FUJITSU

Fujitsu Group Environmental Report

2015

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Fujitsu Group Environmental Report 2015

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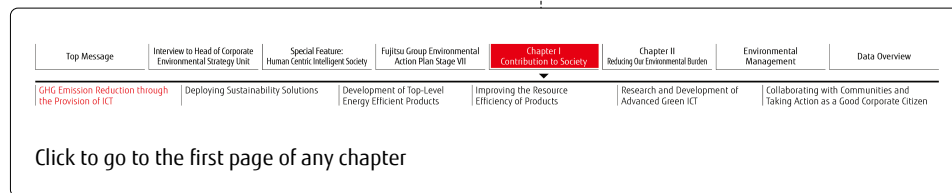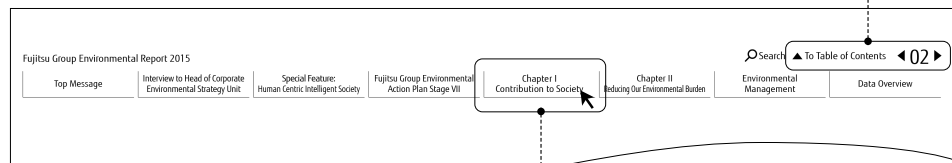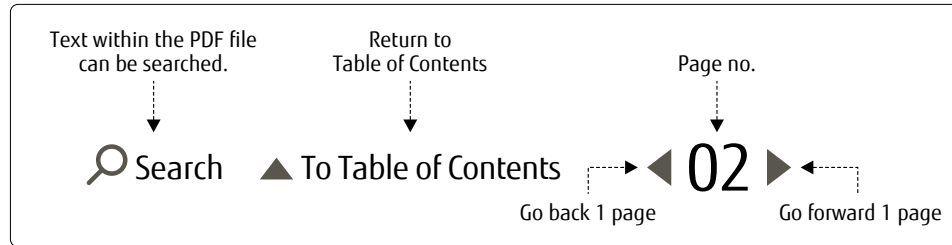
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User Guide

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Editorial Policy

With a focus on future plans, the Fujitsu Group Environmental Report 2015 offers a report on our recognition of environmental initiatives, our approach to initiatives, and our performance and major activities in FY 2014, in line with the Fujitsu Group Environmental Action Plan (Stage VII, FY 2013–FY2015) that was formulated on the basis of expectations and requests from society and of important environmental aspects of the Fujitsu Group. Fujitsu Group strives to improve the reliability and transparency of the content of reports, through means including subjecting major data to examination by third-party organizations and publishing third-part opinions concerning indicators. In addition, we have taken ease of reading on PCs and tablets into account through a horizontally oriented page layout.

■ Reporting Period

This report focuses on activities in FY 2014, from April 1, 2014 to March 31, 2015, and the data presented is actual performance data from that period. Content from times outside that period, however, is also presented.

■ Target Readership

This report is written assuming the following readership: All Fujitsu stakeholders, with high interest in environmental topics, including customers, employees, stockholders and investors, suppliers and business partners, international society and local communities, public institutions, and governments and specialists such as CSR survey institutions.

■ Organizations Covered

The coverage is of Fujitsu itself plus a total of 116 companies (including companies outside Japan) centering on consolidated subsidiaries that have built environmental management systems.

≫ List of Organizations Covered by the Report on Environmental Activities (See Page 60)

≫ Environmental Performance Data Calculation Standards (See Page 57)

■ Significant Changes in Coverage

• In December 2014, Fujitsu Semiconductor Technology Limited (FSET) and the Mie Plant and Aizu Plant of Fujitsu Semiconductor Limited (FSL) were removed from the scope of reporting on environmental burden data, which was changed to four companies: Mie Fujitsu Semiconductor Limited (MIFS), Aizu Fujitsu Semiconductor Limited (AFSL), Aizu Fujitsu Semiconductor Wafer Solution Limited (AFSW), and Aizu Fujitsu Semiconductor Manufacturing Limited (AFSM). In addition, environmental accounting data for FSL and FSET is presented as data for MIFS, AFSW, and AFSM from December 2014.

• From April 2014, the environmental impact, logistics, and environmental accounting data of Fujitsu Mobile-phone Products Limited has been aggregated into FUJITSU PERIPHERALS LIMITED.

• The environmental impact data and environmental accounting data of Fujitsu VLSI Limited have been excluded from reporting from February 2014 and from April 2014, respectively.

■ Guidelines Used and Referenced

• GRI G4 Sustainability Reporting Guidelines
• Ministry of the Environment: Environmental Reporting Guidelines (2012 edition) (Japanese)
• Ministry of the Environment: Environmental Accounting Guidelines (2005 edition) (Japanese)

■ Published

August 2015 (The next report will be published in August 2016 and the previous report was published in August 2014.)

For inquiries about this report, please contact:

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http://www.fujitsu.com/global/about/environment/management/communication/contact.html

A Note Concerning Future Projections, Forecasts and Plans

This report not only describes past and present facts related to the Fujitsu Group but also includes future projections, forecasts and plans. Such projections, forecasts and plans are based on data available when the report was prepared, and therefore involve a degree of uncertainty.
Accordingly, future results of operating activities and other new developments may differ from the projections, forecasts and plans included in this report. We ask our readers' understanding of the fact that the Fujitsu Group cannot be responsible for such eventualities.

We welcome your feedback

Fujitsu welcomes readers' comments on this report, which are used as statistical data to help us create better reports. We thank you in advance for your cooperation.

WEB http://www.fujitsu.com/global/about/environment/management/communication/report/

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Top Message

Fujitsu Group will Strive for a Human Centric Intelligent Society in Pursuit of a Vibrant Global Environment and a Sustainable Society.

Tatsuya Tanaka
Fujitsu Limited President

Sustainability for the Global Environment is One of Our Strategic Management Issues

A beautiful planet is the wellspring of life, and business growth is inconceivable without sustainability for the Earth and our society. As the world's population grows toward eight billion people, it is pressingly urgent that we optimize our use of limited global resources and energy and carry out sustainable management, to say nothing of confronting the increasing severity of global warming and climate change. The Fujitsu Group believes that its ICT can be a powerful force in addressing these critical issues.

Working Together to Resolve Global Environmental Issues through Human Centric Innovation

For the Fujitsu Group, the use of ICT for empowering people, combined with our goal of contributing to a safe, prosperous, and sustainable society, is the central focus of our business activities and is part of our vision of a Human Centric Intelligent Society. Now more than ever, network possibilities are expanding for leveraging massive amounts of Big Data, with innovation in the hands of anyone.

Innovation that advances together with you can lead to solutions for very complicated social and global environmental problems. With regard to global warming, for example, Fujitsu is working toward energy utilization and mobility optimization for mega-cities, support for regional safety and security, and preparations against natural disasters.

Furthermore, we are providing real time "visualized" representations of knowledge, information, and phenomena leading to sustainable development unbeholden to economic theory. Moreover, we are engaged in agricultural efforts to stably supply food despite climate fluctuations, and we are working on monitoring the atmosphere and water on a global scale in order to support individuals and generate new value.

Toward Environmental Management Supporting Not Only Customers but also the Sustainability of Society

Along with contributing to sustainability through our business, we also implement our own thorough efforts. We build and operate durable datacenters with extensive energy saving features and make concerted efforts toward ensuring our own resiliency.

Going forward, we intend to further increase the robustness of these contributions through our business by leveraging services with integrated products and solutions that drive forward our business strategies. We are doing so by building an ecosystem in union with our diverse stakeholders. We will continue our efforts toward globally addressing large-scale issues and will strive to solve environmental challenges across our entire value chain.

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Interview

The Head of Corporate Environmental Strategy Unit Discusses

Fujitsu's Environmental Management

Minoru Takeno
VP, Head of Corporate Environmental Strategy Unit

Leverage ICT to Solve Global Issues and Empower Human Creativity

Climate change presents a challenge on a global scale. "Mitigating" global warming from emissions of GHG is a matter of course, while it is also extremely important to pursue measures for "adapting" to the various effects that climate change has on abnormal weather, natural disasters, water resources, food supplies, health, etc.
The Fujitsu Group is leveraging ICT to empower people to handle these types of challenges.
In addition, we, and our diverse stakeholders, are working together from mid- and long-term perspectives to generate systems and solutions that contribute to solving issues.
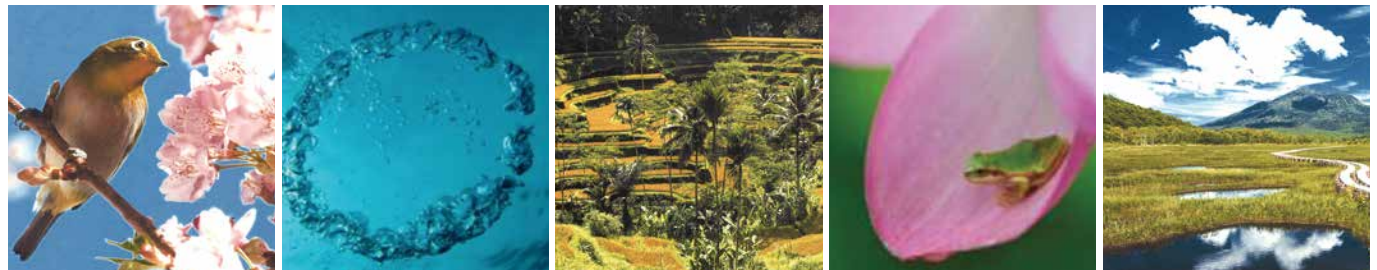
Shown are photographs taken by Fujitsu Group employees for the annual company Environmental Photo Contest.

