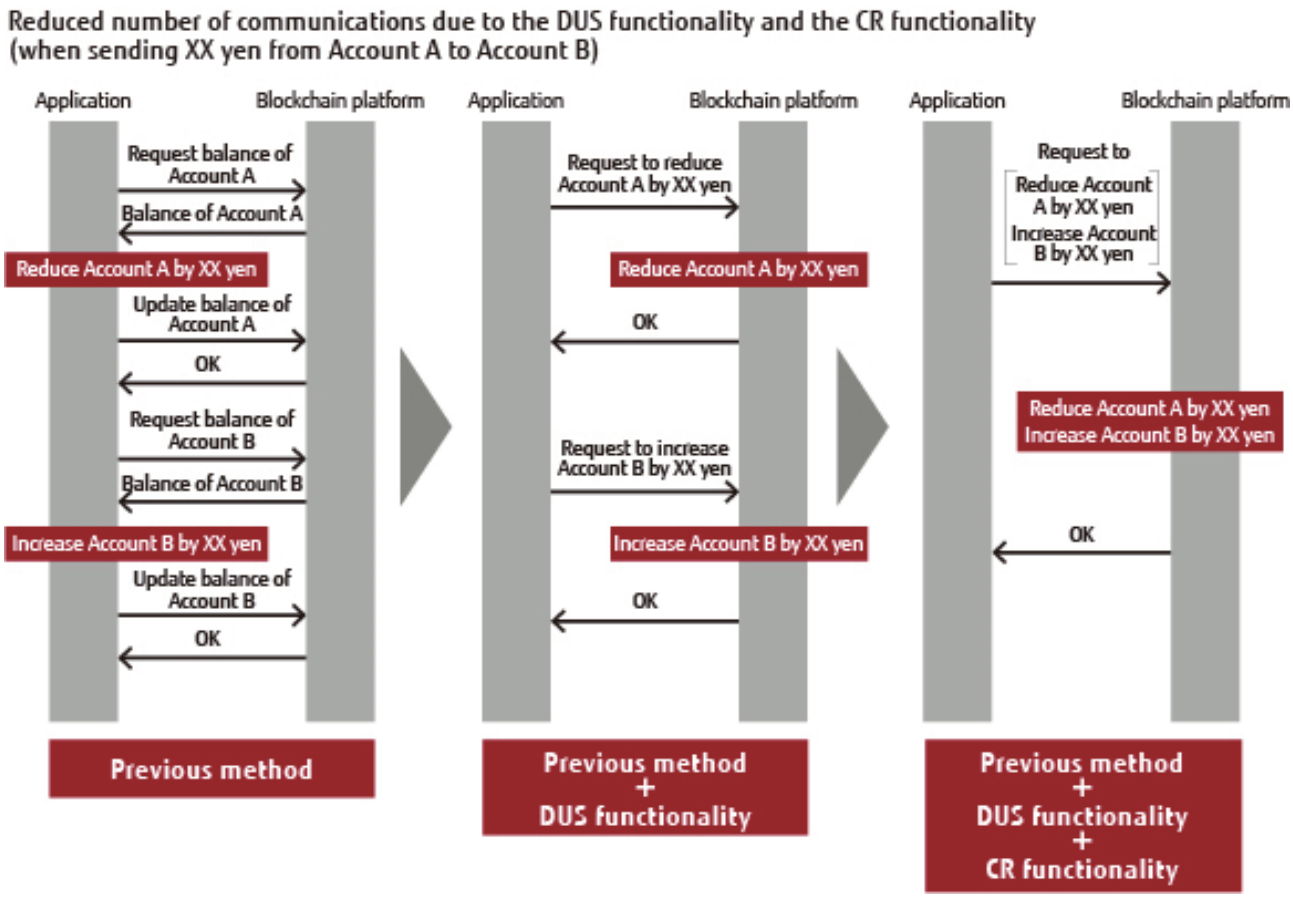
Technology for Speeding up Transaction Processing on the Blockchain

Blockchain technology makes it possible to achieve systems with superior resistance to tampering while also ensuring high transparency and reliability–all without the need for a centralized manager. Accordingly, there are high expectations for the use of blockchain in various industries such as finance.

Recently, Fujitsu Laboratories Ltd. succeeded in increasing efficiency for the previous bottleneck of communication processing between the application and blockchain infrastructure. By doing so, Fujitsu Laboratories developed two technologies (differential update (DUS) functionality and compound request (CR) functionality) for increasing the speed of transaction processing. Upon installing these technologies in Hyperledger Fabric v0.6.1(Note) and performing measurement, we achieved an increase in speed of approximately 2.7 times in transaction performance compared to previous methods. This technology makes it possible to apply blockchain technology to online transaction systems which require high performance.

(Note) Hyperledger Fabric v0.6.1:
Stable version of open source software framework in relation to blockchain (as of July 5, 2017)



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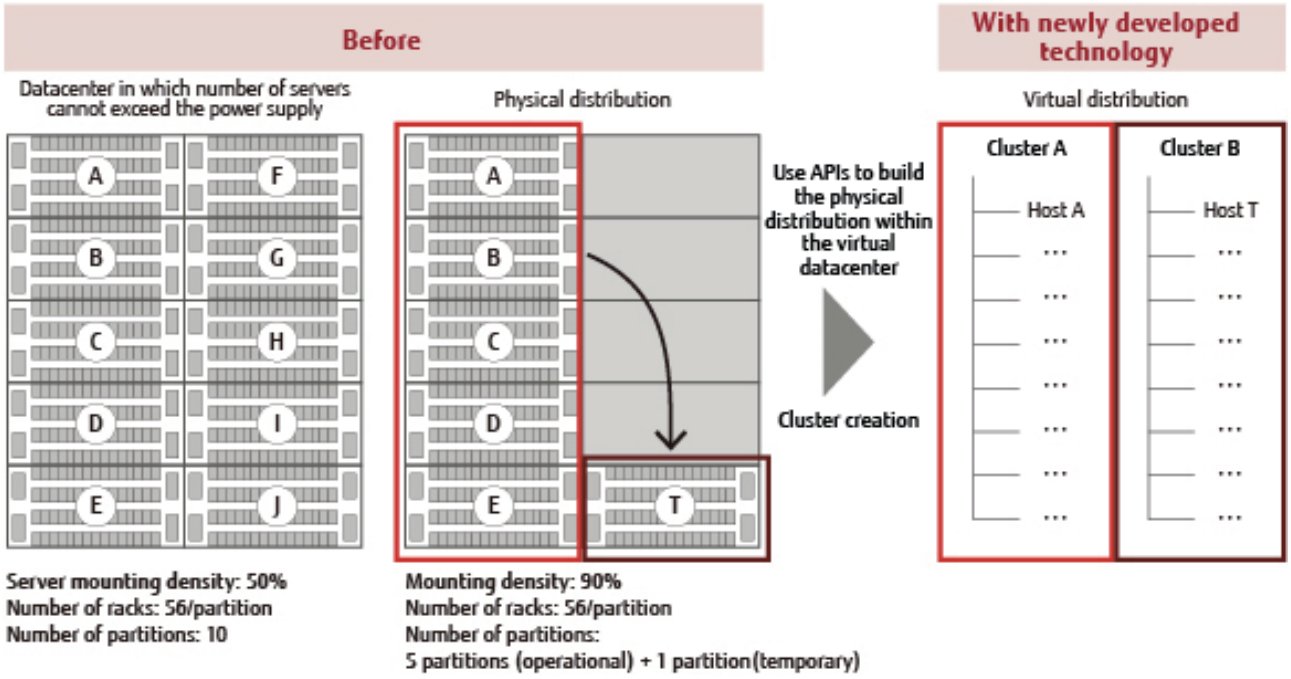
Virtual Machine Control Technology to Improve Server Density of Datacenter Racks

Currently, the number of servers mounted per rack at datacenters is decided by keeping the total value for the server rated power below the power supply amount of the rack. However, there are actually many cases in which the server load is about 10% to 50%. This means that the amount of power used per rack in proportion to load is low compared to the rated power.

Recently, Fujitsu Laboratories Ltd. developed virtual server control technology to achieve efficient server allocation. This technology establishes a partition made up of backup servers in the datacenter and then migrates virtual servers to the backup partition based on the physical distribution and power consumption of the virtual servers. This makes it possible to reduce datacenter space by improving the mounting density for racks with operating virtual servers. In one case with a server rack operation rate of 90%, calculation showed a space reduction of 40%.

VM control technology for increasing server mounting density in a datacenter



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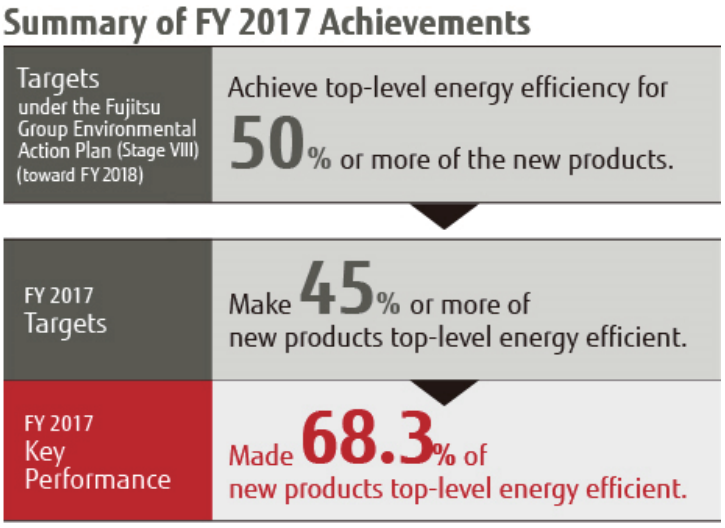
Development of Top-Level Energy Efficient Products

Our Approach

As ICT spreads, an increase in energy demand is expected in proportion to the higher performance and higher-density integration of servers and other ICT products. Accompanying this, energy-related regulations for ICT products are increasing in various countries and regions, such that energy efficiency is taking on importance within society in the form of energy label conformance and green procurement requirements.

The Fujitsu Group believes that we also must aim to improve the energy performance of products during their use, in order to reduce GHG emissions. In that context, we will actively implement energy-saving technologies and continue working to improve the energy efficiency of products. Through these and other product-development efforts, we will strive to reduce the power consumption of our offerings in customer usage settings.

FY 2017 Performance and Results



Actively Applied Energy-Saving Technology

We have set targets for the achievement of top-level energy efficiency based on the number of product series that are expected to be developed during FY 2016-18.

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 undertaking the aggregation of LSIs and the reduction of components.

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Achieved Top-Level Energy Efficiency for 68.3% of New Products

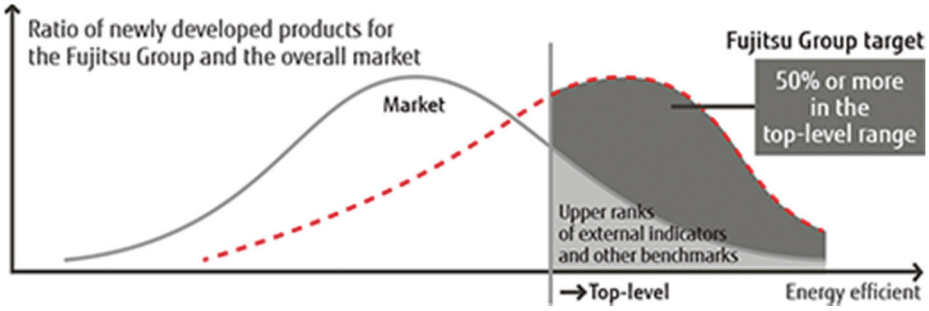
As a result of applying and expanding energy-saving technologies across our divisions in products including servers, PCs, network devices, and imaging devices, we were able to exceed by over 68.3% our 45% target (vs. FY 2017) for new product top-level energy efficiency.

Working toward Our Targets

To help "achieve top-level energy efficiency for 50% or more of the new products," one of the objectives in our Environmental Action Plan, we will continue to make even stronger development efforts to give our products - from leading items in each division to the rest of the lineup - top-level energy efficiency. In addition, we will deploy outstanding energy-saving technology and expand its application to products. Looking toward the future, we aim to push the development of advanced technology, which will contribute to revolutionary improvements in energy efficiency.

● **[Reference Information] Top-Level Energy Efficient Products**

Products, beginning with top-runner products (first in the world or industry, top of the world or industry), that meet criteria equivalent to the upper ranks of external indicators and other benchmarks of energy efficiency.



● **[Reference Information] Top-Level Energy Efficient Product Target Standards**

Fujitsu sets targets that recognize top-level energy efficiency standards in each product area compared with the market overall or with conventional products.

Example of Target Standards*1

Reference Level	Product Categories
ENERGY STAR criteria compliant	PCs, displays, imaging equipment, etc.
Top-level Top Runner achievement rate under the Energy Conservation Law	Servers, storage systems, etc.
Industry-leading energy efficiency	LSI, products for specified fields, etc.
Industry's highest-level battery life	Smartphones
Power consumption reductions over prior products/prior performance	Network products*2, electronic components, etc.

*1 Depending on product specifications, standard values differ even for products within the same category.
*2 A larger number of stars designate the top-level, concerning the products which are assessed by Ecology Guideline For the ICT Industry.

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Main Activities in FY 2017

ETERNUS DX series: Hybrid storage system for low power consumption

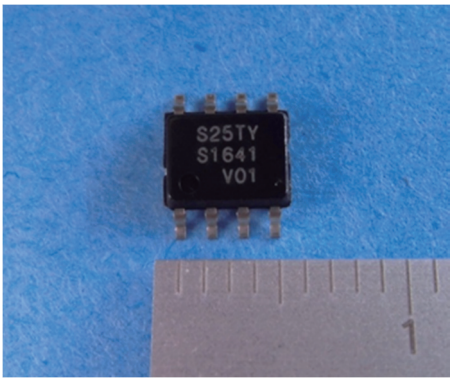
The ETERNUS DX series is a hybrid storage system that is equipped with a variety of technology and achieves low power consumption. The DX series can be equipped with a maximum of 4,608 disk drives. Also, the DX series is equipped with an eco mode function which utilizes MAID technology*1 for rotating the disks only when necessary. The eco mode function stops the supply of power to disks when the disk drive is not accessed for a certain period of time. Power consumption is reduced by a maximum of approximately 20%, while CO_2 emissions are reduced by approximately 3,000 kg*2 annually.

Other technologies used by the ETERNUS DX series for reducing power consumption are an industry-leading high-efficiency power supply unit and multi-level control of cooling fans rotation depending on the room temperature conditions. Furthermore, ETERNUS DX was one of the earliest systems to implement 12TB disks, 15TB SSD, and other of the latest high-capacity drives, thus achieving reduction of product installation area and improving energy efficiency.

*1 MAID technology: MAID is an acronym for Massive Array of Idle Disks. By stopping disk drives with a low usage frequency, this technology reduces power consumption and extends the lifespan of disk drives.

*2 Comparison conducted by our company between 1) an ETERNUS DX500 S4 that is constantly operated using 130 300GB disks and 80 1TB disks, and 2) when stopping power supply for 20 hours per day for the 1TB disks only.