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Q1 — Amidst the Concern over Climate Change and Other Environmental Challenges, How Can ICT Contribute?

A1 — ICT Can Contribute by Empowering the People Striving to Overcome the Various Issues Arising in Conjunction with Climate Change.

Climate change's major risks for multiple domains and regions

Rising sea and tide levels — Impacts to coastal lowlands and islands

Floods and heavy precipitation — Impacts to urban city dwellers

Extreme weather events — Disruptions to infrastructure functions

Heat waves — Death and harmful effects on health

Rising temperatures and droughts — Food shortages

Water shortages — Decreased agricultural productivity

Loss of terrestrial ecosystems — Loss of ecosystem support

Loss of marine ecosystems — Heavy impact on fishing industries

What are the major risks of the future?

Compiled by Fujitsu based on the IPCC Fifth Assessment Report

At the end of 2015, COP21 (the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change) is scheduled to be held and an agreement is expected for general countermeasures against climate change and global warming from 2020. Also in 2015, the UN summit in September is expected to adopt the "post-2015 development agenda" summarizing the social and environmental challenges that our global society will need to solve.

Given this context, it is arguable that there will be a shift toward stronger actions at global, national, corporate, and individual levels to work together toward solving social and environmental problems. According to the IPCC's (Intergovernmental Panel on Climate Change) Fifth Assessment Report, there is a need to undertake reduction of GHG emissions and to make greater efforts to "mitigate" global warming. The IPCC report further discusses the necessity of "adaptation" to the effects of global warming. It is also important that we consider and enact countermeasures against issues related to crops and water resources, natural disasters, health issues and other impacts created by climate change.

ICT has been able to promote the efficient use of energy and resources in lifestyles and industries, and by doing so has contributed to the reduction of GHG emissions. At the same time, we believe that ICT can also make great contributions in the increasingly important aspect of "adapting" to the effects of global warming. ICT enables speedy collection and analysis of complex and voluminous information, providing support for the decisions and actions of people.

ICT can be used to provide, for example, not only more visible representations of various types of data collected with sensors, but can also be used to forecast future changes, toward which actions can be taken. In other words, events and things in the world can be connected to the conduct of people and creativity can be empowered by leveraging ICT.

Yet an even broader perspective than this is necessary. Fujitsu has received the following advice from an informed expert: "Since Fujitsu is a leading ICT company, it should connect the entire industry, or society, to create platforms and systems for addressing various issues." We share this opinion. We are looking at the possibilities for collaborating with other industries and building ecosystems. Going forward, we will work from mid- and long-term perspectives to adopt a broad vision and deliver systems and solutions with great value. This is nothing other than the new value-creating "human centric innovation" promoted by the Fujitsu Group.
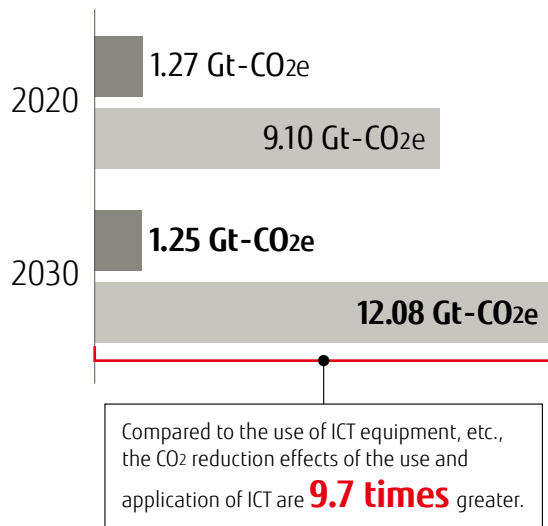
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Q2

On the One Hand ICT Contributes to Reducing Environmental Impacts, but Doesn't ICT Also Exhibit Negative Aspects?

A2

This is the Reason for a Need to Take Action from the Two Standpoints of Reducing Fujitsu's Environmental Impacts to Near Zero and Helping Customers and Society Reduce Their Impacts.

CO2 Emissions Volume of ICT, and the CO2 Emission Reduction Effect of the Use and Application of ICT

■ CO_2 emissions from the use of ICT equipment, etc. ("of ICT")
■ CO_2 emissions reduction effect from the use and application of ICT ("by ICT")

2020
1.27 Gt-CO_2e
9.10 Gt-CO_2e

2030
1.25 Gt-CO_2e
12.08 Gt-CO_2e

Compared to the use of ICT equipment, etc., the CO_2 reduction effects of the use and application of ICT are **9.7 times** greater.

Graph created by Fujitsu based on the Global e-Sustainability Initiative's SMARTer2030 report.

The global population of Internet users now exceeds 2.7 billion people and services such as those using cloud technology are growing widely. The age of the Internet of Things (IoT), in which automobiles, appliances, wearable devices, and all manner of things in the world connect over networks, is said to be upon us, and the number of things connected worldwide over the Internet is predicted to increase from 10 billion in 2013 to 50 billion in 2020.

Amid these conditions, ICT is, as mentioned previously, expected to play a role in empowering the human creativity that will change the nature of lifestyles, business, and society for the better. At the same time, however, it is a fact that GHG emissions increase due to the spread of ICT. Even if the amount of GHG emissions by individual devices is small, if their number is large, the total emissions will be enormous.

Two standpoints, "by ICT" and "of ICT," are necessary in order to address these positive and negative realities and to reduce the total environmental burdens of ICT. The use and application of ICT contributes to the reduction of environmental impacts in society overall (which is what we call "by ICT") and positive effects expand. At the same time, we must reduce the GHG emissions that accompany the use

of ICT devices ("of ICT") and minimize negative effects through efforts such as the provision of environmentally considerate products.

The Fujitsu Group has taken an early lead in basing initiatives on the two standpoints of "by ICT" and "of ICT." An example of this is our datacenters. Datacenters operate efficiently, aggregating customers' servers and other equipment, and thus contribute to reducing the overall GHG emissions of society, though an increase in the number of datacenters also adds to GHG emissions.

The Fujitsu Group operates more than 100 datacenters throughout the world and, in anticipation of the coming age of the IoT, has plans to further increase that number. Each of our major datacenters has set environmental targets and is working to improve its environmental performance, starting with energy efficiency. Needless to say, the servers and other products inside each datacenter are being designed for maximum environmental performance.
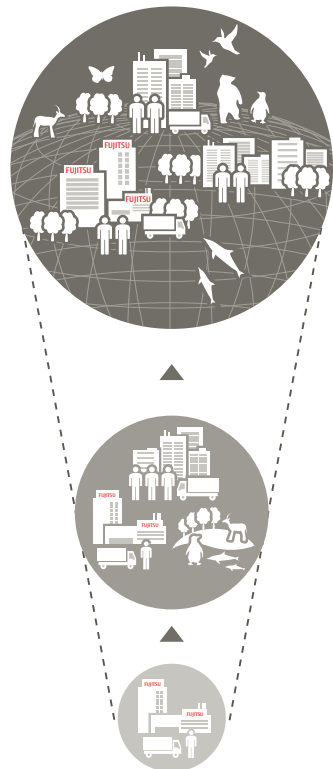
By accelerating these efforts from here on out, we will work to reduce our own environmental impacts to near zero while further contributing to the reductions of GHG emissions by customers and society.

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Q3 | How is the Progress of the Environmental Action Plan (Stage VII)?

A3 | We Have Achieved All of the Annual Targets in Each Category and Have Revised Upward Our Targets for GHG Emission Reductions from the Provision of ICT.

Changes in the Fujitsu Group Environmental Action Plan

Stage VII (FY 2013–2015)

Highlight the contributions from our business operations

- Provide solutions able to contribute to the reduction of GHG emissions by customers and society
- Consolidate the energy saving performance of datacenters
- Strengthen the environmental features of products (energy saving, resource saving features)
- Generate technologies and solutions to address diverse social issues

Stage VI (FY 2010–2012)

Promotion of environmental management centered on the three pillars of contribution to customers and society overall, further reduction of our own environmental impacts, and conservation of biodiversity.

Stage I-V (FY 1993–2009)

Thorough enhancement of the Fujitsu Group's own consideration of the environment

The Fujitsu Group launched the Environmental Action Plan (Stage VII) in FY 2013. In the Stage VII plan, we have made the contributions of our business activities more clear, reaffirming that our business contributes to reducing the environmental burden of customers and society and thus contributes to sustainability of the planet, while also reaffirming that our contribution is great in comparison with the impacts we place on the environment.

In particular, as the use of ICT cannot be separated from the use of electric power, the impact of Fujitsu Group's business on the environment, whether negative or positive, is most dependent upon energy consumption and the subsequent emission of GHGs. For that reason, we emphasized the importance of reducing GHG emissions in our Environmental Action Plan (Stage VII), and are focusing on providing solutions able to contribute to the reduction of GHG emissions by customers and society, as well as on developing and providing energy-saving and resource-saving products.

So far, two years of Stage VII have been completed and FY 2015 will mark the third and final year. For our focus initiatives of "GHG emission reductions through the provision of ICT" and "designing and delivering eco-efficient products: resource efficiency," we have posted results equivalent to those targeted for the end of FY 2015 and, accordingly, have revised our

targets upward. With regard to other categories, we have achieved all of the FY 2014 targets. In FY 2015, we certainly plan to reduce GHG emissions through the provision of ICT, while also further strengthening energy saving performance at the previously mentioned datacenters.

To realize a sustainable society, we must work toward not only energy conservation but also creation of technologies and solutions to address the host of social issues brought about by climate change, population increase, the aging of society, and other changes. The Fujitsu Group will continue to expand the solutions we provide that contribute to sustainability and we will actively push forward technological developments to make that possible.