FRAM enables low power consumption even in high-temperature environments



In order to achieve Society 5.0 (ultra-smart society), the Internet of Things (IoT) which connects people and physical devices is essential. However, one issue with IoT is striving to increase the efficiency of energy usage. Of course, the current digital society demands lower power consumption for semiconductor LSIs that fulfill an important role in the achievement of IoT. There is also increased demand for nonvolatile memory in which data is not lost even when power is turned off. Also, generally speaking, power consumption increases when LSIs are operated in a high-temperature environment. Therefore, optimal electronic parts are required particularly for products which are equipped with motor devices that generate heat.

In order to respond to these needs, Fujitsu Semiconductor Limited developed FRAM MB85RS256TY and MB85RS128TY to enable suppression of power consumption even in a high-temperature environment. FRAM is nonvolatile memory that possesses the features of "faster write speeds" and **"greater read/write cycle endurance."** In addition to developing new elements such as ferroelectrics and transistors which compose FRAM, Fujitsu Semiconductor conducted a review spanning from specifications to detailed circuit design. As a result, the company succeeded in decreasing power consumption by approximately 60% while expanding the maximum operating temperature by 40℃ compared to conventional products. The products developed by Fujitsu Semiconductor Limited can be operated at 125℃. These products are expected to be used in a wide range of industries including automotive equipment and industrial robots.

*For details, please visit
http://www.fujitsu.com/global/products/devices/semiconductor/memory/fram/lineup/

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FUJITSU Retail Solution TeamCAT/mini V3: Lightweight design and reduced power consumption

TeamCAT/mini V3 is a multidevice for shopping center tenants. The extensive ports for connection to peripheral devices make it possible to generate shopping center sales reports, use various payment services, and perform point management tasks from a single device. TeamCAT/mini V3 also features a compact body and can be installed in any location. Application development is also made easy by employing the latest multipurpose OS (Windows10 IoT Enterprise 2016 LTSB (64bit)) for the application software.

TeamCAT/mini V3 uses the Intel Atom x5-z8550 (4 core) for the CPU. This made it possible to reduce power consumption by about 30% when compared to conventional products (similar processing), even while being equipped with extensive external interfaces and high-capacity memory. For the lightweight design, the thickness of the PCB has been reduced to two-thirds of conventional products and the number of components has been reduced by utilizing the high-performance CPU. Moreover, conventional products are equipped with balancers to achieve balance with torque occurring when opening the thermal printer cover. In contrast, TeamCAT/mini V3 does not use a balancer; instead, it has a torque damper for reducing torque. These changes achieved a weight reduction of about 17% compared to conventional products.

● **Case Studies**
http://www.fujitsu.com/global/about/environment/society/energyefficiency/casestudy/index.html

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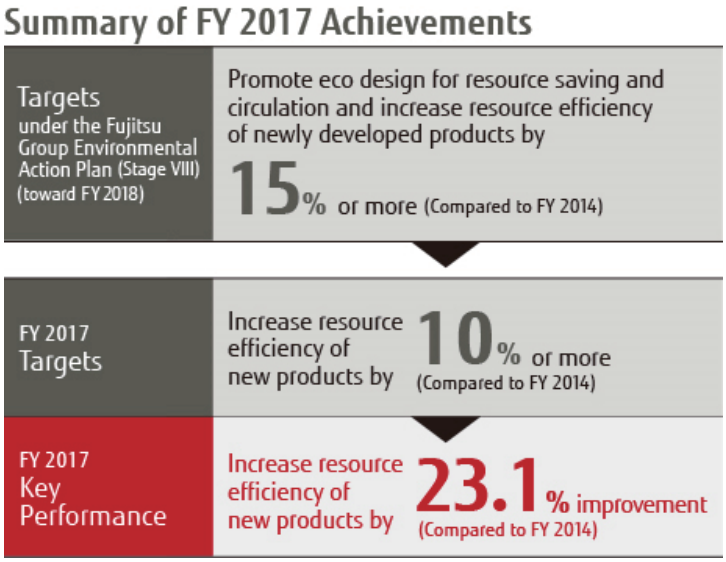
Improving the Resource Efficiency and Resource Circulation of Products

Our Approach

There is a growing view worldwide of the importance of resource efficiency. An example can be seen in the EU's designation of resource efficiency as a growth strategy and its establishment of the Resource Efficiency Flagship Initiative.

Efficient use of resources in the ICT products that we provide to customers is important. We have engaged in 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 use of resources. We are making efforts to improve resource efficiency, which is made possible 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 products that provide customers with benefits including compactness, light weight, and space savings.

FY 2017 Performance and Results



Improving the Resource Efficiency of New Products

In FY 2012, the Fujitsu Group created its own definition of resource efficiency. In FY 2017, as well, we continued to use our indicators to evaluate products newly developed by Fujitsu*1, while also reducing product part quantities and reducing product size through smaller, thinner, and lighter parts and higher-density mountings.

*1 Products newly developed by Fujitsu:
Excludes products for which resource efficiency is determined by customer specifications or standards.

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Achieving 23.1% Improvement in Resource Efficiency

Fujitsu has achieved a 23.1% improvement in FY 2017, against a target of 10%, through reduced size and weight, in PCs, smartphones, mission critical x86 servers, POS tenant devices, mobile phone radio base stations, etc.

Working toward Our Targets

To improve new product resource efficiency by at least 15%, Fujitsu will continue current initiatives, while expanding development of new lightweight, rigid materials and the use of recycled materials. We will also widely publicize product environmental performance to grow 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 of 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".

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Main Activities in FY 2017

Mission-critical x86 servers featuring both high-performance and compact housing

The 8-socket IA server PRIMEQUEST 3800E maintains world-class performance while also inheriting the high reliability and high availability of the mainframe class. At the same time, it features a compact housing and lightweight design made possible by improved cooling performance and a high-density PSU. The weight was reduced by 41.3%.

Cooling performance was improved by reviewing the CPU heatsink design and improving heat dissipation for the overall heatsink. Furthermore, through improvement of the inlet flow balance made possible by revising the housing layout and duct structure, the heat radiation capacity has been significantly increased. This made it possible to reduce the size of the CPU heatsink to one-fifth of the original.

Furthermore, by using a high-performance contra-rotating fan for the cooling fan, the airflow per unit volume was increased by 1.8 times. The density of the PSU was increased by revising the cooling method and implementing high-efficiency technology. PRIMEQUEST 3800E achieves four times the power density compared to the conventional product (PQ2800E). Through these initiatives, we succeeded in greatly reducing the size of the server.

13.3" notebook PC achieves the world's lightest weight for the second consecutive year

For the second consecutive year, LIFEBOOK UH75/B3 was the world's lightest 13.3" notebook PC. The previous model that was released in 2016 weighed 761 grams, while the new model released in November 2017 was 13 grams lighter, achieving a weight of 748 grams.

Compared to the previous model, we achieved a 9-gram reduction by revising the structure of the battery case frame. For the housing cover, we cut multiple concentric shapes inside the cover and reduced the cover thickness. These changes reduced the cover weight by a total of 4 grams. Furthermore, by using magnesium alloy in the housing top surface, bottom surface, and wrist rest cover, we achieved a strong design in conjunction with the light weight.

Advancing 3R Design

Through our proprietary product environmental assessments and green product evaluations, the Fujitsu Group is working toward the application of reduced resource usage, improved recyclability, and other technologies that take into account the 3Rs. Examples of the effective resource-saving technologies that we are deploying in our products include reductions in the number of components and cables, performance enhancements, space savings through higher-density integration, and digital product manuals. Furthermore, we are using Fujitsu's own 3-D Virtual Product Simulator (VPS), which is popular with many of our customers during their product design processes, to test the steps involved and the convenience of product assembly and disassembly before creating prototypes.

From 2010, we have also conducted regular study tours for designers at the Fujitsu Group recycling centers. In addition to hands-on experience with dismantling used products, designers gain feedback from staff in charge of recycling through idea exchanges and explanations of the obstacles to ease of dismantling. From FY 2015, the Fujitsu Group has been summarizing examples of the obstacles to ease of dismantling that we have learned from some 90 case studies at 5 recycling centers. Results are distributed in a systematic collection complete with pictures.

Gaining experience in dismantling at recycling center study tour

Eco-Friendly Packaging

Fujitsu is working on a variety of methods for reducing its use of packaging and cushioning materials. Conventionally, a notebook computer is shipped individually packed in a cardboard box, but now, by packing several products in a single returnable container, we have reduced shipping space and cardboard waste. For larger products, we have replaced conventional cushion foam with returnable air packs. With this new packaging style, we are repeatedly using packaging materials, and can use the same materials for various products. Greater efficiency in the use of packaging materials has reduced the amount of cushioning materials and wastepaper shipment, thereby, significantly reducing CO_2 emissions. We also use vegetable oil inks, which are lower in volatile organic compounds (VOCs), a known atmospheric pollutant, to print the boxes used for packaging PCs and other equipment.

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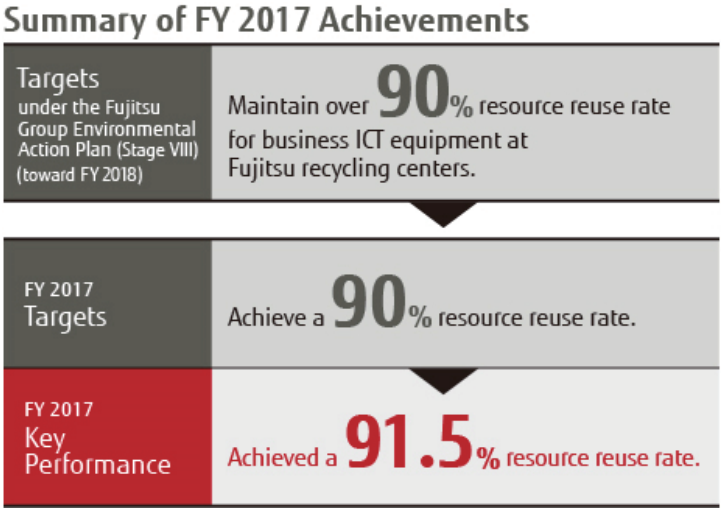
Product Recycling

Our Approach

The Fujitsu Group's product recycling programs are based on Extended Producer Responsibility (EPR) and Individual Producer Responsibility (IPR). EPR holds that producers bear responsibility for products from design and manufacturing to disposal and recycling. IPR holds that producers bear responsibility for their own products. IPR is a major challenge for the Fujitsu Group in expanding our business globally, but we believe that responding to this challenge, and that of EPR, in collaboration with industry associations and governments will enable us to help create a recycling-minded society in which the requirements and demands of all stakeholders are met. The Fujitsu Group carries out recycling programs that comply with the laws and regulations of the various countries in which it operates. Fujitsu accepts industrial waste for appropriate processing at Fujitsu recycling centers across Japan. We also try to do as much collection, reuse and recycling as we can, even in countries where recycling is not obligatory.

FY 2017 Performance and Results



Promoted Recycling of ICT Products

In Japan, the Fujitsu Group has built a recycling system that covers the entire country. While ensuring thorough traceability and security, we are steadfastly implementing Extended Producer Responsibility by providing safe and secure services that achieve high resource reuse rates in order to promote the recycling of ICT products.

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Achieved a 90% or Higher Reuse Rate

We processed 3,844 tons of recycled ICT products (used ICT products for business applications) from corporate customers and achieved a resource reuse rate of 91.5%. Also, we have now collected a total of 59,144 end-of-life PCs from individual customers.

Trends in Resource Reuse Rates of End-of-Life Business ICT Products

FY	2014	2015	2016	2017
Resource reuse rate* (%)	90.9	92.0	92.0	91.5
Amount processed (tons)	5,016	5,203	4,185	3,844

* Weight percent ratio of recycled parts and materials to end-of-life products

Trends in Numbers of End-of-Life PCs Collected from Individual Customers

FY	2014	2015	2016	2017
End-of-life PCs collected (units)	103,276	69,801	61,435	59,144

● Case Studies
http://www.fujitsu.com/global/about/environment/society/recycle/casestudy/index.html

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Reducing Greenhouse Gas (GHG) Emissions and Boosting Energy Intensity at Our Business Sites

Our Approach

The Fujitsu Group believes that prevention of global warming is a priority issue. Accordingly, we have formulated the "FUJITSU Climate and Energy Vision," Fujitsu's medium/long-term environmental vision, and aim to eliminate all CO_2 emissions from our business activities by 2050.

The primary GHG emissions from our business sites (plants, offices, and datacenters) are CO_2 accompanying energy (electricity, fuel oil, and gas) usage, and perfluorocarbon (PFC), hydrofluorocarbon (HFC), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) used in semiconductor manufacturing. In addition to complying with relevant laws, we have set reduction targets for these and are striving to decrease and control the amounts we use and emit.

Reduction of CO_2 Emissions due to Energy Consumption

CO_2 emissions due to energy consumption are responsible for about 90% of the Fujitsu Group's greenhouse gas emissions. Therefore, we continuously work to improve the following energy-saving measures to reduce CO_2 emissions.

- Energy-saving equipment, focusing on motive-power facilities (introduction of free cooling, inverters, energy-saving facilities, fuel conversion, etc.)
- Increased efficiencies through revised manufacturing processes, accompanied by proper motive-power facility operation and improvement of management
- Adjusting appropriate room temperature for office air conditioning, saving electricity for lighting and office automation equipment
- Promotion via measurement of energy consumption visualization and proactive use of that data
- Use of renewable energy such as solar power
  http://www.fujitsu.com/global/about/environment/operation/renewable-energy/index.html

Reducing Emissions of Greenhouse Gases other than CO_2

For greenhouse gases other than CO_2, the Fujitsu Group mainly uses perfluorocarbon (PFC), hydrofluorocarbon (HFC), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3) at its semiconductor divisions. We have been continuously working on changing these gases to those with a lower global warming potential (GWP) and installation of equipment to remove harmful materials in our new and existing fabrication lines.

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FY 2017 Performance and Results

Summary of FY 2017 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VIII) (toward FY 2018)	Reduce greenhouse gas emissions by	5% or more (compared to FY 2013)
	Improve energy intensity by an average of	1% or more each year
FY 2017 Targets	Reduce the increase of greenhouse gas emissions at	1.7% (compared to FY 2013)
	Improve energy intensity	1% or more (compared to previous fiscal year)
FY 2017 Performance and Results	Reduced greenhouse gas emissions by	16.6% (compared to FY 2013)
	Improve energy intensity	3.2% (compare to previous fiscal year)

Promoted Reductions of CO_2 Emissions Accompanying Energy Consumption

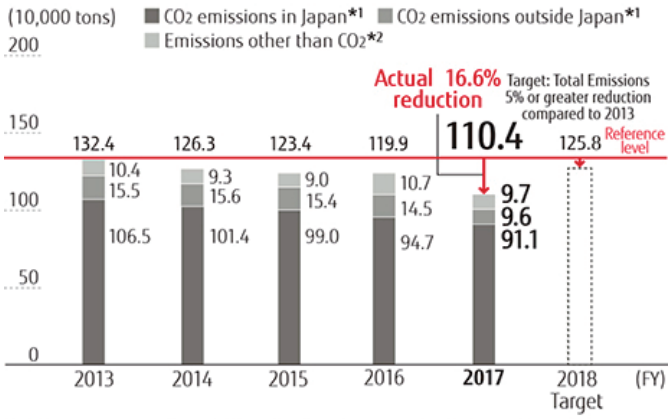
In FY 2017 as well, we are introducing and upgrading BAT* at each business site, streamlining manufacturing, making energy consumption "visible," and utilizing measurement data, etc.

GHG emissions in FY 2017 totaled approximately 1,104,000 tons (specific consumption/sales revenue: 26.9 tons/100 million yen), down 16.6% since FY 2013. Although some of this decrease is attributable to factors such as transfer of business, we also implemented other measures to reduce by approximately 30,000 tons.

Additionally, energy intensity improved by 3.2% year on year. This is an annual average improvement of 1.4% from FY 2016 to FY 2017.

* BAT (Best Available Technologies): Usable state-of-the-art technologies to reduce GHG.

Trends in Total Greenhouse Gas Emissions



***1 CO_2 emissions in/outside Japan:** CO_2 conversion factor for purchased electric power has been calculated with a fixed value of 0.570 tons-CO_2/MWh from FY 2013 to FY 2015, and a fixed value of 0.534 tons-CO_2/MWh for FY 2016 for performance reports in our Environmental Action Plan, calculated as 0.518 tons-CO_2/MWh for FY 2017.

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

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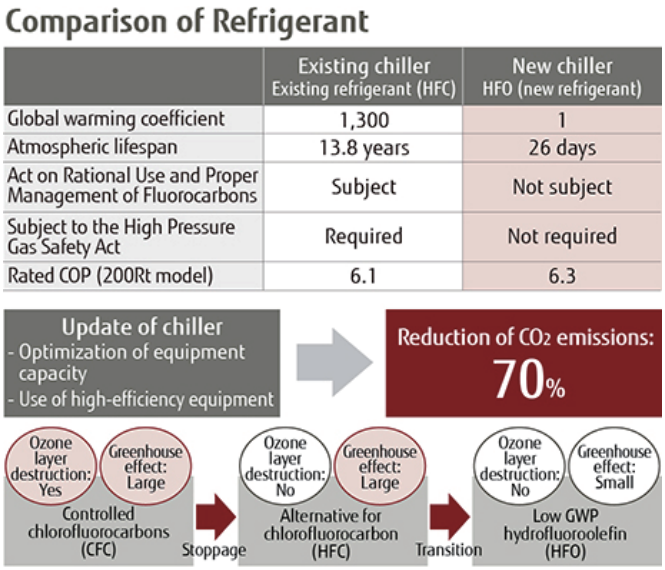
120 Reducing Chemical Substances Emissions
122 Limiting Amounts of Waste Generated

Main Activities in FY 2017

Installation of a High-efficiency Chiller for Significant Reductions in CO_2 Emissions and Global Warming Coefficient

In FY 2017, Mie Fujitsu Semiconductor Limited updated our chillers for our office area. As a measure against climate change, we selected and installed a chiller which is effective in terms of both reducing energy and reducing refrigerant fluorocarbon load. By installing a high-efficiency inverter-type centrifugal chiller, we were able to reduce the amount of CO_2 emission associated with energy consumption by 70% (CO_2 reduction amount: 2,743 tons/year). Also, we now use hydrofluoroolefins (HFO) as new refrigerant, making it possible to reduce the global warming coefficient from the previous 1,300 times to 1 time (not subject to the Act on Rational Use and Proper Management of Fluorocarbons JAPAN).

By using this chiller, we are contributing to suppression of global warming caused by leakage of fluorocarbons at the time of installation or maintenance. We will continue to select and install environmentally-friendly equipment.



Inverter-type centrifugal chiller

● Case Studies
http://www.fujitsu.com/global/about/environment/operation/activities/casestudy/index.html

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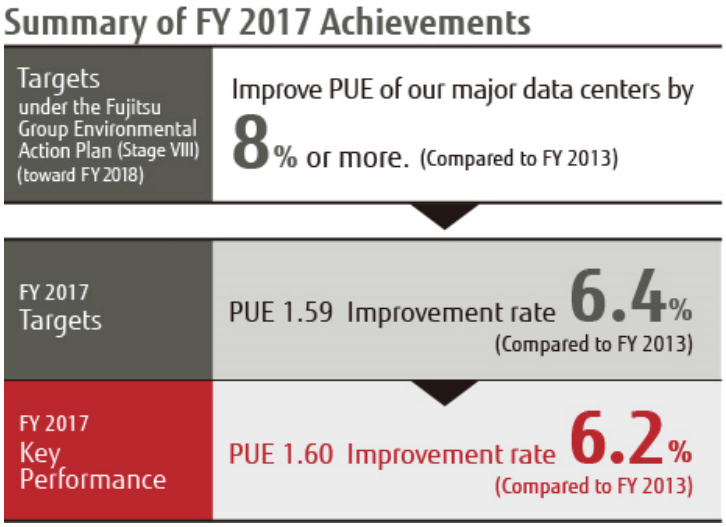
Improve Power Usage Effectiveness (PUE) at Our Data Centers

Our Approach

With the spread of cloud computing, energy use by data centers is on an upward trend and society is showing more concern over the environmental performance of data centers. Data centers comprised 25% of FY 2017 CO_2 emissions in the Fujitsu Group, with emission rates increasing by an annual average of 5.0% over the four years from FY 2013–17 at our 36 main data centers inside and outside Japan. Furthermore, our data center CO_2 emissions are expected to continue to rise as our cloud business grows, making environmentally conscious data centers a social responsibility for the Group, as well as a critical theme to address in strengthening our business foundation over the long term. In the Fujitsu Group, we are targeting*1 approximately 80% of our data centers (based on server room floor space) and we are working to boost environmental performance.

*1 Activity targets:
Global data centers 1,000 m^2 or larger, in principle, or specific data centers requested by data center business units.

FY 2017 Performance and Results



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Promoting Activities to Achieve the Targets

As part of activities based on the Fujitsu Environmental Action Plan, Fujitsu is moving forward with the improvement of PUE*2 at its data centers inside and outside Japan. PUE in FY 2017 was 1.60, slightly exceeding our target of 1.59. However, through primary initiatives including improving the cooling efficiency of air-conditioning systems, expanding the hours when external ventilation is used, and maximizing utilization of free cooling options, we achieved an average yearly improvement of approximately 2%.

We will continue to reduce the power used for facilities and ICT by making energy more efficient through improved operations and introduction of innovative technologies. Furthermore, we will strive to increase the use of renewable energy, aiming for a carbon-free society as stipulated in the Paris Agreement*3.

*2 PUE (Power Usage Effectiveness): an indicator showing the energy saving performance of data centers. PUE is obtained by dividing the energy usage of an entire data center by the energy usage of its servers and other ICT equipment. A PUE closer to 1.0 indicates better energy efficiency.

*3 Paris Agreement: A new framework for measures against global warming to reduce greenhouse gases through international cooperation, with more than 190 countries from the developed and developing world participating. It came into force in November 2016.

PUE Values and PUE Calculation Method

PUE values	PUE calculation method, etc.
Range: 1.31–2.98 Applicable DCs: 36 centers	- The Green Grid's method used - Implementation of improvement initiatives using the organization's DCMM

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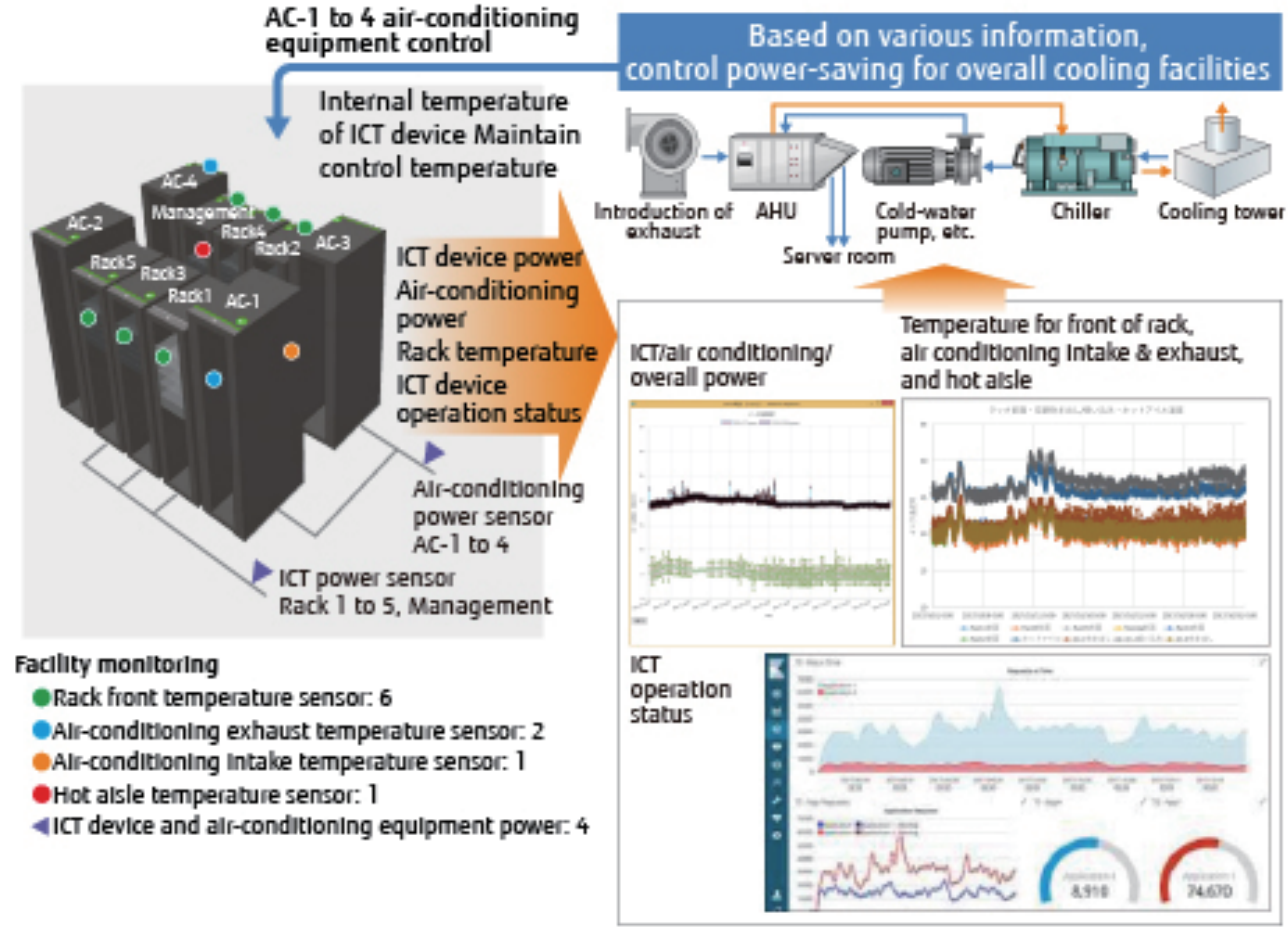
Main Activities of FY 2017

Air-conditioning Equipment Control through AI

Continuing from FY 2016, we worked to improve air-conditioning energy efficiency inside and outside Japan. We are improving efficiency through new technologies to achieve Environmental Action Plan (Stage VIII) targets.

For example, we reduced annual power consumption by 20% by using Fujitsu's innovative just-in-time modelling air-conditioning controls, predicting temperatures and humidity an hour ahead from temperature, humidity, and power data for outside air environment and inside servers, and then controlling outside air cooling and air-conditioning equipment air temperature. Moreover, we plan to further expand the control area. We are also currently verifying AI-driven learning control technology. We are improving power efficiency for air conditioning by modelling optimal air conditioning properties based on factors including wind volume, processing heat, and ICT device load. Moving forward, we will utilize the effectiveness of these measures to enable control of cold/heat-source facilities such as chillers and cold-water pumps.

Air-conditioning Equipment Control through AI



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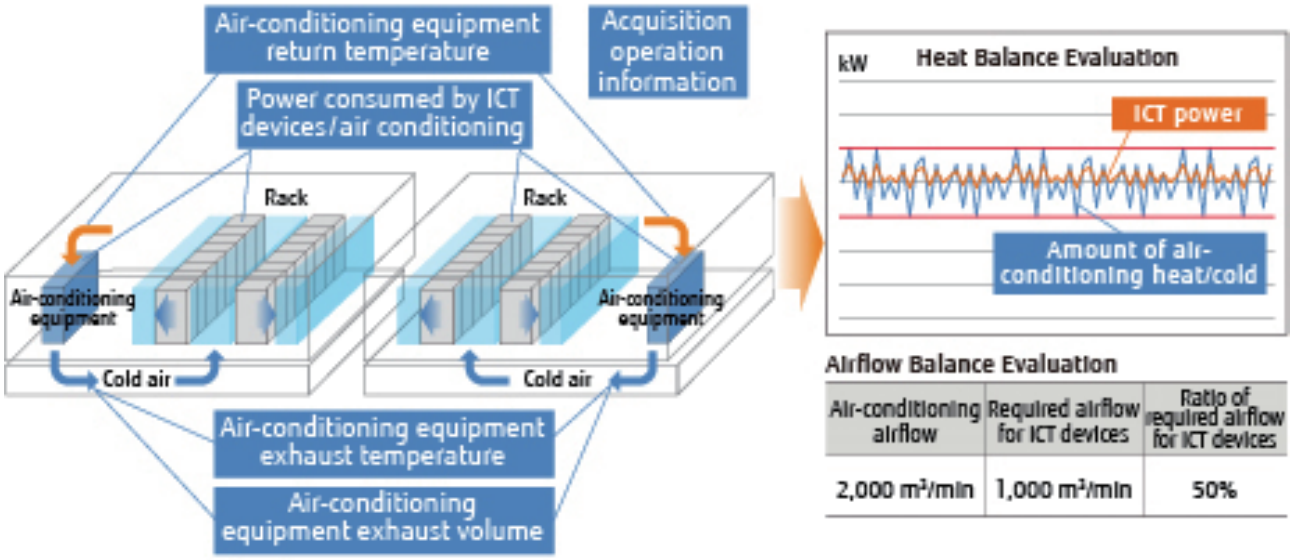
Improved Operation through Development of a Data Center Evaluation Tool

At the Fujitsu data center located in Tochigi Prefecture, as a method of evaluating whether or not the cooling energy of ICT devices is being efficiently operated and controlled, we conducted analysis based on the heat balance and airflow balance. During analysis, we ascertained the energy reduction potential amount from the current structure and facilities specifications of the data center. We then developed a "data center evaluation tool" capable of calculating the theoretical PUE value which can be achieved through improvements.

Using the tool makes it possible to analyze the necessity of implementing high-efficiency facilities by visualizing energy loss and proposing optimal related measures. Based on the analysis results, we are working to clarify policies for improving data center operation and achieving even greater efficiency. Also, in order to realize even smoother improvements, we are planning to create guidelines based on expertise gained from evaluation methods and different data centers. We will then make these guidelines available throughout the Fujitsu Group.

Data Center Evaluation Information



Airflow Balance Evaluation

Air-conditioning airflow	Required airflow for ICT devices	Ratio of required airflow for ICT devices
2,000 m³/min	1,000 m³/min	50%

Expanded Use of Renewable Energy

In May 2017, we announced our company's Environmental Vision for the achievement of a low-carbon society. We are taking steps to systematically transition to renewable energy for the power used by our data centers. In particular, the shift to renewable energy is proceeding with a focus on overseas, where it is possible to procure green energy. Renewable energy now accounts for 17% of the total power used at our 36 main data centers inside and outside Japan.