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Q4 Please Explain the Environmental Action Plan (Stage VIII) Starting in FY 2016 and the Future Direction of Environmental Management.

A4 We are Deliberating on Those Items from the Two Standpoints of Continuing our Current Activities and Defining the Mid- to Long-Term Presence that We Want to Have.

Holding environmental dialogues

Fujitsu is holding on-going dialogues involving external experts to deliberate on solutions to environmental issues and to discuss the direction of the Group going forward. (See Page 50.)

Concluding the Dialogues

Comments from Minoru Takeno, Head of the Environment Strategy Unit

We will continue to execute matters, such as compliance, etc., that are simply fundamental to our business. On top of that, we think that it is important to show how we are working to refine the superiority and distinctiveness that form the ideal that we are striving for as the Fujitsu Group.

It is important for each and every employee to have an awareness, with respect to the people who will be alive in 2050, 2100, and beyond, of how our responsibility to preserve the Earth is tied to our decisions and actions today. I believe that we need to continue to pursue our internal education in order to share this idea.

At the moment, we are discussing Stage VIII of the plan while organizing the results and challenges from Stage VII. Focus will be placed on the continuing global priority issue of reducing GHG emissions, just as was the case with Stage VII. Going forward, however, there is a trend of increasing demand for managing and reducing absolute GHG emissions through independent efforts, rather than only making improvements measured per unit of sales. In formulating Stage VIII of the plan, we must take this demand from society into account.

At the same time, there are increasing movements by customers toward recognizing environmental benefits as a new kind of value. Needs are increasing for solutions that improve environmental performance and contribute to reducing environmental impacts. Responding to these needs and providing products and services in key domains with growth strategies will both solve environmental issues and expand business. This is also the direction of environmental management in the Fujitsu Group.

At present, we have identified technology solutions focused on cloud, mobile, big data, and security as one of our growth strategies in the Group. For example, after implementing solutions leveraging big data within the Fujitsu Group, then analyzing and evaluating the benefits for reducing environmental impacts, it is possible to make proposals to customers using reference models incorporating the expertise from those solutions.

In addition, another of our major growth strategies is to strengthen our global expansion. In the future, all of our business activities will see further progress in global collaboration. In our Environmental Action Plan as well, we have not divided Japan and overseas into separate categories since Stage VII. We would like to further develop this approach in Stage VIII and use feedback from associates overseas to pursue an action plan and targets that presuppose the global expansion of the environmental value of our technologies, products, and services.

As such, Stage VIII will naturally be based on growth strategies that take into account the results of Stage VII, and we plan for it to also incorporate even more mid- and long-term perspectives. Internal discussions are focusing on the presence that the future Fujitsu Group would like to have in 2030, 2050, and beyond. Backcasting from those time points, we are considering what we must do and what targets we must accomplish each year to reach that reality, and then we are building the answers into Stage VIII of the plan. Reflecting the two perspectives of our accumulated activities to this point and the future presence that we are striving for, we are crafting an internally consistent Environmental Action Plan Stage VIII and will continue to make contributions to our customers and to society.

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Special Feature

Human Centric Intelligent Society

Leveraging the Power of ICT to Build a Safe, Prosperous, and Sustainable Society

The Fujitsu Group has made a "Human Centric Intelligent Society" its Group vision.
Along with aiming for an abundant future and greater possibilities for innovation through ICT, we are supporting the individuals bringing about these benefits.

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Special Feature
Human Centric Intelligent Society

Toward Realizing a Hydrogen Energy Society and Wider Use of Fuel Cell Vehicles
—the Ultimate Eco Cars

Deploying a Hydrogen Station Information Management Service

Theme

Greater availability of hydrogen fuelling stations is the key infrastructure element needed to achieve a hydrogen energy society

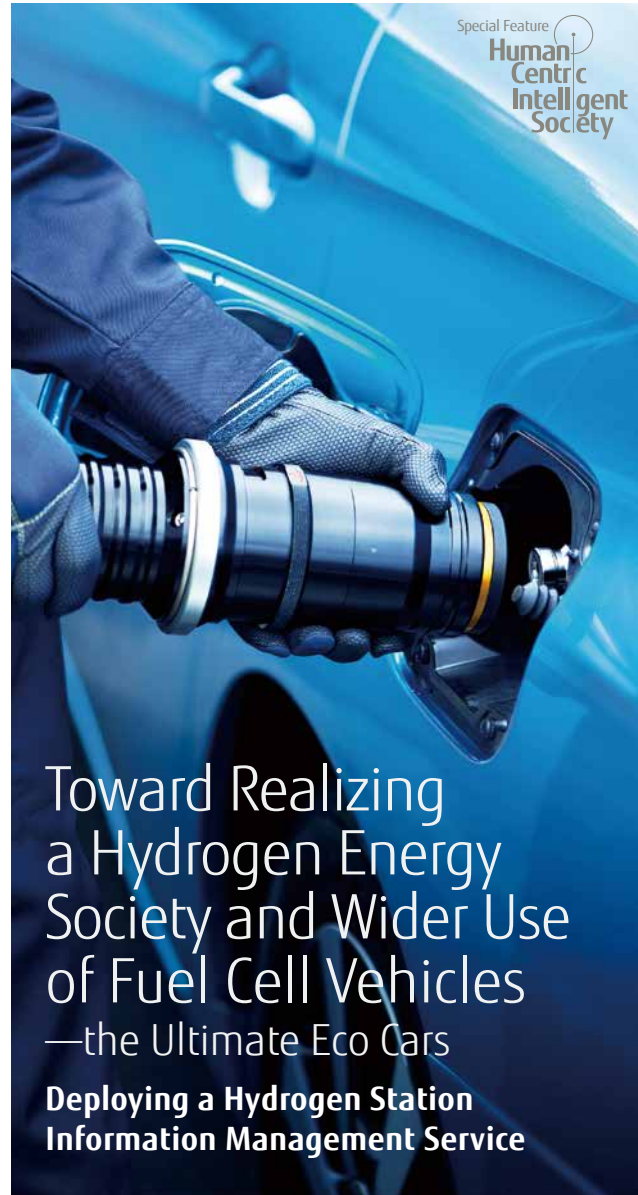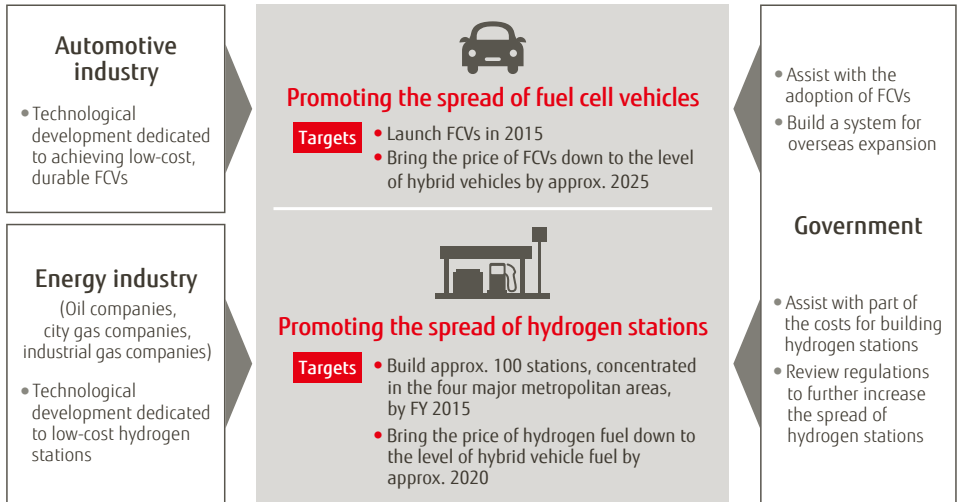Amidst the growing severity of environmental issues, such as the risk of fossil fuel depletion, global warming, etc., hydrogen is attracting attention as a next-generation source of clean energy that does not emit CO_2. The government in Japan, where energy resources are in short supply, is aggressively pushing forward the use and application of hydrogen as a major energy strategy issue.

In 2014, fuel cell vehicles (FCV), which use fuel cells that generate electricity via the chemical reaction between hydrogen and oxygen, came onto the market and expectations are for them to lead the way toward realizing a hydrogen energy society. At the same time, over-arching collaboration between the government, municipalities, and companies in various industries is indispensible for building the infrastructure that holds the key to hydrogen availability. There are various hurdles to building hydrogen fuelling stations for FCVs. Among these are the high cost of construction and the need to comply with domestic regulations on high-pressure gas.

As of the end of FY 2014, there are only 17 hydrogen stations nationwide that are in fixed locations similar to conventional gas stations. In recent years, mobile hydrogen stations offering the benefits of low-cost construction and easier acquisition of operating space are becoming more prevalent—a trend which is expected to continue in the future.