Almost all of our data centers using renewable energy are located overseas. We will work to actively expand the use of renewable energy from our overseas sites.

● **Case Studies**
http://www.fujitsu.com/global/about/environment/operation/pue/casestudy/index.html

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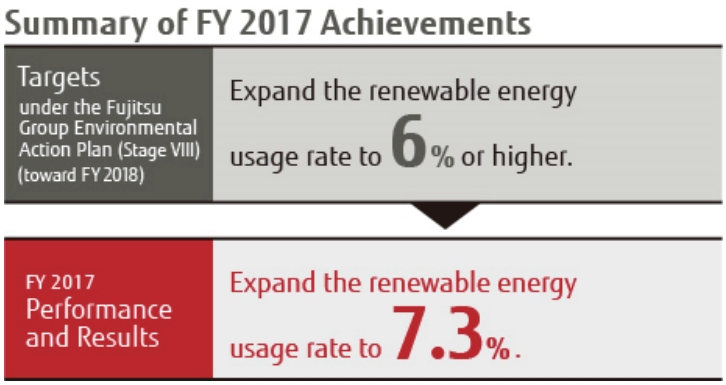
Expand the Use of Renewable Energy

Our Approach

Widespread use of renewable energy in society has reached a new level of importance from the perspectives of addressing global warming, securing stable energy supplies through diversifying our energy sources, and growing our economy with energy as a pillar of support.

The Fujitsu Group has established its environmental vision aimed at achieving a decarbonized society. Under this vision, we proactively promote renewable energy use as well as through energy saving. To achieve this vision, we have set new quantitative targets in the Environmental Action Plan, and are actively promoting the installation of solar power generation equipment at our business sites, as well as expansion of purchasing and use of green power (electric power generated with 100% renewable energy) at overseas business sites at which costs are particularly reasonable.

FY 2017 Performance and Results



New Usage Rate Target of 6% or Higher

Although numerical targets for the use of renewable energy were not originally set in the Environmental Action Plan (Stage VIII), we set a new target in FY 2016: increasing the usage rate by 6% or higher in an effort to increase purchasing and use of renewable energy, mainly in overseas regions in which it is possible to procure with economic rationality. In an effort to expand purchasing and use more, we are utilizing the Guidelines for Adopting Renewable Energy and the External Renewable Energy Information Database, both newly created in FY 2017, and reviewing implementation at our domestic and overseas business sites. In FY 2017, approximately 170 GWh of renewable energy was used, constituting 7.3% of the total amount of power usage.

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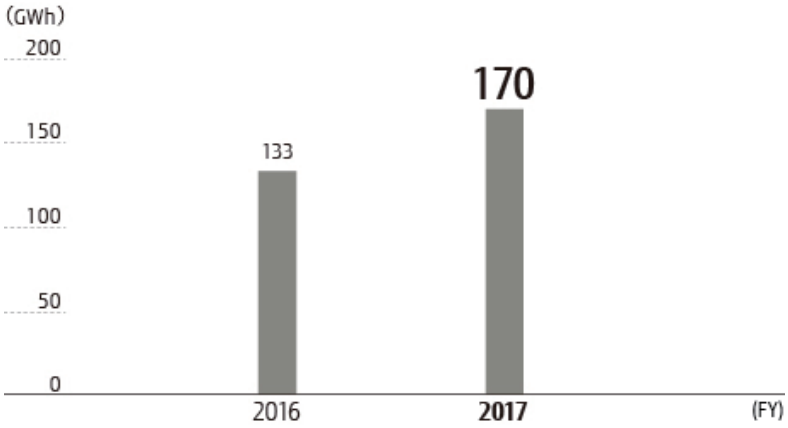
Fujitsu Finland Ltd. Green Power Certificate

Change in Amount of Renewable Energy Used by the Fujitsu Group



Main Activities in FY 2017

Joint Research with Kawasaki City for a Renewable Energy Regional Cooperation Model

With the goal of reducing greenhouse gas emissions amount, the entire Fujitsu Group has worked to achieve a low-carbon society. However, it is difficult to expect significant results by merely extending existing measures in which corporations work individually to reduce environmental load. It is necessary to evolve future environmental activities in order to realize collaboration and co-creation that will overcome various barriers such as industrial regions.

Therefore, in July 2017, we started research on a "renewable energy regional cooperation model" in collaboration with Kawasaki city, which is the location of the Fujitsu Main Office. The research is aimed at efficient usage of renewable energy in the region. In FY 2017, in addition to creating a map of renewable energy generation sites in the city, we used an environmental energy simulator developed with a British corporation to review the energy supply and demand balance in seven districts of Kawasaki city. In FY 2018, by constructing a precision model of areas around Kawasaki Station and Musashi-Kosugi Station and simulating the effect of implementing solar and wind power generation facilities, we plan to conduct even more detailed review for implementation of renewable energy.

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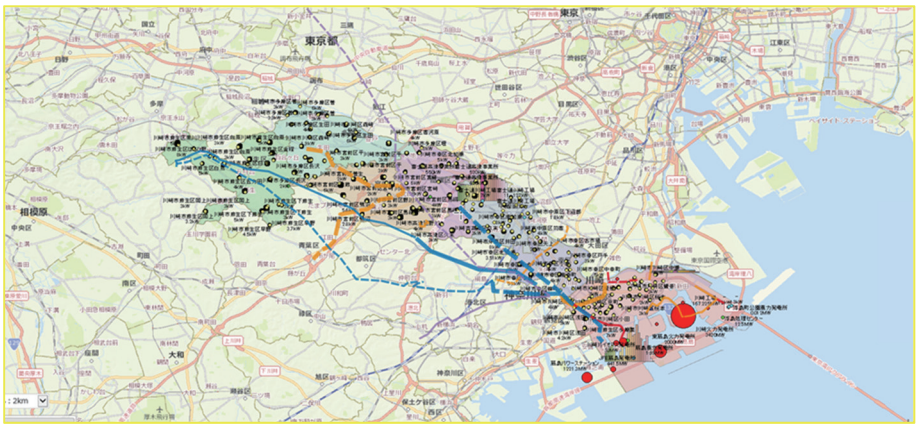
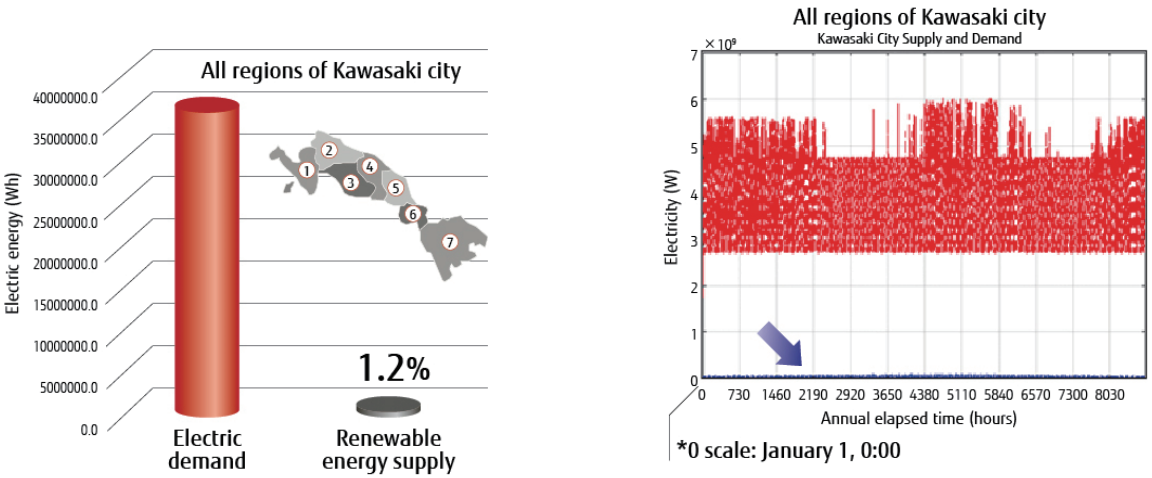


Map of renewable energy generation sites in Kawasaki city



Results of energy simulation in Kawasaki city

● Case Studies

http://www.fujitsu.com/global/about/environment/operation/renewable-energy/casestudy/index.html

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Drive Activities to Reduce CO_2 Emissions in the Supply Chain

Our Approach

The Fujitsu Group takes many steps to combat global warming. In addition to working to cut its own emissions, the Group also requests its business partners to implement CO_2-reduction activities as part of its green procurement efforts. As a result, all of the Group's major business partners have launched CO_2-reduction activities.

The Group began extending the scope of the activities further up the supply chain in FY 2016. In addition to asking business partners to take reduction-oriented steps, the Group has also requested its business partners to encourage similar initiatives at their own suppliers (the secondary suppliers to the Fujitsu Group).

Engaging in activities across the entire supply chain could help us not only expand our reduction effects (through synergy) but also enlarge the scope of the activities internationally, given the border-crossing scale of the supply chain. By pursuing these initiatives, we will keep striving to establish a decarbonized society for future generations.

FY 2017 Performance and Results

Summary of FY 2017 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VIII) (toward FY 2018)	Drive activities to reduce CO_2 emissions in the supply chain.
FY 2017 Targets	Through business partners, request secondary suppliers to implement CO_2-reduction-oriented activities.
FY 2017 Key Performance	Through major business partners (approximately 1,600 companies), requested secondary suppliers (over 38,000 companies) to implement CO_2-reduction activities.

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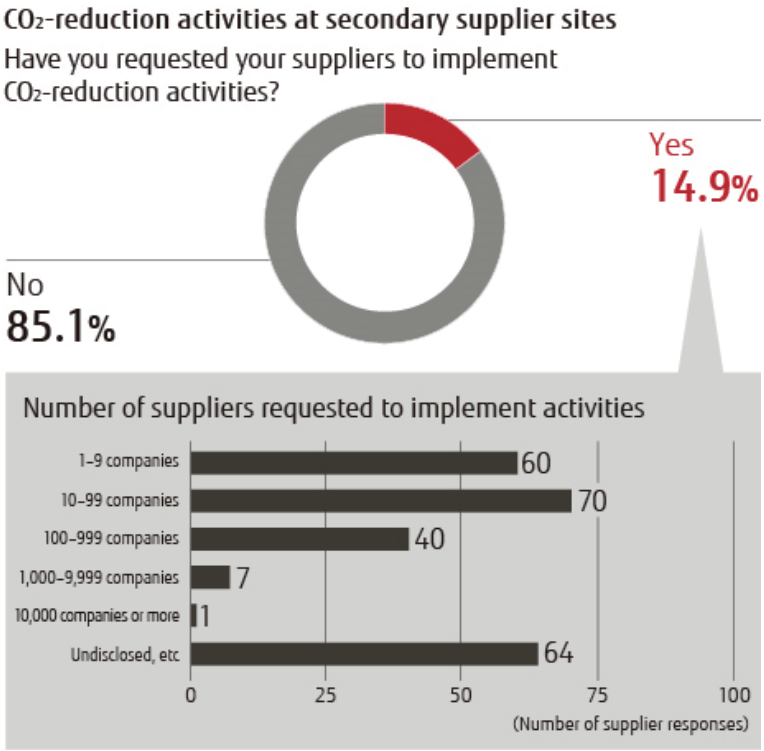
Request/Support for Activity Development at Secondary Suppliers

We asked our major business partners, which account for over 98% of the Group's total procurement value, to ask their own suppliers (our secondary suppliers) to comply with the Group's requests for the implementation of CO_2-reduction activities. We also assessed the status of activities at our business partners using a unique Environmental Survey Sheet.

After analyzing the survey responses and creating a report outlining activity trends, we provided the results to the partners that submitted survey responses as a form of feedback that they could reference when developing and implementing future activities, urged the partners to continue engaging in activities, and asked them to extend the scope of activities to their own suppliers.

Although the number of the Group's business partners responding that they had asked their own suppliers to implement activities came to less than 14.9% of the total as of the end of FY 2017, the number of secondary suppliers that received requests topped 38,000-a promising beginning for substantial awareness-raising initiatives.



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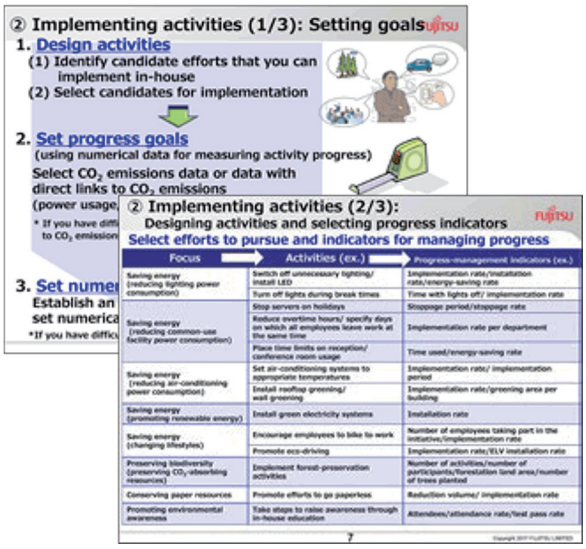
Starting the Provision of "Guideline for activities for reducing CO_2 emissions"

In order to spread activities for reducing CO_2 emissions throughout the entire supply chain, the Fujitsu Group has created its own unique explanatory materials and started providing the materials to business partners. In addition to obtaining increased understanding from business partners regarding the importance of taking action in the supply chain, the materials are also intended for use by the Group when requesting and supporting activities at business partners. The materials are posted on the Group's website, which has been accessed more than 800 times in about a four-month period. This shows the overwhelming response to this new initiative. Moving forward, the Fujitsu Group will continue to fulfill its role as a global corporation by constantly considering what is needed to reduce global warming and then taking action.

※Guideline for activities for reducing CO_2 emissions" can be downloaded from the following URL.
Japan: http://www.fujitsu.com/jp/about/procurement/material/green/
Global: http://www.fujitsu.com/global/about/procurement/green/

Informational materials for business partners



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Reduce CO_2 Emissions from Transportation

Our Approach

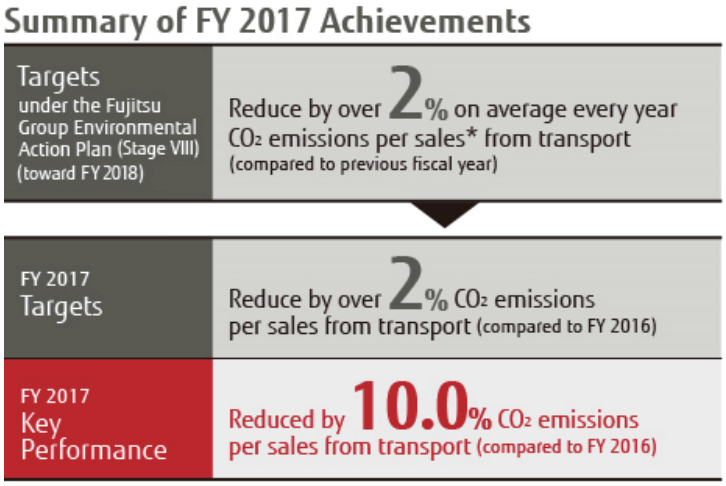
With Group companies and business sites worldwide, and materials/parts sourced from a significant number of business partners, reducing CO_2 emissions accompanying logistics and transportation activities is a priority for the Fujitsu Group.

The Fujitsu Group has worked toward its targets for CO_2 emission reductions from domestic transport. Since Environmental Action Plan (Stage VII), we have expanded the scope of reductions to transport within regions overseas, as well as international transport. Stage VIII also drives streamlining and greater in global logistics.

The Group is working toward lowering environmental impact throughout the supply chain, such as displaying copies of the Fujitsu Group Green Logistics Procurement Directions, to strengthen our partnerships. Lastly, as an initiative in our overall distribution process, the Group is devoting effort to the 3Rs (Reduce, Reuse, Recycle) in packaging products and materials/parts.

- Fujitsu Group Green Logistics Procurement Direction Edition1.0 [In Japanese] [253KB]
  http://www.fujitsu.com/downloads/JP/archive/imgjp/jeco/products/logistics_guide.pdf

FY 2017 Performance and Results



Reduced by 10.0% Compared to Previous FY; FY 2017 Results Broadly Surpassed Targets

The amount of transportation CO_2 emissions in FY 2017 was 80,000 tons. Among that amount, 20,000 tons of CO_2 were emitted during transport in Japan, while 60,000 tons were emitted during transport to overseas and transport in foreign regions. The amount of CO_2 emissions per sales was reduced by 10.0% compared to FY 2016, which means that the Group succeeded in meeting its targets for FY 2017.

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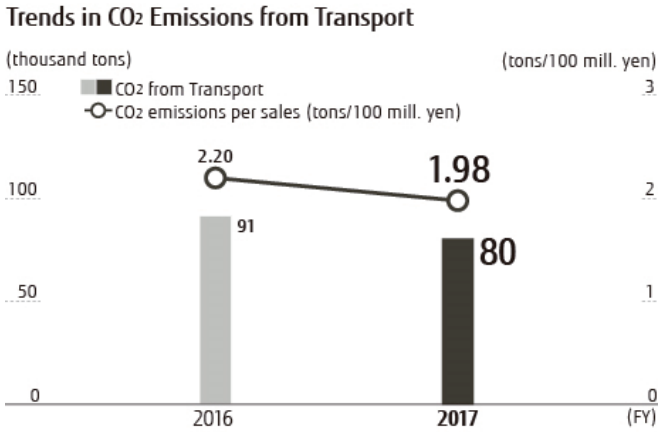

Example Initiatives in FY 2017

Promoting modal shifts (switching from air to ocean shipments)

For the material shipment of computers and PC servers from overseas, Fujitsu is actively switching to ocean shipments which have lower environmental burdens and lower costs than shipments by air.

Expanding the use of joint transportation with other companies

The Fujitsu Group is promoting joint transportation by partnering with logistics providers and loading Fujitsu products together with products of other companies. In FY 2016, we mainly used joint transport on key routes between logistics terminals; Furthermore, in FY 2017, we expanded the scope of application to include shipping in major urban areas from logistics terminals to customers. This expansion allowed us to further reduce the number of trucks used.

Reducing the amount of transportation CO_2 emissions through various measures for increasing efficiency

By using the "Green Logistics Case Studies handbook of Transportation CO_2 Reductions" which was created in FY 2016, Group companies in Japan and overseas actively engaged in activities such as revising their transportation plans, formulating measures for increasing loading rate, and revising packaging materials. This made it possible to reduce the amount of transportation CO_2 emissions.

● Case Studies
http://www.fujitsu.com/global/about/environment/operation/logistics/casestudy/index.html

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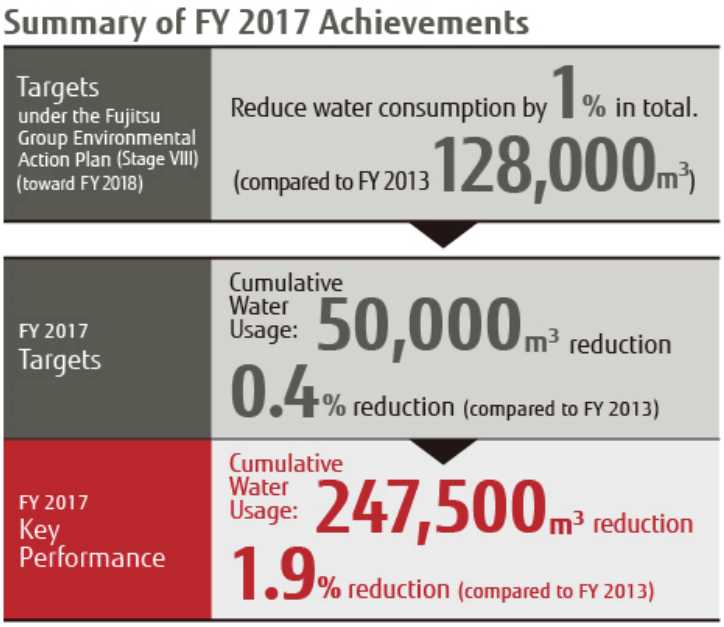
Reducing the Amount of Water Used

Our Approach

Global water shortage risks are increasing along with climate change, destruction of forests, and economic and population growth in emerging and developing countries. For companies, as well, water shortages bear risks toward business continuity.

Reducing water usage and recycling water are critical issues. Since the Fujitsu Group uses especially large amounts of water in our semiconductor and printed circuit board manufacturing, we believe it is particularly necessary to reduce our water consumption in these areas. In addition to general water saving, to date we have been continuously striving to recirculate and reuse water by recycling pure water and reusing rainwater. Under our Environmental Action Plan (Stage VIII), we have strengthened our efforts to use water resources effectively even more than in the past.

FY 2017 Performance and Results



247,500 m^3 Cumulative Reduction in Water Usage from FY 2013

In regard to the target for reduction of water usage stipulated in the Environmental Action Plan (Stage VIII), we achieved cumulative reduction of 247,500 m^3 (139,300 in FY 2016; 108,200 in FY 2017), far exceeding the FY 2017 target of a 50,000 m^3 reduction.

Water usage for FY 2017 was 15,540,000 m^3 (specific consumption per sale: 379.2 m^3/100 million yen), which was a 7.9% decrease compared to FY 2016, with increased production in addition to other factors. However, the proportion of water usage consisting of recycled water overall was 49.6%, a 5.0% increase compared to FY 2016, as a result of various efforts at each office and plant to use water resources effectively.

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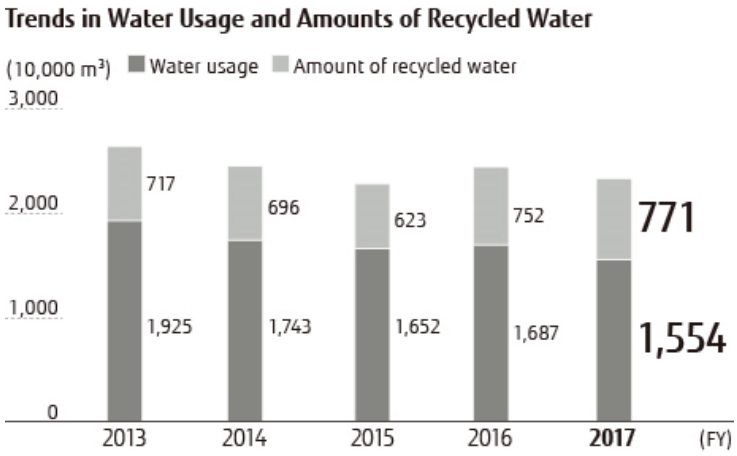
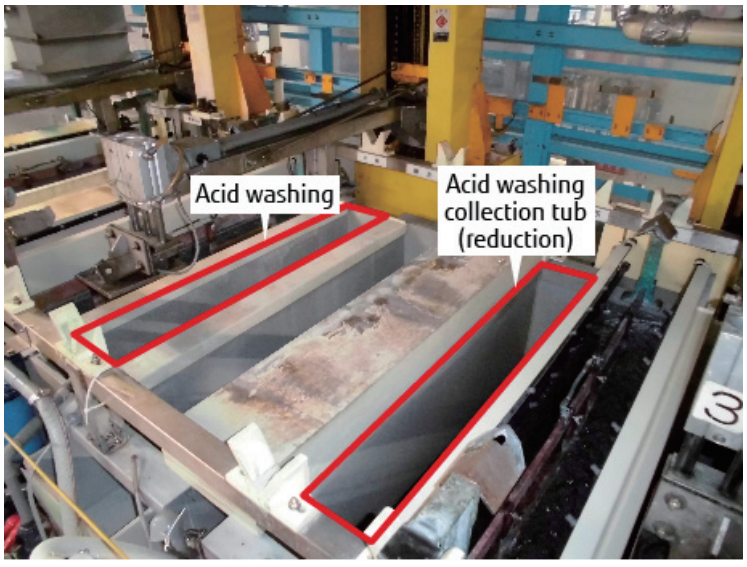
110 Expand the Use of Renewable Energy
113 Drive Activities to Reduce CO_2 Emissions in the Supply Chain
116 Reduce CO_2 Emissions from Transportation
118 Reducing the Amount of Water Used
120 Reducing Chemical Substances Emissions
122 Limiting Amounts of Waste Generated



Main Activities in FY 2017

Reduction of Water Usage in the Coating and Cleaning Processes

Shinko Electric Industries Co., Ltd. has set target values for each of its offices (plants) which use a large amount of water and is engaged in reduction activities. In FY 2017, the company switched from acidic waste water to circulating waste water, eliminated unnecessary processes by revising the manufacturing process, and reduced the amount of water supply for coating (revised the water supply amount to the target value from the control upper limit value). Through these measures, the company succeeded in reducing the annual water usage by 42,840 m^3 (equivalent to 10 million yen). In FY 2018, the company seeks an annual reduction of approximately 30,000 m^3 (equivalent to 9 million yen) through measures such as recycling of water used for the washing of manufacturing equipment.



Activities to reduce water usage by revising the manufacturing process (process improvement) (Shinko Electric Industries)

- **Case Studies**

http://www.fujitsu.com/global/about/environment/operation/water/casestudy/index.html

- **CDP Water（366KB）**

http://www.fujitsu.com/global/documents/about/environment/operation/water/ProgrammeResponse_Water%202017.pdf

84 Contributing to a Sustainable Society through ICT Services
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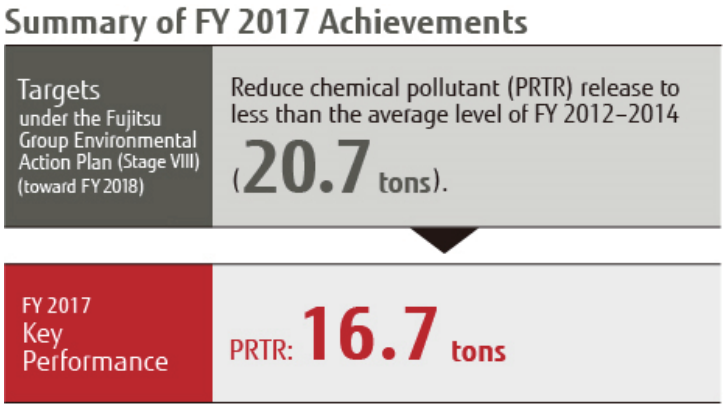
Reducing Chemical Substances Emissions

Our Approach

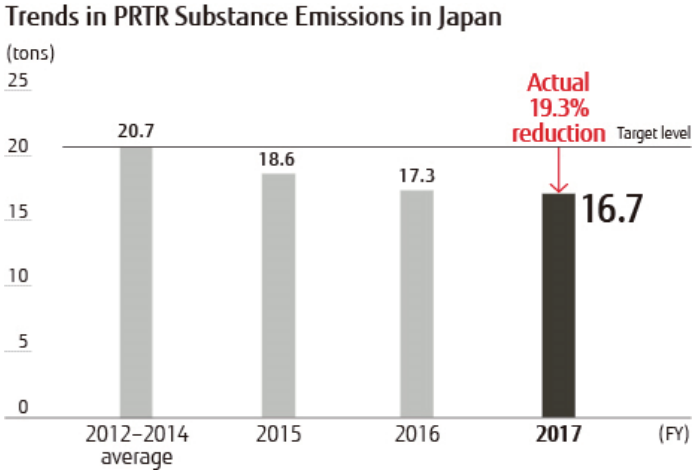
We manage the amounts used for about 1,300 chemicals in the Fujitsu Group in order to prevent environmental risks that could lead to environmental pollution or adverse health effects due to our use of harmful chemical substances. We operate a Chemical Information System called "FACE," which we use to register and monitor chemicals at every site, manage Safety Data Sheet (SDS), control income and expenditures in conjunction with purchasing data and inventory data, and strengthen our management and efficient use of chemicals.

FY 2017 Performance and Results



Achieved On-Going PRTR Substance Emission Target

Group-wide chemical substance emissions for FY 2017 came to 16.7 tons for PRTR, within the target value in the Environmental Action Plan (Stage VIII).



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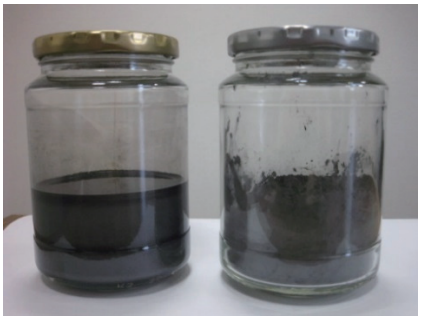
Main Activities in FY 2017

Reducing the Average PRTR Emissions Amount per Coat by Developing and Implementing Powder Coating Technology

Fujitsu Kasei Limited implemented powder coating which does not use solvents for the primer of computer casing components for some products (models). Powder coating achieves a thickness equivalent to two to three coats of normal primer (paint for undercoat). This made it possible to reduce the average PRTR emissions amount per one coat from 7.0 grams to 5.7 grams, a decrease of 18.6%. Furthermore, in addition to revising the paint coating program, we implemented technological measures such as attaching a direct grounding wire to jigs in order to adjust the powder discharge and improve the coating efficiency. This suppresses wasteful use of paint.

Regarding the amount of chemical substances handled (and the amount discharged) in FY 2017, the amount of cleaning thinner used increased due to a heightened frequency of cleaning coating jigs used in important processes. This change was made in order to support an increase in in-house production and to ensure quality. As a result, the amount of PRTR emissions increased compared to the previous fiscal year. However, the implementation of powder coating enabled significant suppression for the amount of solvent paint used. When comparing the amount of production, it was 810,000 coats in FY 2016 and 1.2 million coats (148%) in FY 2017.

In FY 2018, we are seeking to reduce the cleaning thinner for coating jigs, which was the reason for the increase discussed above. By taking actions which include recycling, we are implementing activities aimed at reducing the amount of PRTR emissions.



(Left) Notebook PC case (powder coating without using solvent)
(Right) Normal solvent and powder coating

● **Case Studies**

http://www.fujitsu.com/global/about/environment/operation/chemical/casestudy/index.html

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Limiting The Amount of Waste Generated

Our Approach

The Fujitsu Group sees waste as a valuable resource and continuously works to recover resources from our waste, or to use that waste as an energy source. In Japan, we have been reducing our final disposal amounts every year. However, given the difficulty of building new disposal sites, and the limited lifespans of existing sites, the environment surrounding our waste disposal is as challenging as ever.