Diagram of public-private collaboration for increasing fuel cell vehicles (FCV)

Automotive industry
- Technological development dedicated to achieving low-cost, durable FCVs

Promoting the spread of fuel cell vehicles
Targets
- Launch FCVs in 2015
- Bring the price of FCVs down to the level of hybrid vehicles by approx. 2025

Energy industry
(Oil companies, city gas companies, industrial gas companies)
- Technological development dedicated to low-cost hydrogen stations

Promoting the spread of hydrogen stations
Targets
- Build approx. 100 stations, concentrated in the four major metropolitan areas, by FY 2015
- Bring the price of hydrogen fuel down to the level of hybrid vehicle fuel by approx. 2020

- Assist with the adoption of FCVs
- Build a system for overseas expansion

Government

- Assist with part of the costs for building hydrogen stations
- Review regulations to further increase the spread of hydrogen stations

Takakura Hydrogen Station in Hachioji, Tokyo

Created by Fujitsu based on a Nihon Keizai Shimbun article from July 16, 2014 (morning edition)

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Deploying a Hydrogen Station Information Management Service | Building an Energy Monitoring System in Indonesia | Leveraging ICT to Generate Innovation and Reduce Environmental Impacts

Solution

Provide a system giving real-time information on the locations and operational status of hydrogen fuelling stations

As infrastructure develops, the next hurdle for the spread of FCVs is the question of when and where drivers can replenish hydrogen levels. A service is needed that provides FCV drivers with accurate information in real time on the operational status of hydrogen fuelling stations. To create such an environment, the Fujitsu Group has developed, then launched in December 2014, the Hydrogen Station Information Management Service, which gathers and delivers hydrogen station information.

Since the service uses the cloud-based platform SPATIOWL, information on hydrogen station location and operational status input by hydrogen fuel suppliers is unified on the cloud. This information is sent to the automobile manufacturer's datacenter, then is transmitted as hydrogen station information to FCV drivers in real time.

Toyota Motor Corporation uses Fujitsu's service to support drivers of its MIRAI fuel cell vehicles. Toyota provides Hydrogen Station List, a car navigation system application, and Pocket MIRAI, a smartphone application, to help its customers enjoy an enriching experience with their FCV.

The government of Japan is continuing to strategically build programs and infrastructure, including setting a target of approximately 100 hydrogen stations by the end of FY 2015,* aimed toward achieving a hydrogen energy society. In this context, the Hydrogen Station Information Management Service not only contributes to the spread of FCVs, but also makes collaboration possible with companies engaging in new business using hydrogen energy, and arguably accelerates innovation in the use of sustainable energy.

The Fujitsu Group will continue to contribute to better transportation for society and the more complete achievement of a hydrogen energy society by providing ICT solutions.

* NEDO's (New Energy and Industrial Technology Development Organization) "NEDO Hydrogen Energy White Paper"
  http://www.nedo.go.jp/content/100567362.pdf

Diagram of the Hydrogen Station Information Management Service

Hydrogen Station List, a navigation application

Pocket MIRAI, a smartphone application

Stakeholder's Message

A Service Contributing to a Hydrogen Energy Society

Takako Yamada
Telematics Business Department,
e-Toyota Division, Toyota Motor Corporation

I believe the Fujitsu Hydrogen Station Information Management Service plays an important role in the development of a hydrogen society. The easy-to-use development environment was a great help, allowing us to create services in a short period of time. We will continue to carefully enhance these services by listening to feedback from customers and related suppliers, ensuring we provide them with a high level of satisfaction.

The Spread of Hydrogen Energy through Corporate Tie-Ups

Takashi Kanada
Telematics Service Division Manager,
Innovation Business Headquarters

SPATIOWL, the Fujitsu solution behind the Hydrogen Station Information Management Service, is an open cloud platform. Therefore, it enables collaboration with a wide range of companies. I believe that the use of hydrogen energy will be promoted through innovations created by different companies working together, each providing technologies in its specialized area.

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Deploying a Hydrogen Station Information Management Service　　　Building an Energy Monitoring System in Indonesia　　　Leveraging ICT to Generate Innovation and Reduce Environmental Impacts

Special Feature
Human Centric Intelligent Society

Building an Energy Monitoring System
towards a Low Carbon Society in Indonesia

Embarking on Social Implementation Projects in Bogor City, Indonesia

Indonesia

Bogor

Theme

Growing needs for innovative energy saving measures in Indonesia under rapid economic growth.

The Republic of Indonesia (hereafter abbreviated to "Indonesia") is home to 249 million people (as of 2013), making it the fourth most populous country in the world. Steady and rapid economic growth continues, marking an annual rate of approximately 6% recently.
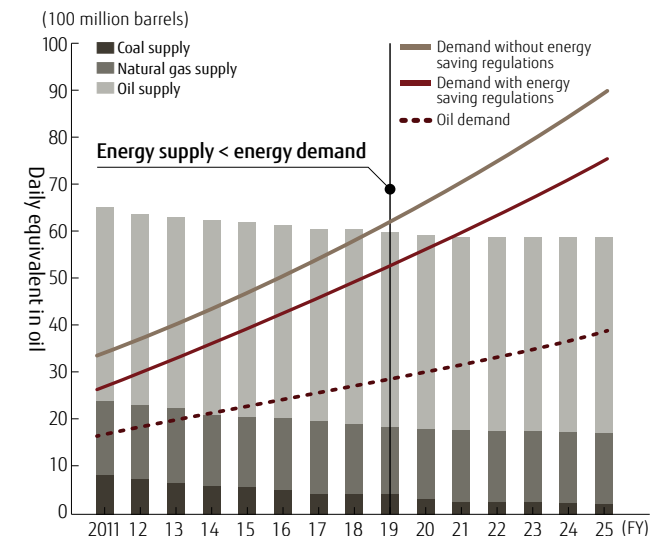
Indonesia is also extremely rich in natural resources such as oil, natural gas, and coal, making it one of the top energy export states in Asia. However, the supply and demand balance has changed in recent years due to increasing domestic energy consumption accompanying economic growth. As domestic energy demand is forecast to exceed supply by 2020, a more efficient energy supply and utilization system is expected from the standpoints of both energy security and maintaining international competitiveness.

Energy saving measures are important from an environmental perspective as well. Indonesia, in particular, faces the challenge of vulnerability to the impacts of climate change due to its geographic features as the largest archipelago nation in the world. The government, therefore, set a low carbon target in 2009, ahead of other ASEAN nations, to "reduce GHG emissions by 26% by 2020," as it promotes a transition to lower carbon emissions.

In order to examine and implement effective energy-saving measures in an Indonesian way, a data and information platform is urgently required that provides quantitative and continuous information to characterize energy consumption in Indonesian cities. This entails not only major sources to supply energy, such as thermal power plants, but also precise measuring and verification of direct and indirect emission volumes accompanying energy consumption over a wide area, from cities to industrial parks.

The National Institute for Environmental Studies of Japan (hereafter, NIES), which has been engaged in local measurements and verification research in collaboration with the Indonesian government and universities, selected Fujitsu as a strategic partner in December 2014 and commenced a project monitoring Indonesia's electric power consumption. Fujitsu has had worldwide experience building environmental management systems in Saudi Arabia, Thailand, and other countries. It has been also implementing energy monitoring systems at in-house facilities. With abundant experience and knowledge, Fujitsu has seized a precious opportunity to build an innovative monitoring system with NIES.

Changes in domestic energy supply and demand in Indonesia

(100 million barrels)

Coal supply
Natural gas supply
Oil supply

Demand without energy saving regulations
Demand with energy saving regulations
Oil demand

Energy supply < energy demand

Daily equivalent in oil

2011 12 13 14 15 16 17 18 19 20 21 22 23 24 25 (FY)

Source: Intellectual Asset Creation, October 2014, the Nomura Research Institute

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Deploying a Hydrogen Station
Information Management Service

**Building an Energy Monitoring System
in Indonesia**

Leveraging ICT to Generate Innovation and
Reduce Environmental Impacts

Solution

Building an energy monitoring system and promoting an energy saving society

This project sets up approximately 100 monitoring points in locations including a university administration building, a research laboratory, a hotel, a café, and private residences, in order to monitor different sectors' actual electric consumption. Through the social implementation project, monitoring data are assembled and processed to identify the operating status and trends of activities with electronic devices. Various statistical information is sent to the system developed by utilizing the Environmental Management Dashboard of Fujitsu.

Results to date have revealed variations in peak consumption hours from facility to facility and have given a visual representation in some facilities of the electricity consumed by air conditioning, lighting, data servers, etc. By specifying the sources drawing electricity, it is possible to

review and implement more effective power usage practices. In addition, the recorded data can be checked at any time by the researchers, facility administrators, and other parties involved.
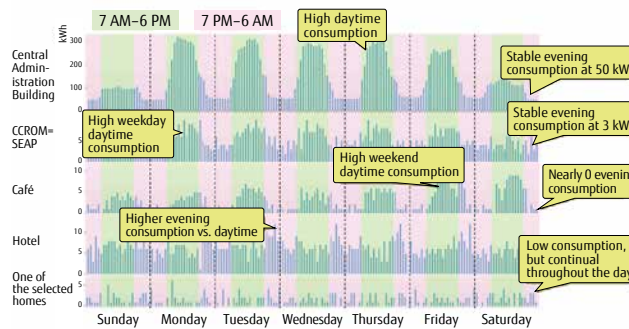
The plan is scheduled to continue for six years and is projected to gradually grow in scale. If the accumulated expertise and the positive energy-saving measures suggested through the process are utilized, and the project's scale is expanded to other Indonesia cities and districts, more effective policies for climate change mitigation and adaptation can be expected as a result.

Through the future provision of energy saving technologies, Fujitsu will continue to contribute to economic growth, disaster risk management, and environmental conservation promotion in newly developing countries.