By proactively installing equipment and reusing waste, we are working to follow the stipulations in Japan's Fundamental Law for Establishing a Sound Material-Cycle Society to 1) reduce waste generated, 2) reuse waste, 3) recycle waste, and 4) recover heat from waste. We do this in order to reduce the amounts of waste acid, waste alkali, and sludge generated in our production of semiconductors and printed circuit boards.

Furthermore, in order to properly dispose of waste, we have established the Standards for Consignment of Waste Disposal as company-wide standards. These standards are based on the Waste Management and Public Cleansing Act.

On-site Auditing for Outsourcing Contractors

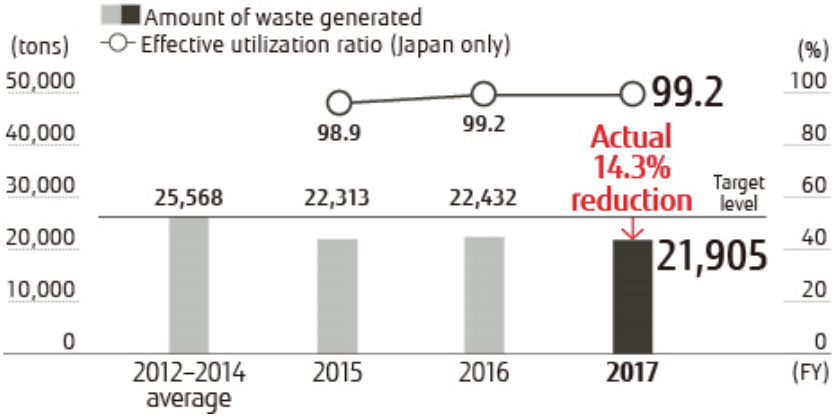
We conclude contracts with waste processors through a contract that is commonly used by the Fujitsu Group. On-site auditing of waste processors we have contracts with is regularly performed to confirm appropriate processing of waste. If multiple business sites have a contract with one processor, a representative business site conducts on-site auditing based on the representative auditing regulations. In other cases, each business site individually conducts auditing to confirm the practice of appropriate processing.

FY 2017 Performance and Results

Measures for Reducing Waste Generation Amount and Converting Waste to Value-Added Material

Mie Fujitsu Semiconductor Limited converted plastic drums and chemical polyethylene contains to value-added material (53 tons). Shimane Fujitsu Limited reused a portion of wooden pallets used at the time of parts delivery to ship products (11 tons). This achieved our waste generation target of 21,905 tons (generation rate/unit of sales: 0.53 tons/100 mill. yen).

Waste Generated and Effective Utilization Ratio



Waste Generated, Effective Use, and Final Disposal

(tons)

Waste Type	Waste Generated	Effective Utilization	Final Disposal
Sludge	4,158	4,007	150
Waste oil	1,121	1,104	18
Waste acid	4,072	4,072	0
Waste alkali	3,830	3,429	401
Waste plastic	3,314	3,267	46
Waste wood	898	894	4
Waste metal	791	791	0
Glass/ceramic waste	491	486	5
Other*	3,230	2,746	484
Total	21,905	20,796	1,108

* Other includes general waste, wastepaper, septic tank sludge, cinders, rubble, textile waste, animal and plant residue, and infectious waste.

● Case Studies

http://www.fujitsu.com/global/about/environment/operation/waste/casestudy/index.html

Environmental Data

Environmental Accounting

To promote environmental management, the Fujitsu Group introduced environmental accounting in FY 1998. We evaluate the efficiency of our environmental protection activities by monitoring the required costs and benefits of these activities. Through this process, we have clarified issues and promoted sharing of the results.

Purpose of Introducing an Environmental Accounting System

- To clarify our corporate stance through disclosure of information to stakeholders
- To implement long-term, continuous environmental measures
- To raise the efficiency of investment in environmental protection measures
- To energize environmental protection activities

Basic Environmental Accounting Elements in FY 2017

- Applicable period
  April 1, 2017 to March 31, 2018
- Accounting coverage
  Fujitsu and its major consolidated subsidiaries worldwide[*1]
- Calculation basis for environmental protection costs
  - Accounting method for depreciation and amortization: Depreciation and amortization expenses for investments are included in expenses using straight line depreciation (with no residual value) based on a useful life of 5 years. The useful life of 5 years was chosen based on the average length of the actual period from the introduction of environmental facilities to the implementation of repairs and upgrades.
  - Basis for recording composite costs: In regard to composite costs in which environmental protection costs are coupled with other costs, the Fujitsu Group records only the portion corresponding to environmental protection in conformance with the Environmental Accounting Guidelines 2005 issued by the Japanese Ministry of Environment.
- Calculation basis for the economic benefits of environmental protection measures
  - Scope of benefits in environmental accounting: The Fujitsu Group records the actual benefits and estimated benefits (risk avoidance benefit and deemed benefit) of reducing environmental impact related to the following items.
    - Benefit of reducing the environmental impact related to resource usage in business activities
    - Benefit of reducing the environmental impact related to environmental loads and waste emissions resulting from business activities
    - Benefit of reducing the environmental impact related to goods and services produced by business activities
    - Benefit of reducing the environmental impact related to transportation and other activities
  - Investment benefit materialization period and basis: The accounting period for actual economic benefits has been aligned with the depreciation and amortization period for investments (60 months). However, the accounting period for economic benefits derived from reducing personnel costs related to the environmental management system is 12 months, in line with the main thrust of the environmental management system, which is reviewed every year. With regard to estimated economic benefits, the accounting period for economic benefits derived from capital investment is the same as the depreciation and amortization period (60 months) for actual economic benefits. Benefits corresponding to a given fiscal year, such as the amount of contribution to environmental protection and the avoidance of operational losses, are recorded only for that fiscal year. The basis for accounting for economic benefits is as follows.

- Contribution of environmental protection activities to added value derived from production activities
  The Fujitsu Group recognizes support provided by environmental protection activities to production activities as an economic benefit. Accordingly, the amount of contribution is determined by multiplying the added value derived from production activities by the ratio of the maintenance and operation cost for environmental protection facilities to the total facility cost of each site.
  Contribution = Added value x Maintenance and operation cost for environmental protection facilities / total facility cost
- Avoidance of operational loss at business sites due to non-compliance with laws and regulations.
  The Fujitsu Group recognizes the avoidance of operational loss as the amount of loss that is avoided in the event of the materialization of risk arising from neglect to make upfront investments needed to comply with laws and regulations. The number of operational loss days is determined based on the size of investment related to the environment, but shall not exceed three days.
  Benefit = Added value / Operational days x Operational loss days
- Benefit of public relations activities
  This benefit is calculated by converting publicity efforts related to environmental protection activities in newspapers, magazines and TV into an advertising cost.
  Benefit=Advertising cost of newspapers, magazines and TV x Number of advertisements ran and programs broadcast.
- R&D benefit
  The Fujitsu Group calculates the amount of additional earnings resulting from the contribution of R&D achievements for environmental protection purposes, such as Super Green Products and environmental solutions.

*1 Fujitsu's major consolidated subsidiaries worldwide:
FUJITSU ISOTEC LIMITED, FUJITSU IT PRODUCTS LIMITED, Fujitsu I-Network Systems Limited, Fujitsu Interconnect Technologies Limited, Ecolity Service Limited, FDK CORPORATION, FUJITSU OPTICAL COMPONENTS LIMITED, FUJITSU KASEI LIMITED, FUJITSU CLIENT COMPUTING LIMITED, Fujitsu Laboratories Limited, FUJITSU CONNECTED TECHNOLOGIES LIMITED, FUJITSU COMPONENT LIMITED, Shimane Fujitsu Limited, FUJITSU PERIPHERALS LIMITED, SHINKO ELECTRIC INDUSTRIES CO., LTD., Fujitsu Telecom Networks Limited, Fujitsu Ten Limited (currently DENSO TEN LIMITED), Fujitsu Ten Manufacturing Limited (currently DENSO TEN MANUFACTURING LIMITED), TRANSTRON Inc., PFU Limited, FUJITSU FRONTECH LIMITED, MIE FUJITSU SEMICONDUCTOR LIMITED, AIZU FUJITSU SEMICONDUCTOR WAFER SOLUTION LIMITED, AIZU FUJITSU SEMICONDUCTOR MANUFACTURING LIMITED, Fujitsu Network Communications Inc., FUJITSU TECHNOLOGY SOLUTIONS (HOLDING) B.V.

The Fujitsu Group also aggregates data on R&D costs and benefits related to environmental solutions from subsidiaries other than those shown above. However, the data is aggregated solely for environmental solution costs and benefits, so the relevant subsidiaries are not included in the scope of disclosure for major consolidated subsidiaries.

Fiscal 2017 Environmental Accounting Results

Breakdown of Results (Investment and costs) [billion yen]

Fiscal 2017 Breakdown of Results (Capital investment, Expenses, Economic benefits)

Item		Main areas covered	Capital investment (billion yen)	Expenses (billion yen)	Economic benefits (billion yen)
Business area costs/benefits	Pollution prevention costs/benefits	Air/water pollution prevention, etc.	2.02 (+1.56)	4.55 (-0.14)	7.67 (+1.44)
	Global environmental conservation costs/benefits	Global warming prevention, saving energy, etc.	0.25 (-0.35)	2.37 (-0.08)	1.46 (-0.02)
	Resource circulation costs/benefits	Waste disposal, efficient utilization of resources, etc.	0.01 (-0.10)	2.27 (-0.03)	10.98 (+1.00)

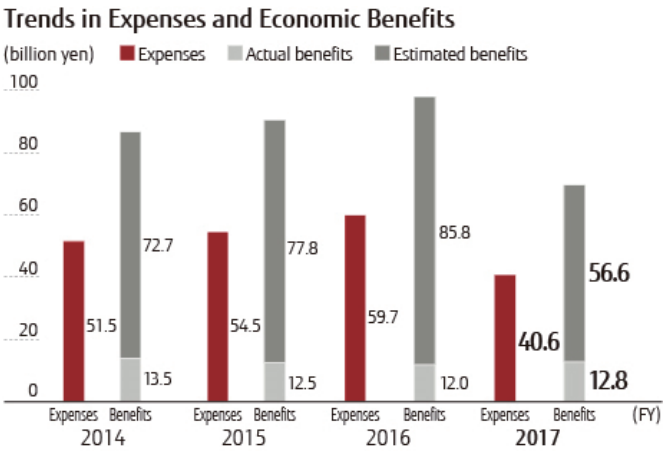
Item	Main areas covered	Capital investment (billion yen)	Expenses (billion yen)	Economic benefits (billion yen)
Upstream/downstream costs/benefits	Collection, recycling, reuse, and proper disposal of products, etc.	0.01 (-0.00)	0.84 (+0.02)	0.36 (-0.17)
Administration costs/benefits	Provision and operation of environmental management systems, environmental education of employees, etc.	0.03 (-0.00)	2.23 (-0.41)	0.30 (-0.19)
R&D costs/benefits	R&D on products and solutions that contribute to environmental protection, etc.	0.09 (-0.01)	28.31 (-18.38)	48.61 (-30.49)
Social activity costs	Donations to, and support for, environmental groups, etc.	0.00 (+0.00)	0.03 (-0.01)	-
Environmental remediation costs/benefits	Restoration and other measures related to soil and groundwater contamination, etc.	0.00 (-0.04)	0.04 (-0.03)	0.00 (+0.00)
Total		**2.41 (+1.07)**	**40.64 (-19.06)**	**69.38 (-28.43)**

- Numbers in parentheses indicate increases or decreases in comparison with the previous year.
- Due to rounding, figures in columns may not add up to the totals shown.
- Amounts shown as "0.00" include amounts for which the value was smaller than the display units used.

Costs and Economic Benefits in FY 2017

The results of Environmental Accounting for FY 2017 showed expenses of 40.6 billion yen (32% decrease from the previous year), and the economic benefits (calculated by our original estimating method) were 69.4 billion yen (29% decrease from the previous year). Thus both expenses and benefits decreased.

Also, our capital investment was 2.4 billion yen (79% increase from the previous year) by the water pollution prevention measures etc.



Environmental Liabilities

Our Liabilities toward the Environment

The Fujitsu Group, in properly forecasting expected future environmental liabilities and communicating our soundness and stance of not deferring environmental liabilities, has recorded a liability of 4.48 billion yen in soil-pollution cleanup costs, high-level polychlorinated biphenyl (PCB) waste disposal costs, and asbestos processing costs during facilities demolition. This total is the amount we calculate, as of the end of FY 2017, to be necessary for the Fujitsu Group in Japan to carry out these tasks in the next FY and beyond.

Past Records

Past records of our environmental accounting up to FY 2016 are included in the Sustainability Report.

● **Sustainability Report**
http://www.fujitsu.com/global/about/environment/management/communication/report/index.html

Material Balance

Material Balance

INPUT		FY2014	FY2015	FY2016	FY2017
Development/ Design Planning/Design	**Raw Materials**				
	Metal [ktons]	21	18	25	16
	Plastic [ktons]	11	9	11	9
	Others [ktons]	18	15	15	13
	Chemical Substances*				
	VOC [ktons]	1.3	1.3	1.4	1.3
	PRTR [ktons]	10.0	9.7	9.8	9.5
	Water				
	Water usage [Mm^3]	16.60	15.83	16.87	15.54
	Energy				
	Total [PJ]	18.78	18.37	20.38	19.25
	Purchased electricity [GWh]	1,714	1,680	1,899	1,800
	Heavy oil, kerosene, etc. [kL]	9,228	8,590	10,118	10,100
	LPG, LNG [tons]	3,836	3,454	3,059	2,954
	Natural gas, city gas [Mm^3]	30.66	29.92	29.99	29.76
	District heating and cooling [TJ]	43	42	43	43
Distribution/Sales	**Energy**				
	Fuel (light oil, gasoline, etc.) [PJ]	1.75	1.50	1.46	1.18
Usage	**Energy**				
	Electricity [GWh (PJ)]	9,345 (91.86)	7,898 (77.64)	8,111 (80.87)	6,680 (66.6)
Collection/Reuse/ Recycling Operation and Maintenance	Resources recycling rate [%]	94.3	94.5	92.0	91.5
	Amount processed [tons]	5,016	5,203	4,185	3,844

OUTPUT		FY2014	FY2015	FY2016	FY2017
Development/ Design Planning/Design	**Raw Materials**				
	CO_2 emissions [ktons-CO_2]	820	630	640	520
	Chemical Substances*				
	VOC [tons]	230	212	245	228
	PRTR [tons]	10	10	11	10
	Atmospheric Release				
	Total GHG emissions [ktons]	897	876	1,229	1,137
	CO_2 [ktons-CO_2]	804	786	1,122	1,040
	GHG other than CO_2 (PFCs, HFCs, SF_6, NF_3, others) [ktons]	93	90	107	97
	NOx [tons]	127	103	104	63
	SOx [tons]	112	108	30	11
	Water Discharge				
	Wastewater [km^3]	15,480	14,080	15,280	14,610
	BOD [tons]	349	397	391	290
	COD [tons]	192	160	179	94
	Waste				
	Amount of Waste Generated [ktons]	22.3	20.7	22.4	21.9
	Thermal recycling volume [ktons]	4.7	4.6	4.7	4.8
	Material recycling volume [ktons]	16.1	14.9	15.6	16.0
	Disposal volume [ktons]	1.4	1.1	2.1	1.1
Distribution/Sales	**Atmospheric Release**				
	CO_2 [ktons-CO_2]	120	100	99	80
Usage	**Atmospheric Release**				
	CO_2 [ktons-CO_2]	5,180	4,410	4,570	3,640

* Substances that qualify as both a PRTR targeted chemical and a VOC are included under "VOCs" only.

GHG Emissions Report Based on GHG Protocol Standards

Indicator		FY2014	FY2015	FY2016	FY2017
Upstream (Scope3) [1,000 tons]	Purchased goods and services	2,415	2,317	2,432	2,169
	Capital goods	9	82	31	13
	Fuel and energy-related activities not included in Scopes 1 and 2	70	68	76	72
	Transportation and distribution (Upstream)	119	102	99	80
	Waste generated in operations	8	8	8	7
	Business travel	116	107	107	86
	Employee commuting	81	76	87	69
	Leased assets (Upstream)	129	123	373	288
Reporting company (Scope1,2) [1,000 tons]	Direct emissions	197	189	208	198
	Indirect emissions from energy sources	700	686	1,021	939*1 912*2
Downstream (Scope 3) [1,000 tons]	Transportation and distribution (Downstream)	Not applicable	Not applicable	Not applicable	Not applicable
	Processing of sold products			21	27
	Use of sold products	5,711	4,407	4,566	3,460
	End-of-life treatment of sold products	Not applicable	Not applicable	Not applicable	Not applicable
	Leased assets (Downstream)	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.
	Franchises	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.
	Investment	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.	The Company's business is not applicable.

*1 Emissions by Location-based method
*2 Emissions by Market-based method

Environmental Performance Data Calculation Standards

Subject Period: April 1, 2017 – March 31, 2018

Scope: Fujitsu and the Fujitsu Group (For details, refer to the List of Companies Covered by the Report on Environmental Activities.P140)

Fujitsu Group Environmental Action Plan (Stage VIII) "Our Society"

Target Item	Indicator	Unit	Calculation Method
Achieve top-level energy efficiency for 50% or more of the new products.	The percentage of new products that are top-level energy efficient	%	The percentage of top-level*1 energy efficient products with respect to the number of product series that are expected to be developed. *1 Top-level energy efficiency: Achieve an upper-level benchmark based on outside indicators, etc., in energy efficiency, on a par with "top-runner" products (first in the world or industry, top of the world or industry).
Promote eco design for resource saving and circulation and increase resource efficiency of newly developed products by 15% or more.	Rate of improvement of resource efficiency of new products	%	The average rate of improvement of resource efficiency*1 (versus FY 2014) of products. *1 Hardware products, under the Fujitsu brand, newly developed in FY 2016–18. Excludes products not designed by Fujitsu (OEM products) and products designed under customer specifications. * Refer to "Improving resource efficiency of new products" for the resource efficiency calculation method.
Maintain over 90% resource reuse rate of business ICT equipment at Fujitsu recycling centers.	Resource reuse rate of business ICT equipment	%	Based on the calculation method provided by JEITA, recycled components and resources as a percentage of the weight of used products processed in Japan. Excludes collected waste other than used electronic products.

Fujitsu Group Environmental Action Plan (Stage VIII) "Our Business"

Target Item	Indicator	Unit	Calculation Method
Reduce greenhouse gas emissions by 5% or more compared to FY 2013.	GHG emissions	Tons CO_2	CO_2 emissions: ∑〔(Electricity, fuel oil, gas, and district heating and cooling annual usage) ×CO_2 conversion factor for each type of energy[*1]〕 *1 CO_2 conversion factor: The factor is based on the Act on Promotion of Global Warming Countermeasures. In FY 2013, the conversion factor for electricity was 0.570 tons CO_2/MWh and in FY 2017 it was 0.518 tons CO_2/MWh.
			GHG emissions other than CO_2: Annual emissions of HFCs, PFCs, SF_6, and NF_3 at three semiconductor plants (Mie Fujitsu Semiconductor Limited, Aizu Fujitsu Semiconductor Wafer Solution Limited, and Aizu Fujitsu Semiconductor Manufacturing Limited). ∑〔Annual emissions for each type of gas[*1] × Global warming potential for each gas[*2]〕 *1 Based on the calculation method used by the industries of electrical and electronics: Amount of each gas used (or purchased) × Reactant consumption rate × Removal efficiency, etc. *2 Global Warming Potential (GWP): IPCC (Intergovernmental Panel on Climate Change) Fourth Assessment Report "Climate Change 2007."
	Percentage reduction in total greenhouse gas emissions	% reduction	(Total GHG emissions in FY 2013 – Total GHG emissions in the fiscal year) / Total GHG emissions in FY 2013 × 100
Improve PUE of our major data center by 8% or more compared to FY 2013.	Rate of improvement of PUE	%	PUE = Σ (Total DC energy consumption) ÷ Σ (Total IT device energy consumption) Σ: Combined total energy of the 36 data centers Rate of improvement (%) = (Base year PUE – PUE for the current fiscal year) ÷Base year PUE x 100 Base year: FY 2013
Improve energy intensity by an average 1% or more each year.	Rate of improvement of energy intensity	%	The improvement rate, year on year, for each business site's energy rate index is a weighted average of the proportion to the site's overall energy usage. These values are added to calculate our total improvement rate. Σ〔% improvement year-on-year in each business site's rate index x wt% proportion of overall energy usage〕 Target business sites: Japan (energy management plants specified under the Act on the Rational Use, etc., of Energy), UK and Australia offices
Increase the renewable energy usage rate to 6% or higher.	Renewable energy usage rate	%	Power generated by the company through renewable energy (solar, wind, hydraulic, biomass, geothermal, etc.) or purchased from an outside source ÷ total amount of electric power used

Target Item	Indicator	Unit	Calculation Method
Reduce CO_2 emissions per sales from transport an average of 2% or more.	CO_2 emissions per sales from transport	Tons/100 million yen	Transport CO_2 emissions/sales (100 million yen) * Sales: Excluding the effects of the exchange rate
	Reduction rate of CO_2 emissions compared to the previous fiscal year	% reduction	(Previous fiscal year's transport CO_2 emissions per sales – Current fiscal year's transport CO_2 emissions per sales) / Previous fiscal year's transport CO_2 emissions per sales x 100
Reduce water consumption by 1% in total (128,000 m^3).	Amount of reduction of water use	m^3	Build up the water use reduction impact of measures implemented at each business site (actual or estimated), and calculate the amount of reduction for the current fiscal year.
Reduce chemical pollutant (PRTR) release to less than the average level of FY 2012-2014. (20.7t)	Volume of PRTR-targeted substances	Tons	For 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 business site.
Reduce the amount of waste to less than the average level of FY 2012-2014. (25,568t)	Amount of Waste Generated	Tons	Total amount for industrial waste and general waste generated by factories and offices (Thermal recycling volume + Material recycling volume + Disposal volume)
	Effective utilization ratio (Japan only)	%	(Amount of effective use (thermal recycling & material recycling) / amount of waste generated) x 100

* 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 Liabilities

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

GHG Emissions Report based on GHG Protocol Standards

Indicator		Unit	Calculation Method
Upstream (Scope 3)	Purchased goods and services	Tons	Components purchased during the fiscal year × Emissions per unit of purchases (Source: Embodied Energy and Emission Intensity Data (3EID) published by the National Institute for Environmental Studies Center for Global Environmental Research)
	Capital goods	Tons	Monetary value of capital X Emissions value per unit of capital value (Source: Same as above)
	Fuel and energy – related items not included in Scopes 1 and 2	Tons	Annual amounts of fuel oil and gas, electricity and heat purchased (consumed) mainly at business sites owned by Fujitsu × Emissions per unit (Source: Basic Guidelines for Calculating Greenhouse Gas Emissions Via Supply Chains and the Carbon Footprint Communication Program Basic Database Ver. 1 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)
	Transportation and distribution (upstream)	Tons	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, etc., of Energy. The fuel economy method (for some vehicles) or the improved ton-kilometer method (vehicle, rail, air, ship).
		Tons	International transport/overseas local transport: transportation ton-kilometers x emission per unit (source: GHG protocol emissions coefficient database)
	Waste generated in operations	Tons	Annual amounts of waste (discharged mainly by business sites owned by Fujitsu) processed or recycled, by type and processing method × Emissions per unit of annual amount of waste processed or recycled (Source: Basic Guidelines for Calculating Greenhouse Gas Emissions Via Supply Chains published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)
	Business travel	Tons	(By means of transport) Σ (Transportation expense payment x Emissions per unit) (Source: Basic Guidelines for Calculating Greenhouse Gas Emissions Via Supply Chains Ver. 2.1 and Emissions per Unit Database Ver. 2.1 published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)
	Employee commuting	Tons	For portions of commute by public transportation: (By means of transport) Σ (Transportation expense payment x Emissions per unit) (Source: As above) For portions of commute by private automobile: Σ (Transported persons-kilometer x Emissions per unit) (Source: As above) Transported persons-kilometer is calculated from transportation expense payment, price of gasoline, and fuel efficiency.
	Leased assets (Upstream)	Tons	Annual amounts of fuel oil, gas, electricity, and heat consumed mainly at leased business sites × Emissions per unit of fuel oil, gas, electricity, and heat consumed (Sources - Japan: Act on Promotion of Global Warming Countermeasures - GHG Emissions Accounting, Reporting, and Disclosure System; Overseas: IEA CO_2 Emissions from Fuel Combustion Highlights 2017)
Reporting company (Scopes 1, 2)	Direct emissions	Tons	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 "Greenhouse gas emissions (CO_2 emissions, greenhouse gas emissions other than CO_2) from business sites" in the Environmental Action Plan (Stage VIII).
	Indirect emissions from energy sources	Tons	CO_2 emissions from the consumption (purchase) of electricity and heat mainly at business sites owned by Fujitsu * For the calculation method, see "Greenhouse gas emissions (CO_2 emissions) at business sites" in the Environmental Action Plan (Stage VIII). Use IEA CO_2 Emissions from Fuel Combustion Highlights 2017 for some overseas business sites.

Indicator		Unit	Calculation Method
Downstream (Scope 3)	Processing of sold products	Tons	Intermediate product sales volume x Emissions per unit of processing volume Intermediate product sales volume is Fujitsu's device solution sales. Emissions per unit of processing volume is calculated from Fujitsu's FY 2015 assembly plant data.
	Use of sold products	Tons	Electricity consumption during product use × Emissions per unit of electricity (Source: The Electric Power Council for a Low Carbon Society, Actions for Global Warming Countermeasures in the Electricity Business–FY 2017 Follow-up Results (prior to adjustment)) Electricity consumption during product use is calculated as electricity usage for the anticipated usage time per product unit × Units shipped for the subject fiscal year. Electricity usage for the anticipated usage time per product unit is calculated as electricity consumed (kW) × Time used (h) / Days × Number of days used / Year × 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	(Weight of all sold products / Weight of products processed at Fujitsu's recycling centers during the year) × Electricity used at Fujitsu's recycling centers during the year × Emissions per unit of electricity (Source: Actual emission factor for each electricity utility based on ministerial ordinances on calculation and adjusted emission factor for each electricity utility based on reporting orders, announced for each fiscal year from FY 2011 to FY 2015)

Supplementary Data

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.

Operating Activities and Environmental Load (Material Balance)

Indicator			Unit	Calculation Method
INPUT				
Design/Procurement/ Manufacturing/ Development	Raw Materials		ktons	Material inputs to our major products[**1] shipped 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	or 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 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	For 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), totals are provided for those substances handled in quantities exceeding 100 kg annually per business site, including overseas sites.
	Water usage		m^3	Annual use of clean water, industrial water, and groundwater (not including groundwater extracted for purification or use for melting snow.)
	Amount of Recycled water		m^3	Annual amount of water used for manufacturing and other purposes, then recovered, processed, and used again for manufacturing and other processes
	Energy consumption (calorie basis)		GJ	∑ [(Electricity, fuel oil, gas, and district heating and cooling annual usage) × Thermal conversion factor for each type of energy[*1]] *1 Thermal conversion factor (Heating value unit): According to the "Act on the Rational Use, etc., of Energy" For town gas, conversion factors from each supplier or 44.8 GJ/1,000 ㎥ were used.
		Purchased electricity	MWh	Annual electricity usage
		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)

Indicator			Unit	Calculation Method
INPUT				
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.
Usage	Energy	Electricity	GWh	Electricity consumed in connection with major products[**] shipped during the fiscal year (Amount of electricity used for time estimated per product unit × units shipped in the fiscal year)
			GJ	
Recycling of resources	Resource recycling rate		%	Based on the calculation method provided by JEITA, recycled components and resources as a percentage of the weight of used products processed in Japan. Excludes collected waste other than used electronic products.
	Processed volume		Tons	

Indicator			Unit	Calculation Method
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 × Units shipped in the fiscal year) for the raw materials used in major products[*1] shipped in the fiscal year.
	Chemical Substances	Volume of substances subject to VOC emissions restrictions	Tons	For the 20 VOCs (Volatile Organic Compounds) specified in the environmental voluntary action plans of the four electrical and electronic industry associations,[***] total amounts released are provided for those substances handled in quantities exceeding 100 kg annually 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	For 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 business site, including overseas sites.
	Atmospheric Release	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 VIII).
		GHG emissions other than CO_2	Tons	* For the calculation method, see "Greenhouse gas emissions (GHG emissions other than CO_2) at business sites" in the Environmental Action Plan (Stage VIII).
		NOx emissions	Tons	NOx concentration (ppm)×10-6 × Dry gas emissions (m3N/hr) × Operating time (hr/yr) × 46/22.4×10-3
		SOx emissions	Tons	SOx concentration (ppm)×10-6 × Dry gas emissions (m3N/hr) × Operating time (hr/yr) × 64/22.4×10-3

Indicator			Unit	Calculation Method
	Water Discharge	Wastewater discharges	m^3	Annual water discharges 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) × Water discharges (m^3/yr)×10-6
		COD emissions	Tons	COD concentration (mg/l) × Water discharges(m^3/yr)×10-6
	Waste	Amount of Waste Generated	Tons	* For the calculation method, see "Waste generated" in the Environmental Action Plan (Stage VIII).
		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 re-use, 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.
Usage	Atmospheric Release		Tons CO_2	Emission intensity per electricity has changed since FY 2017. For the calculation method, see "Use of sold products" in the GHG Emissions Report based on GHG Protocol Standards.

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

*** 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).

List of Organizations Covered by the Report on Environmental Activities

■Organizations Covered

The coverage is of Fujitsu itself plus a total of 194 companies (including companies outside Japan) centering on consolidated subsidiaries that have built environmental management systems.

The table below shows the organizations for which individual performance data is gathered.