List of monitoring points inside Bogor City

Bogor Agricultural University, Central Administration Building
Switchboard

Bogor Agricultural University, CCROM-SEAP Research Laboratory
Switchboard

Hotel (IPB Convention Hotel)
Switchboard

Café (Café Taman Koleski IPB)
Switchboard

Homes (4 residences)
Switchboard

Comparison of electric power consumption trends for each facility

Stakeholder's Message

Toward "Green Growth" for Cities through ICT

Prof. Tsuyoshi Fujita
Director
Center for Social and Environmental Systems Research
National Institute for Environmental Studies, Japan

In most Asian cities where rapid economic growth is underway, a transition strategy framework is undergoing an urgent quest to minimize environmental deterioration and to keep it under acceptable levels of global environmental constraints, such as a way towards a low carbon society. The research project is to design a socio-technical system to monitor the environmental emissions and social behaviors in real time, and to apply them into the production consumption system as a social knowledge platform. The project is also to develop a series of systems for saving quantitative data after implementation. Our research project aims to leverage ICT to develop scientific systems for methods for planning international emission right mechanisms, measurements for confirming effects of CO_2 emission reductions, and MRV (measurement, reporting, verification), and then communicate these as international standards from Japan and Asia. NIES has been developing comprehensive evaluation models of future socio-economics, optimal location models, and lifecycle assessments that quantify invisible environmental value. Combining Fujitsu's technologies for high-speed information processing, activity measurement visualization, and the processing and display of information, I believe, will lead to social innovation that brings corporations and researchers into collaboration with governments and citizens.

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Deploying a Hydrogen Station Information Management Service | Building an Energy Monitoring System in Indonesia | Leveraging ICT to Generate Innovation and Reduce Environmental Impacts

Special Feature: Human Centric Intelligent Society

Leverage ICT to generate innovation and reduce environmental impacts

Providing environmentally conscious solutions that promote reductions in GHG emissions

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Solution 1

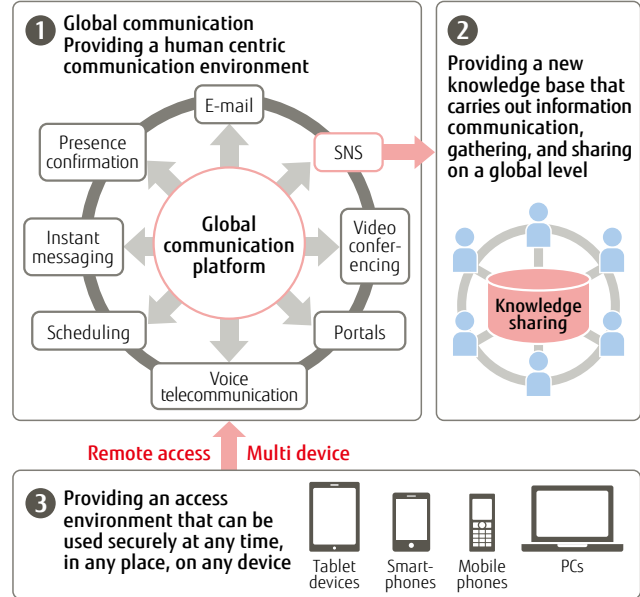# Reducing environmental impacts by transforming the work styles of 160,000 Fujitsu Group employees

The Fujitsu Group provides a communication platform, based on in-house experience and know-how, for supporting a work style transformation for some 1 million employees of 150 major Japanese companies doing business worldwide.

In January 2012, the Fujitsu Group began building a global communication platform to effectively share and utilize the knowledge of employees across the globe, and to maximize our performance as a corporation. In February 2014, platform integration was completed for approximately 200 domestic companies and 110,000 employees. Plans are in place to expand integration by the end of FY 2015 to encompass approximately 500 companies and 160,000 employees worldwide as the project progresses overseas in Europe, North America, China, and Asia & Pacific regions.

Since September 2013, we have also been actively utilizing a large-scale social networking system that is unrivaled in the world. With the new communication platform, seamless information sharing becomes possible, and the system stimulates communication while improving the speed of our business.

Diagram of the global communication platform

1 Global communication Providing a human centric communication environment

E-mail · Presence confirmation · SNS · Instant messaging · **Global communication platform** · Video conferencing · Scheduling · Portals · Voice telecommunication

2 Providing a new knowledge base that carries out information communication, gathering, and sharing on a global level

Knowledge sharing

Remote access · Multi device

3 Providing an access environment that can be used securely at any time, in any place, on any device

Tablet devices · Smart-phones · Mobile phones · PCs

💰 Cost reduction benefits (based on Fujitsu's implementation)

- By integrating the Group's communication platforms, system development and operation/maintenance costs are reduced, with an approximate 50% year-on-year savings in operation costs Group-wide.

- With regular internal meetings, Unit-wide meetings, etc. switched to a Web-based format, we have an average of 3,000 online meetings every day. The result is reduced business travel expenses, including the time it takes to travel, by as much as 20% year-on-year in Units fully implementing the changes.

🌿 Environmental impact reduction benefits (based on Fujitsu's estimates)

- Work style transformation reduces costs while also bringing a significant reduction in environmental burdens. Supposing a customer with employees on the scale of 10,000 people, estimates evaluated from five standpoints—meeting announcements, video conferencings, knowledge sharing, telephone communication with counterparts frequently away from their desk, and ICT infrastructure—demonstrated reductions in CO_2 emissions volume of approximately 80% compared to pre-platform integration levels.

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Deploying a Hydrogen Station Information Management Service

Building an Energy Monitoring System in Indonesia

Leveraging ICT to Generate Innovation and Reduce Environmental Impacts

Solution 2 — Leveraging IoT for more efficient maintenance work

By leveraging the Internet of Things (IoT), unexpected downtime can be prevented when carrying out maintenance work that has conventionally followed the approach of "fixing what has broken." Fujitsu's SupportDesk Service, a maintenance service that makes use of the practical expertise we have cultivated inside Fujitsu, detects signs of hardware malfunction using sensing technology with automatic-alert functionality. Specialized staff members can make an appropriate response and can preempt problems.

Furthermore, a solution encompassing a further evolution of our automatic-alert and malfunction detection features is the Glovia Enterprise MM, a system that makes maintenance work in manufacturing industries more advanced. The system collects operating information in real time from sensors attached to equipment currently in use. Sensor data is analyzed using big-data statistical analysis technology to predict the timing of malfunctions for each specific piece of equipment. We can now periodically replace the right components and realize benefits from a cost and environmental impact perspective. Maintenance work carried out on site is also being done more efficiently with the help of smart devices. These efforts are decreasing the time it takes until we can report that work is complete, and are also contributing to improved customer satisfaction.

Environmental impact reduction benefits (based on Fujitsu's estimates)

- Maintenance work that maximally leverages the IoT decreases environmental impacts accompanying component shipping and the dispatch of maintenance staff, which has shown reductions in CO_2 emissions volume of approximately 80%.

Solution 3 — Reducing the environmental burden of ICT infrastructure with the cloud

The ability to use cloud services in this day and age has become a matter of course. Cloud services involve the shared use of high-performance servers installed in datacenters to allow customers to use whatever functions they need via the Internet. This reduces the cost of systems adoption by as much as 20% and makes it easier for customers to adopt IT systems. Additionally, since customers are relieved of the need to have their own servers and storage equipment, the electric power that would have run such ICT equipment is saved, which contributes to reducing environmental impacts. Fujitsu is building datacenters with full disaster prevention and security features, through which we provide a variety of services to our customers. One of the services we are providing to healthcare institutions is a digital medical record system called HOPE Cloud Chart.

Case Study — Aiseikai Hospital

At Aiseikai Hospital, patient information that had been individually managed is now unified on a cloud-based medical fee and medical record system. This system brings efficiency to a wide range of cumbersome healthcare clerical tasks. By using a cloud environment for ICT infrastructure, the hospital gains security and cost benefits, delivers peace of mind to its patients, and also contributes to reduced environmental impacts. "Adopting the cloud service has helped us reduce our environmental impact, has increased the amount of time we can spend with patients, improved the quality of our healthcare, and reduced the amount of time patients spend waiting at the payment counter. In the future, we will use ICT to further improve the quality of regional healthcare."

Shinya Mitsui
Managing Director, Aiseikai Hospital

Solution 4 — Development using 3-D simulators

Fujitsu is providing manufacturing industries with a Virtual Product Simulator (VPS) that incorporates the expertise from our own monozukuri (craftsmanship) experience so that those industries can launch competitive products in a timely fashion. Conventional approaches entailed multiple prototypes made to test the best ways to assemble, operate, and repair products. With the VPS, however, 3-D CAD data can be used to virtually test products, reduce the number of prototypes needed, and realize development cost savings. Also, since tests can optimize production steps, this approach helps save space in production plants and use personnel and equipment more efficiently.

An even more significant feature is that multiple operators can view the same image simultaneously in real time, allowing them to remotely verify designs while working in different locations. Building a development framework that unifies the company units involved means that design can be carried out with a more effective emphasis on product lifecycle, which facilitates product maintenance and leads to improvements in product recycling.
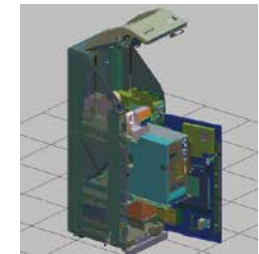
3-D CAD data from the VPS

Environmental impact reduction benefits (based on Fujitsu's estimates)

- Being able to remotely test designs simultaneously from different locations allows for reductions in travel time and business trips needed for meetings, which has shown reductions in CO_2 emissions volume of approximately 30%.

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Fujitsu Group Environmental Action Plan Stage VII (FY 2013–FY 2015)

To set specific targets for putting Fujitsu Group Environmental Policy into practice, the Fujitsu Group formulated medium-term action plans.
For the period FY 2013–2015, Fujitsu has formulated and is enacting the Fujitsu Group Environmental Action Plan (Stage VII).

Our world faces many challenges relating to population growth. These include the security of supply of energy, other resources and food, climate change, the increasing frequency of natural disasters, and loss of biodiversity. These social and environmental issues are deeply interconnected, and they cannot be managed in isolation. Society expects businesses to proactively take actions to address these challenges.