■Regarding the Indicators:

- Environmental burden: Organizations and Fujitsu's overseas non-manufacturing business sites for which business site environmental burden data is calculated
- Scope 1, 2, 3: Organizations that are the subject of calculations used in the GHG Emissions Report based on GHG Protocol Standards (P131)
- Logistics: Organizations for which logistics and transport data is calculated
- Environmental Accounting: Organizations for which environmental accounting data is calculated
- EMS: Organizations with Environmental Management Systems (EMS)

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
1	Fujitsu Limited	✓	✓	✓	✓	✓

Fujitsu Group companies in Japan (140 companies)

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
1	Fujitsu Advanced Printing & Publishing Co., Ltd.		✓	✓		✓
2	FUJITSU HOME & OFFICE SERVICES LIMITED		✓			✓
3	Fujitsu University		✓			✓
4	Kawasaki Frontale Limited		✓			✓
5	Fujitsu Travelance Ltd.		✓			✓
6	Fujitsu Human Resource Professionals Limited		✓			✓
7	Fujitsu Techno Research Limited		✓			✓
8	Fujitsu CIT Limited		✓			✓
9	Toyama Fujitsu Limited	✓	✓			✓
10	Fujitsu Facilities Limited		✓			✓
11	OKINAWA FUJITSU SYSTEMS ENGINEERING LIMITED		✓			✓
12	DIGITAL PROCESS LTD.		✓			✓
13	PFU LIMITED	✓	✓	✓	✓	✓
14	FUJITSU BANKING SOLUTIONS LIMITED		✓			✓
15	SHIGA FUJITSU SOFTWARE LIMITED		✓			✓
16	FUJITSU BROAD SOLUTION & CONSULTING Inc.		✓			✓
17	FUJITSU SOCIAL SCIENCE LABORATORY LIMITED		✓			✓
18	FUJITSU YFC LIMITED		✓			✓

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
19	FUJITSU NIIGATA SYSTEMS LIMITED		✓			✓
20	FUJITSU HOKURIKU SYSTEMS LIMITED		✓			✓
21	FUJITSU KYUSHU SYSTEMS LIMITED		✓			✓
22	FUJITSU KYUSHU SYSTEMS SERVICES LIMITED		✓			✓
23	FUJITSU KAGOSHIMA INFORNET LIMITED		✓			✓
24	FUJITSU FIP CORPORATION	✓	✓			✓
25	FUJITSU FIP SYSTEMS CORPORATION		✓			✓
26	FUJITSU FIP DC CORPORATION		✓			✓
27	FUJITSU FIP KYUSHU CORPORATION		✓			✓
28	FUJITSU CLOUD TECHNOLOGIES LIMITED		✓			✓
29	G-Search Limited		✓			✓
30	FUJITSU FSAS INC.		✓	✓		✓
31	Fujitsu FSAS Creative Inc.		✓			✓
32	Fujitsu FSAS Systems Inc.		✓			✓
33	Fujitsu FSAS Customer Service Inc.		✓			✓
34	Fujitsu FSAS Higashi-Nihon Customer Service Inc.		✓			✓
35	Fujitsu FSAS Tokai Customer Service Inc.		✓			✓
36	Fujitsu FSAS Hokuriku Customer Service Inc.		✓			✓
37	Fujitsu FSAS Kansai Customer Service Inc.		✓			✓
38	Fujitsu FSAS Shikoku Customer Service Inc.		✓			✓
39	Fujitsu FSAS & Sun LTD.		✓			✓
40	FUJITSU COMMUNICATION SERVICES LIMITED		✓			✓
41	FUJITSU NETWORK SOLUTIONS LIMITED		✓			✓
42	Fujitsu Frontech Limited	✓	✓	✓	✓	✓
43	LIFE CREATE LIMITED		✓			✓
44	FUJITSU FRONTECH SYSTEMS LIMITED		✓			✓
45	FUJITSU SYSTEM INTEGRATION LABORATORIES LIMITED		✓			✓
46	FUJITSU TOKKI SYSTEMS LIMITED		✓			✓
47	FUJITSU DEFENSE SYSTEMS ENGINEERING LIMITED		✓			✓
48	Fujitsu Applications, Ltd.		✓			✓
49	FUJITSU LEARNING MEDIA LIMITED		✓			✓
50	FUJITSU RESEARCH INSTITUTE		✓			✓
51	Fujitsu Marketing Limited		✓	✓		✓
52	Fujitsu Marketing Agent Ltd.		✓			✓
53	Fujitsu Marketing Office Services Ltd.		✓			✓
54	FUJITSU FOM LIMITED		✓	✓		✓
55	FUJITSU CoWorCo LIMITED		✓	✓		✓
56	TWO-ONE LIMITED		✓			✓
57	FUJITSU I-NETWORK SYSTEMS LIMITED	✓	✓	✓	✓	✓
58	ECOLITY SERVICE LIMITED		✓		✓	✓

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
59	FUJITSU ADVANCED ENGINEERING LIMITED		✓			✓
60	Fujitsu Software Technologies Limited		✓			✓
61	FUJITSU MIDDLEWARE LIMITED		✓			✓
62	Fujitsu Kyushu Network Technologies Limited		✓			✓
63	Fujitsu Telecom Networks Limited	✓	✓	✓	✓	✓
64	Fujitsu Telecom Networks Fukushima Limited	✓	✓			✓
65	Fujitsu Telecom Networks Kowa Limited	✓	✓			✓
66	FUJITSU COMPUTER TECHNOLOGIES LIMITED		✓			✓
67	FUJITSU IT PRODUCTS LIMITED	✓	✓	✓	✓	✓
68	Fujitsu Isotec Limited	✓	✓	✓	✓	✓
69	FIT FRONTIER LIMITED	✓	✓			✓
70	FUJITSU PERIPHERALS LIMITED	✓	✓	✓	✓	✓
71	FUJITSU PERSONAL SYSTEM LIMITED		✓	✓		✓
72	Shimane Fujitsu Limited	✓	✓	✓	✓	✓
73	FUJITSU KASEI LIMIED	✓	✓	✓	✓	✓
74	FUJITSU KASEI RECYCLE LIMITED		✓			✓
75	Fujitsu Interconnect Technologies Limited	✓	✓	✓	✓	✓
76	FUJITSU QUALITY LABORATORY LIMITED		✓			✓
77	FUJITSU QUALITY LABORATORY ENVIRONMENT CENTER LTD.		✓			✓
78	Eco Analysis Corporation		✓			✓
79	Fujitsu Optical Components Limited	✓	✓	✓	✓	✓
80	FUJITSU KANSAI-CHUBU NET-TECH LIMITED		✓			✓
81	Fujitsu Mission Critical Software LTD.		✓			✓
82	FDK CORPORATION	✓	✓	✓	✓	✓
83	FDK SALES CO., LTD.		✓			✓
84	FDK ENGINEERING CO., LTD.	✓	✓			✓
85	FDK PARTNERS CORPORATION		✓			✓
86	FDK ECOTEC CO., LTD.	✓	✓			✓
87	FUJITSU COMPONENT LIMITED	✓	✓	✓	✓	✓
88	SHINANO FUJITSU LIMITED	✓	✓			✓
89	TEC CO., LTD.		✓			✓
90	CHIKUMA TSUSHIN INDUSTRY CO., LTD.	✓	✓			✓
91	MIYAZAKI FUJITSU COMPONENTS LIMITED	✓	✓			✓
92	TAKAMISAWA ELECTRIC CO., LTD. Shinshu Plant	✓	✓			✓
93	Transtron Inc.		✓	✓	✓	✓
94	FUJITSU ELECTRONICS INC.		✓	✓		✓
95	Fujitsu Devices Inc.		✓			✓
96	FUJITSU FACILITIES ENGINEERING LIMITED		✓			✓
97	SHINKO ELECTRIC INDUSTRIES CO. LTD.	✓	✓	✓	✓	✓
98	SHINKO PARTS CO., LTD.		✓			✓

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
99	SHINKO TECHNOSERVE CO., LTD.		✓			✓
100	FUJITSU TEN LIMITED	✓	✓		✓	✓
101	FUJITSU TEN MANUFACTURING LIMITED	✓	✓		✓	✓
102	FUJITSU LABORATORIES LTD	✓	✓		✓	✓
103	FUJITSU SEMICONDUCTOR LIMITED	✓	✓	✓		✓
104	Fujitsu Design Limited		✓			✓
105	Fujitsu Advanced Technologies Limited		✓			✓
106	FUJITSU CAPITAL LIMITED		✓			✓
107	MIE FUJITSU SEMICONDUCTOR LIMITED	✓	✓		✓	✓
108	AIZU FUJITSU SEMICONDUCTOR LIMITED	✓	✓			✓
109	AIZU FUJITSU SEMICONDUCTOR WAFER SOLUTION LIMITED	✓	✓		✓	✓
110	AIZU FUJITSU SEMICONDUCTOR MANUFACTURING LIMITED	✓	✓		✓	✓
111	Fujitsu IT Management Partner Co. Ltd.		✓			✓
112	Fujitsu IS Service Limited		✓			✓
113	Fujitsu Quality & Wisdom Limited		✓			✓
114	FUJITSU CLIENT COMPUTING LIMITED		✓		✓	✓
115	FUJITSU CONNECTED TECHNOLOGIES LIMITED		✓		✓	✓
116	FUJITSU PUBLIC SOLUTIONS LIMITED		✓			✓
117	FUJITSU ADVANCED SYSTEMS LIMITED		✓			✓
118	Fujitsu Systems Applications & Support Limited		✓			✓
119	FUJITSU YAMAGUCHI INFORMATION CO.,LTD		✓			✓
120	FUJITSU SHIKOKU INFOTEC LIMITED		✓			✓
121	FUJITSU SYSTEMS WEB TECHNOLOGY LIMITED		✓			✓
122	FUJITSU NETWORK SERVICE ENGINEERING LIMITED		✓			✓
123	FUJITSU SOCIAL LIFE SYSTEMS LIMITED		✓			✓
124	Mobile Techno Corp.		✓			✓
125	Carenet Limited		✓			✓
126	Fujitsu Advance Accounting service Limited		✓			✓
127	Fujitsu Harmony Limited		✓			✓
128	Fujitsu Banking Information Technology Limited		✓			✓
129	UCOT Infotechno co.,Ltd		✓			✓
130	AB System Solutions Limited		✓			✓
131	ZIS INFORMATION TECHNOLOGY CORPORATION		✓			✓
132	Fujitsu Yamagata Information Technology Limited.		✓			✓
133	BANKING CHANNEL SOLUTIONS Limited		✓			✓
134	IT MANAGEMENT PARTNERS LIMITED		✓			✓
135	YJK Solutions Co.,Ltd.		✓			✓
136	Best Life Promotion Ltd.		✓			✓
137	Fujitsu Traffic & Road Data Service Limited		✓			✓
138	Future City Solutions Limited		✓			✓

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
139	TechShop Japan Limited		✓			✓
140	Fujitsu Engineering Technologies Limited		✓			✓

Fujitsu Group companies worldwide（53companies）

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
1	FUJITSU COMPUTER PRODUCTS OF VIETNAM	✓	✓			✓
2	江蘇富士通通信技術有限公司 (Jiangsu Fujitsu Telecommunications Technology Co., Ltd.)		✓			✓
3	Fujitsu Electronics Pacific Asia Limited		✓			✓
4	Fujitsu Electronics (Shanghai) Co., Ltd.		✓			✓
5	FUJITSU HONG KONG LIMITED		✓			✓
6	FUJITSU DO BRASIL LIMITADA	✓	✓			✓
7	FUJITSU ASIA PTE LTD		✓			✓
8	FUJITSU NETWORK COMMUNICATIONS INC.	✓	✓	✓	✓	✓
9	Fujitsu America, Inc.	✓	✓	✓		✓
10	Fujitsu (Thailand) Co., Ltd.		✓			✓
11	Fujitsu PC Asia Pacific Pte Ltd.		✓	✓		✓
12	FUJITSU AUSTRALIA LTD.	✓	✓	✓		✓
13	Fujitsu Technology Solutions GmbH	✓	✓	✓	✓	✓
14	Fujitsu Electronics Europe GmbH		✓			✓
15	南京富士通南大軟件技術有限公司 (Fujitsu Nanda Software Technology Co., Ltd)		✓			✓
16	FUJITSU SERVICES HOLDINGS PLC		✓	✓		✓
17	FUJITSU KOREA LTD.		✓			✓
18	台湾富士通股分有限公司 (FUJITSU TAIWAN LIMITED)		✓			✓
19	Fujitsu Telecomunication Asia Sdn. Bhd.		✓			✓
20	富士通(中国)信息系統有限公司 (Fujitsu (China) Holdings Co., Ltd.)		✓			✓
21	Fujitsu Technology and Business of America, Inc.		✓			✓
22	富士通(西安)系統工程有限公司 (FUJITSU (XI'AN) SYSTEM ENGINEERING Co.,Ltd.)		✓			✓
23	北京富士通系統工程有限公司 (Beijing Fujitsu System Engineering Co., LTD.)		✓			✓
24	Fujitsu Glovia, Inc.		✓			✓
25	FUJITSU AUSTRALIA SOFTWARE TECHNOLOGY PTY. LTD.		✓			✓
26	FUJITSU Enabling Software Technology GmbH		✓			✓
27	Fujitsu Electronics America, Inc		✓			✓
28	Fujitsu Electronics Korea Ltd.		✓			✓

No.	Company name	Environ-mental burden	Scope 1,2,3	Logistics	Environ-mental Account-ing	EMS
29	富士通研究開発中心有限公司 (Fujitsu Research and Development Center Co., LTD.)		✓			✓
30	Fujitsu Computer Products of America		✓	✓		✓
31	Fujitsu Frontec North America Inc	✓	✓	✓		✓
32	FUJITSU COMPONENTS (CHANGZHOU) CO., LTD.	✓	✓			
33	QINGDAO KOWA SEIKO CO., LTD.	✓	✓			
34	FUJITSU COMPONENT (MALAYSIA) SDN. BHD.	✓	✓			
35	PT FDK INDONESIA	✓	✓			
36	XIAMEN FDK CORPORATION	✓	✓			
37	SUZHOU FDK CO., LTD.	✓	✓			
38	FUCHI ELECTRONICS CO., LTD. (富積電子)	✓	✓			
39	FUJITSU TEN CORP. OF THE PHILIPPINES	✓	✓			
40	FUJITSU TEN de MEXICO, S.A.de.C.V.	✓	✓			
41	FUJITSU TEN (THAILAND) COMPANY LIMITED	✓	✓			
42	FUJITSU TEN　ELECTRONICS (WUXI) LTD.	✓	✓			
43	FUJITSU TEN ESPANA S.A.	✓	✓			
44	FUJITSU DIE-TECH CORPORATION OF THE PHILIPPINES	✓	✓			✓
45	SHINKO ELECTRIC INDUSTRIES (WUXI) CO., LTD.	✓	✓			
46	KOREA SHINKO MICROELECTRONICS CO., LTD.	✓	✓			
47	SHINKO ELECTRONICS (MALAYSIA) SDN. BHD.	✓	✓			
48	TRANSTRON (THAILAND) CO., LTD.		✓			✓
49	Fujitsu Consulting India	✓	✓			
50	富士通(中国)有限公司 (FUJITSU (CHINA) Co., Ltd.)		✓			✓
51	FUJITSU FINANCE AMERICA INCORPORATED		✓			✓
52	FUJITSU EMEA PLC		✓			✓
53	FUJITSU SYSTEMS GLOBAL SOLUTIONS MANAGEMENT SDN. BHD.		✓			✓