Deploying information and communications technology (ICT) in an intelligent manner can improve the efficient use of energy and other natural resources and reduce greenhouse gas emissions. ICT can also assist society preparing for and responding to natural disasters. Fujitsu believes ICT has a major role to play in helping society address the world's environmental challenges. Beyond meeting today's demands, ICT has the power to connect people, enable sharing of knowledge and experience, and shape a safer, sustainable, and more prosperous tomorrow.

Through our business activities, Fujitsu will continue to respond to these social and environmental challenges, by increasing the deployment of ICT sustainability solutions throughout society and developing new innovative technologies. As a leading ICT company, we will continue working together with our stakeholders in the global value chain including our customers, partners and suppliers to shape a sustainable and prosperous society.

Theme		Target items (targets through the end of FY 2015)
Our Society	Contribution to Society by ICT: Reduce Greenhouse Gas Emissions	Reduce greenhouse gas emissions for our customer and society over 38 million tons.[1]
	Contribution to Society by ICT: Increase Solutions	Increase the deployment of sustainability solutions.
	Design and Deliver Eco-efficient Products: Energy Efficiency	Achieve top-level energy efficiency[2] of more than 50% of the newly developed products.
	Design and Deliver Eco-efficient Products: Resource Efficiency	Increase resource efficiency of newly developed products by 35%[3] compared to 2011.
	Leading Edge R&D	Develop innovative technologies that enable solutions and products to reduce the environmental load.
	Corporate Citizenship: Social Challenges	Support initiatives that address the complex social and environmental challenges, e.g. biodiversity conservation.
	Corporate Citizenship: Social Activities	With society, support our employees to volunteer social activities.
Our Business	Efficient Business Operations: Reduce Greenhouse Gas Emissions	Reduce greenhouse gas emissions in our business facilities by 20% compared to 1990.
	Efficient Business Operations: Energy Intensity	Improve energy intensity in our business facilities over 1% each year.
	Efficient Business Operations: Datacenters	Improve environmental performance of our major datacenters.
	Efficient Supply Chain: Logistics	Reduce CO_2 emissions[4] per sales from transport over 1% (on average) compared to FY 2013.[5]
	Efficient Supply Chain: Procurement	Expand activities of reducing CO_2 emissions to all types of suppliers.
	Efficient Use of Resources: Renewable Energy	Increase generation capacity and procurement of renewable energy.
	Efficient Use of Resources: Water	Continue efforts for efficient use of water, e.g. water recycling and water saving.
Continuous targets [6]	Reduced Environmental Impact: Chemicals	Reduce chemical emissions to less than the average level of 2009-2011 (PRTR: 21t, VOC: 258t).
	Reduced Environmental Impact: Waste	Reduce the amount of waste to less than average level of 2007-2011 (amount of waste: 31,134t). Keep Zero Emission in factories in Japan.
	Reduced Environmental Impact: Recycling	Maintain over 90% resource reuse rate of business ICT equipment at Fujitsu recycling centers.

[1] **38 million tons:** Calculate the numeric target by multiplying annual sales of each solution category by a conversion factor of CO_2e savings per sales which is based on around 300 case studies of Environmentally Conscious Solutions in Japan. An upward revision of the target at the end of FY 2014
[2] **Achieve top-level energy efficiency:** Achieve more than 25% of market benchmark in energy efficiency such as top-runner products (first in the world or industry, top of the world or industry)
[3] **35%:** An upward revision of the target at the end of FY 2014
[4] **Reduce CO_2 emissions:** Calculate emissions of CO_2 equivalence from energy consumption
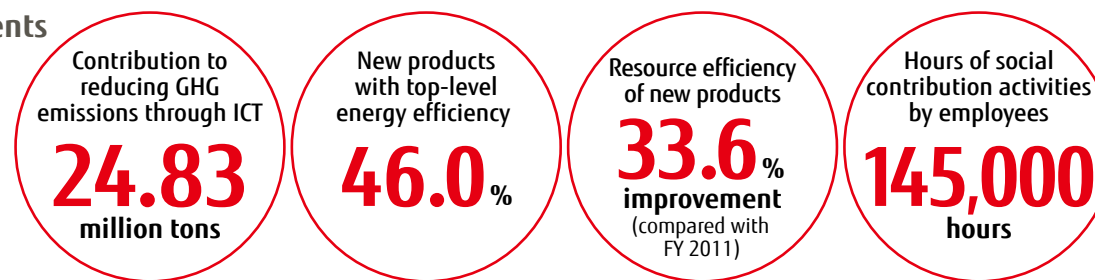[5] As the initial target was achieved, from FY 2014 the Fujitsu Group has changed the target
[6] **Continuous targets:** Targets to be achieved through business activity because already achieved high level performance

Chapter I | Contribution to Society

Under the Environmental Action Plan (Stage VII), the Fujitsu Group is aiming to expand our contributions to society overall and is globally expanding the scope of our targets, including reduction of GHG emissions through the provision of ICT and social contribution activities by employees. Moreover, Fujitsu has set goals for expanding the provision of solutions that will contribute to global sustainability, as well as for promoting research and development. The company will make efforts to improve the environmental performance of ICT products.

Key Achievements in FY 2014

Contribution to reducing GHG emissions through ICT
24.83 million tons

New products with top-level energy efficiency
46.0 %

Resource efficiency of new products
33.6 % **improvement** (compared with FY 2011)

Hours of social contribution activities by employees
145,000 hours

About Symbols Used ✔ Examined by third-party organization ◯ FY 2014 target achieved

	Theme	Target items (targets through the end of FY 2015)	FY 2013 Key Performance	FY 2014 Key Performance		Status	
Our Society	Contribution to Society by ICT: Reduce Greenhouse Gas Esions	Reduce greenhouse gas emissions for our customer and society over 38 million tons.*1	10.86 million tons (domestic: 6.68 million tons; overseas: 4.18 million tons)	Contributed 24.83 million tons (Japan: 15.43 million tons; overseas: 9.40 million tons)	✔	◯	P. 19
	Contribution to Society by ICT: Increase Solutions	Increase the deployment of sustainability solutions.	Prepared an action framework. Set definitions and criteria, and identified solutions	Identified 12 solutions that contribute to sustainability to strengthen our solutions portfolio in the field of climate change, and gathered case studies		◯	P. 21
	Design and Deliver Eco-efficient Products: Energy Efficiency	Achieve top-level energy efficiency*2 of more than 50% of the newly developed products.	39.0%	46.0%	✔	◯	P. 22
	Design and Deliver Eco-efficient Products: Resource Efficiency	Increase resource efficiency of newly developed products by 35%*3 compared to 2011.	Increased by 21.3%	Increased by 33.6%	✔	◯	P. 24
	Leading Edge R&D	Develop innovative technologies that enable solutions and products to reduce the environmental load.	Announced 18 key green technologies	Announced 25 key green technologies		◯	P. 26
	Corporate Citizenship: Social Challenges	Support initiatives that address the complex social and environmental challenges, e.g. biodiversity conservation.	Provided funding, technology, and human resource support	Provided funding, technology, and human resource support		◯	P. 28
	Corporate Citizenship: Social Activities	With society, support our employees to volunteer social activities.	Dedicated 129,000 hours to social contribution activities by employees	Dedicated 145,000 hours to social contribution activities by employees		◯	P. 28

*1 **38 million tons:** Calculate the numeric target by multiplying annual sales of each solution category by a conversion factor of CO2e savings per sales, which is based on around 300 case studies of Environmentally Conscious Solutions in Japan. There was an upward revision of the target at the end of FY 2014.
*2 **Achieve top-level energy efficiency:** Achieve more than 25% of market benchmark in energy efficiency such as top-runner products (first in the world or industry, top of the world or industry)
*3 **35%:** An upward revision of the target at the end of FY 2014

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GHG Emission Reduction through the Provision of ICT

Our Approach

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. Between FY 2009 and FY 2012, this ICT usage has contributed to a cumulative reduction of 12.23 million tons of CO_2 emissions. From FY 2013, we will extend the scope of our targets overseas, and aim to contribute to a global cumulative reduction in emissions of 38 million* tons or more over the three years through FY 2015.

*Revised upward from 26 million tons.
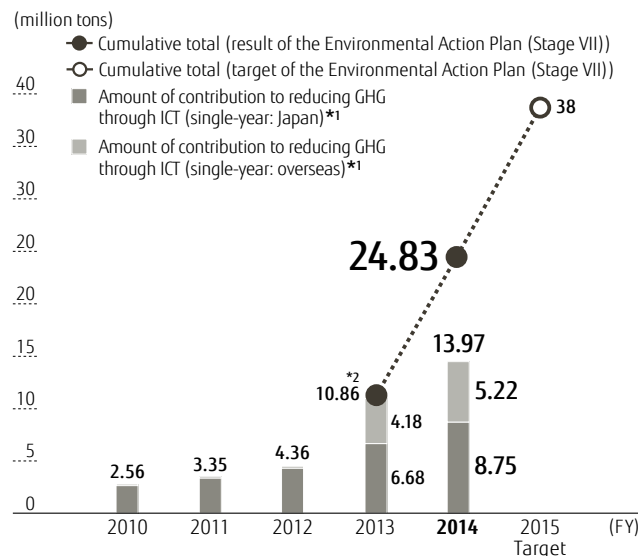
Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Reduce greenhouse gas emissions for our customers and society	over **38** million tons
FY 2014 Targets	Contribute to reducing customers' and society's greenhouse gas emissions by	over **16.99** million tons
FY 2014 Key performance	**24.83** million tons	Japan: 15.43 million tons / Overseas: 9.4 million tons

Performance and Results for FY 2014

Expanding Environmentally Conscious Solutions

To advance the quantitative visualization of GHG reduction effects through ICT, we recognize solutions with an expected reduction effect of 15% or more as "environmentally conscious solutions." In FY 2014 we moved ahead with recognizing these cases, centered on solutions that we provide to large numbers of customers. Moreover, we leveraged opportunities to propose environmental contribution effects to customers and worked to convey the environmental value of our solutions.

Amount of Contribution to Reducing Emissions of Greenhouse Gases (GHG) through the Provision of ICT

(million tons)

- ● Cumulative total (result of the Environmental Action Plan (Stage VII))
- ○ Cumulative total (target of the Environmental Action Plan (Stage VII))
- ■ Amount of contribution to reducing GHG through ICT (single-year: Japan)*1
- ■ Amount of contribution to reducing GHG through ICT (single-year: overseas)*1

Data points:
- 2010: 2.56
- 2011: 3.35
- 2012: 4.36
- 2013: 10.86 *2 (6.68 + 4.18)
- 2014: 13.97 (8.75 + 5.22); cumulative 24.83
- 2015 Target: 38

(FY) Target

*1 Values for FY 2010 to FY 2012 represent performance under the Environmental Action Plan (Stage VI). From FY 2013, we are expanding the scope globally.
*2 FY2013 results were revised accompanying reassessment of categories for compiling data from overseas.

Recognizing 51 New Cases that Contribute to 24.83 million tons of GHG Reduction

The Fujitsu Group recognized 51 new cases of environmentally conscious solutions in Japan, bringing the cumulative total to 400. These new cases include the Fujitsu Enterprise Application GLOVIA ENTERPRISE MM, a maintenance solution to support the transformation of maintenance practices for manufacturers, and a cloud-based digital medical record system called Fujitsu Healthcare Solutions HOPE Cloud Chart.

The result has been a reduction effect of 24.83 million tons of GHG worldwide, meeting our target.

FY 2015 Targets and Plans

Setting Priority Solutions and Advancing Recognition

We revised our target of a 26-million-tons cumulative amount of contribution to GHG reduction from FY 2013–2015 to a 38-million-ton target. Toward achieving this target, we are placing priority on solutions which we provide to large numbers of customers and solutions for which we foresee expanded use by customers, such as cloud computing and mobile, as we engage in recognition of environmentally conscious solutions.

Examples of Priority Solutions (FY 2014)

1. Next-generation integrated Web CMS "Sitecore CMS"
2. FENICS II business Wi-Fi service
3. Manufacturing-targeted production management ERP "GLOVIA G2"
4. On-site Inspection Meister
5. AZCLOUD SaaS FoodCORE
6. Resident information system "MICJET Tax Information"

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GHG Emission Reduction through the Provision of ICT | Deploying Sustainability Solutions | Development of Top-Level Energy Efficient Products | Improving the Resource Efficiency of Products | Research and Development of Advanced Green ICT | Collaborating with Communities and Taking Action as a Good Corporate Citizen

GHG Emission Reduction through the Provision of ICT

Main Activities in FY 2014

Encouraging Environmental Performance to be Part of New Proposal Materials

Fujitsu is promoting new ideas inside and outside Japan to help convey to customers our favorable environmental performance. This includes, for example, the contribution of our solutions to CO_2 reduction. At Fujitsu Systems East Limited, we have started an initiative to evaluate the size of contributions to CO_2 reduction when commercializing package software in order to incorporate the proposal of these ideas into our business process. In addition, at Fujitsu Social Science Laboratory Limited (Fujitsu SSL), we are using an internal awards program and best practices presentations in order to facilitate the awareness of employees, while also creating pamphlets, etc. for customers.

In Europe, we are utilizing EcoCALC, web-based tools for calculating environmental contributions, and we are communicating to customers the environmental performance of our solutions. In FY 2014, we evaluated and proposed ideas that included business talks in Finland for government-targeted work systems, and business talks in Spain for server virtualization projects at major automobile manufacturers.

Pamphlet introducing Fujitsu SSL's Environmental Contribution Solutions

Reference Information — Calculation Method for Amount of GHG Reduction Effect

At the Fujitsu Group, we have assessed the quantitative reduction in environmental burdens (in terms of reduced CO_2 emissions) from ICT adoption using an environmental impact assessment method developed in 2004 by Fujitsu Laboratories Ltd. We have assessed the CO_2 emission-lowering impacts in 400 prior cases and have calculated the CO_2 reduction effect per unit of sales from the accumulated data.

In calculating the amount of contribution to GHG reduction, we calculate the annual amount of reduction effect from the CO_2 reduction effect per unit of sales and from the annual sales of each solution category.
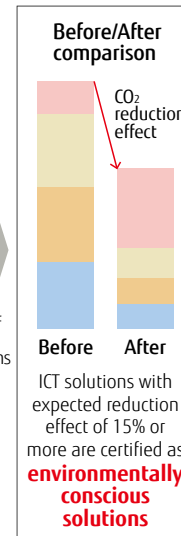
Overview of Environmental Impact Assessment Methodology

Conversion of 7 factors to CO_2 emissions

Factor	Description
Resource consumption	Consumption of paper, CDs, documents
Movement of people	Movements by airplanes, trains, buses and automobiles
Transport of goods	Transport by trucks and rail freight
Office space	Associated work-hours, documents/equipment space
Warehouse space	Storage in regular/refrigerated warehouses
Power Consumption of ICT/Network equipment	Power consumped by ICT equipement (servers, PCs, etc.)
Data communication traffic volume	Data communication traffic volume by Internet/FAX

Sum of CO_2 emissions

Environmental-load basic unit database

Before/After comparison

CO_2 reduction effect

Before After

ICT solutions with expected reduction effect of 15% or more are certified as **environmentally conscious solutions**

Comment from Third-Party Verification Body

In continuation with last year, we reviewed, from a third party perspective, the FY 2014 data on the amount of contribution to GHG emission reduction through the provision of ICT.

Last year, we gave a high evaluation to the facts that all of the basic data used for calculations had systematically undergone checks by the internal Environmentally Conscious Solutions Review Meeting and that the documents used in calculations had been properly prepared. We confirmed in this review that these practices were functioning effectively. In addition, more detailed calculation methods were put forward in newly added provisions, increasing further transparency in the calculation process and in its foundation.

At the same time, we believe that the calculation method itself holds room for improvement because it uses GHG reduction effects per unit of sales (GHG reduction intensities), applying conventional category classifications. However, constructive initiatives are being made to conduct a study to confirm the appropriateness of the current calculation method and to disclose the results, which, we hope, will lead to more future improvements.

Masatoshi Sakaguchi
System Certification Division, Bureau Veritas Japan

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GHG Emission Reduction through the Provision of ICT | Deploying Sustainability Solutions | Development of Top-Level Energy Efficient Products | Improving the Resource Efficiency of Products | Research and Development of Advanced Green ICT | Collaborating with Communities and Taking Action as a Good Corporate Citizen

Deploying Sustainability Solutions

Our Approach

Achieving a sustainable society requires that we address a variety of environmental and social issues including: measures against global warming by reducing GHG emissions, adaptation to the effects of climate change, resource efficiency, conservation of biodiversity, food supply security, and urbanization.

In response, the Fujitsu Group is increasing deployment of sustainability solutions as we continue to respond to global environmental and social issues through ICT solutions. We are studying and implementing these solutions through the global members of our Environmental Solutions Committee and its constituent working group (WG).

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Increase the deployment of sustainability solutions.
FY 2014 Targets	Uncover case studies to demonstrate how solutions contribute to sustainability. Strengthen our solutions portfolio.
FY 2014 Key Performance	Identified 12 solutions that contribute to sustainability to strengthen our solutions portfolio in the field of climate change, and gathered case studies.

FY 2014 Performance and Results

Identified 12 Solutions that Contribute to Sustainability

The working group (WG) established to achieve the targets of the Environmental Action Plan (Stage VII), verified the criteria set in the previous fiscal year for solutions that contribute to sustainability, and identified 12 solutions in particular that contribute to mitigating and adapting to climate change. Furthermore, the WG formulated a plan for communicating our stories globally in order to further expand our provision of these solutions.

TOPICS | **Starting Operation in Jakarta, Indonesia of a Participatory System for Sharing Disaster Information between Citizens with Smartphones**

In recent years, abnormal climate conditions and massive floods occurring in multiple locations across the globe are impacting many citizens and regional economies. As a means of boosting countermeasures against these types of disasters, Fujitsu and PT. Fujitsu Indonesia, with help from the Japan International Cooperation Agency's (JICA) Indonesia Office, introduced a system in Jakarta, Indonesia that allows citizens to participate in sharing disaster-related information.

This system, which utilizes the high concentration of smartphones in Indonesia, provided approximately 10 million citizens with a special app. The citizens installed the app so that they could send pictures and text describing the water levels of streams and rivers, as well as rainfall information, which they observe. Using the GPS information from each smartphone, these multiple reports are compiled and displayed within a map. Citizens can then use the same app to view this

information. In addition, the system is connected to the existing disaster information management system of Jakarta's Regional Disaster Management Agency. During disasters, alerts from the Agency are sent to smartphones (that have installed the app) in real time. For Jakarta, which faced capital procurement hurdles to establishing an advanced observation network for gathering disaster data, the system is arguably the best solution due to its low cost and ease of adoption.

Furthermore, since the same app can be used to collect more water level and rainfall information as greater numbers of citizens contribute observations, it is expected to help improve citizens' awareness of self-initiated and independent disaster preparedness and disaster mitigation.

Overview screen   Report screen
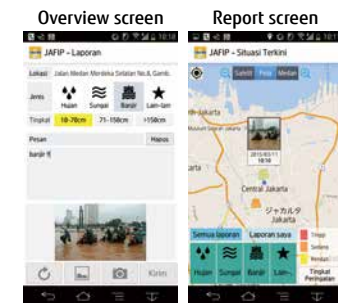
High floods in Jakarta

FY 2015 Targets and Plans

Deliver Messages to Customers on Solutions Contributing to Sustainability

With the aim of increasing the deployment of solutions to customers, during FY 2015 we will broadly disseminate messages on solutions contributing to sustainability through our website and other channels.

We will also work to provide case studies and to expand our lineup of solutions.

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Development of Top-Level Energy Efficient Products

Our Approach

As energy-related regulations for ICT products increase in number and in the breadth of the products they target, energy efficiency is taking on importance within society in the form of environmental label conformance and green procurement requirements.

Amid this background, the Fujitsu Group believes that we must accelerate improvement of the energy performance of products during their use, in order to reduce GHG emissions. For that reason, we are engaged in the development of products featuring top-level energy efficiency. Up to now, we have worked to improve the energy efficiency of products through development of "Super Green" products. As we now seek to further increase energy efficiency, in our Environmental Action Plan (Stage VII) we have set a target of making over 50% of all new products top-level energy efficient.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Achieve top-level energy efficiency of more than **50%** of newly developed products.
FY 2014 Targets	Make **45%** or more of new products top-level energy efficient.
FY 2014 Key Performance	Made **46.0%** of new products top-level energy efficient.

FY 2014 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 2013–14.

Applications of energy-saving technologies include the adoption of high-efficiency 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.
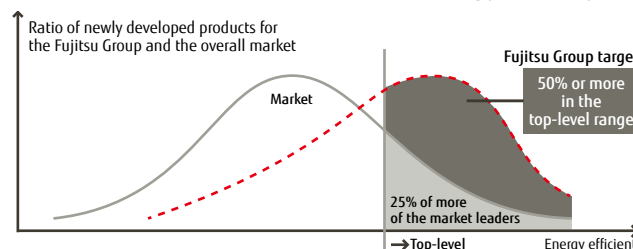
Achieved Top-Level Energy Efficiency for 46.0% of New Products

As a result of applying and expanding energy-saving technologies across our divisions in products including servers, PC servers, PCs, network devices, and scanners, we were able to meet our target for new product top-level 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 achieve 25% or more of the market benchmark in energy efficiency.

Ratio of newly developed products for the Fujitsu Group and the overall market

Market
Fujitsu Group target
50% or more in the top-level range
25% of more of the market leaders
→Top-level
Energy efficient

Reference Information Top-Level Energy Efficient Product Target Standards

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

Example of Target Standards[1]

Reference Level	Product Categories
ENERGY STAR criteria (in effect) compliant	PCs, imaging equipment, etc.
Top-level achievement rate of the Top Runner Program (FY 2011) under the Energy Conservation Law	Servers[2], 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[3], electronic components, etc.

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

FY 2015 Targets and Plans

Deploying Outstanding Energy-Saving Technology and Expanding Its Application

To achieve our fiscal year target, we will review plans to pursue actions such as the addition of top-level product development in all divisions. In addition, we will deploy outstanding energy-saving technology across the company and expand its application to products. Looking toward the future, we aim to advance the development of advanced technology for energy saving devices, which will contribute to revolutionary improvements in energy efficiency.

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Development of Top-Level Energy Efficient Products

Main Activities in FY 2014

Tablets with Energy-Saving Designs for Long Battery Life for Corporate Users

ARROWS Tab **Q775/K**

The tablet can be custom equipped with the palm vein authentication sensor.

ARROWS Tab Q775/K is a large-screen 13.3-inch tablet running Windows and targeted at corporate users as a tablet that can function as their main PC. Using the latest Intel® CoreTM i processor and an IGZO energy-saving display, the tablet achieves approximately 9.1 hours**[1]** of battery life. Furthermore, the tablet is Energy Star compliant and achieves an energy efficiency rate of 500%**[2]** or more (FY 2011 standards) based on the Law Concerning the Rational Use of Energy.

In addition, with weight in the range of 900+ grams, the ARROWS Tab Q775/K is the lightest in its class for tablets with 13.3-inch and larger screens. In order to create the tablet's compact and lightweight frame, magnesium alloy, with its superior strength and weight advantages, was used for the internal cover, combined with hybrid molded components such as glass-hardened resin for a new level of strength and lightness.

[1] CoreTM i5 model. Measured based on the JEITA battery operating time measuring method (Ver. 2.0).
[2] Tablet model with the CoreTM i7-5600U processor.

ScanSnap iX100, the World's Lightest and Most Energy Efficient Scanner

ScanSnap iX100

The compact ScanSnap iX100 is a battery and Wi-Fi equipped portable scanner, and yet still achieves a world-beating weight of only 400 grams*****. Features of the product include a 10% reduction in printed circuit board size compared to using conventional technology, while 3-D modeling of all components, to optimize installation down to units of 0.1 mm, has minimized dead space in the structural design and the scanner's primary parts have been made as light as possible.

In addition, the ScanSnap iX100's control IC functions were limited to essential operations only, and the efficiency of neighboring power supply circuits was boosted, in order to ensure long battery life. Total power consumption was minimized by thoroughly eliminating excess power consumption for each and every component and by optimizing the timing of the scanner's transition to operation, sleep, or power-saving mode. The result is a 50% reduction, over ENERGY STAR criteria, in power consumption during sleep mode.

* For the A4 scanner with battery and Wi-Fi. Source: PFU Limited (as of June 1, 2015).

Development of EcoBoard, an Environmentally Conscious Score Board that Can Operate on Solar Power Alone
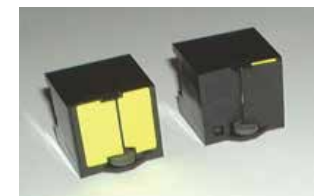

Environmentally conscious score board for baseball stadiums

Fujitsu Frontech Limited has developed a product called EcoBoard, which operates solely on power generated by its solar panels and can update its live display for game scores and informational messages.

The magnetic reversal elements used by EcoBoard operate on magnetic force from electromagnets. The board boasts an energy saving design, since operational power is only necessary when switching displays, after which magnetism keeps the images in place. Operation is possible at night or under cloud cover***** and, in contrast to standard score boards, no external power supply is needed.

* Even without sunlight, operation (on full battery power) for approximately six games is possible, assuming 9-inning games.

Magnetic reversal elements

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Improving the Resource Efficiency of Products

Our Approach

Amid the depletion of national resources, rising international resource prices, uncertain supply of rare metals, and other growing threats to the sustainability of companies and society, there is also 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.

The Fujitsu Group, too, believes in the importance of efficiently using resources in the ICT products that we provide to customers. Toward that end, 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 reduce environmental burdens through improved 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 outstanding products that provide customers with benefits including compactness, light weight, and space savings.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Increase resource efficiency of newly developed products by	**35%** or more (compared to FY 2011)
FY 2014 Targets	Increase resource efficiency of new products by	**15%** or more (compared to FY 2011)
FY 2014 Key Performance	Increased resource efficiency of new products by	**33.6%** (compared to FY2011)

FY 2014 Performance and Results

Improving the Resource Efficiency of New Products

In FY 2012, the Fujitsu Group created its own definition of "resource efficiency" since no official indicator existed.

In FY 2014, following the previous fiscal year, we continued to use our indicators in the evaluation of products newly developed by Fujitsu**, while also undertaking initiatives aimed at reducing the number of parts in products and reducing the size of products through smaller, thinner, and lighter parts and higher-density mountings.

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

Achieving 33.6% Improvement in Resource Efficiency

Fujitsu has achieved a 33.6% improvement in FY 2014 resource efficiency, against a target of 15%. This is the result of smaller

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.

$$\text{Resource efficiency} = \frac{\text{Product value}}{\begin{array}{c}\text{Environmental burden from resource usage} \\ = \\ \Sigma\,(\text{Resource burden coefficient} \times \text{Resource usage volume})\end{array} + \begin{array}{c}\text{Environmental burden from resource disposal} \\ = \\ \Sigma\,(\text{Resource burden coefficient} \times \text{Resource disposal volume})\end{array}}$$

size and lighter weight, primarily in tablets, PC servers, mobile phone base stations, and mainframes.

FY 2015 Targets and Plans

Target Revised Upwards and Further Improvements in Resource Efficiency in Our Sights

Since the Fujitsu Group achieved its FY 2015 target ahead of schedule, we revised the target upward and have set our sights on improving resource efficiency of new products by 35% or more compared to FY 2011.

Toward achieving this goal for the fiscal year, we are not only continuing current initiatives, but are also working to expand development of new lightweight, rigid materials and the use of recycled materials. We also seek to widely publicize our products' environmental performance to increase recognition of this factor, which we will link to sales growth.

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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Improving the Resource Efficiency of Products

Main Activities in FY 2014

FUJITSU Server GS21 2600, an Environmentally Conscious Mainframe with Superior Performance

FUJITSU Server GS21 2600

138.6%
resource efficiency improvement
(over conventional models)

The FUJITSU Server GS21 2600 uses system-on-chip*[1] technology to aggregate 14 LSI chips into 1. An approximate boost in processing performance by as much as 40% is achieved, along with an approximate reduction in power consumption by as much as 50%. With 80 PLUS®*[2] Gold certification, the server meets the highest standards in the industry.

The server also utilizes significantly reduced component numbers, more compact sizes for each component, plus aggregation and integration, to create a footprint (including maintenance space) that is as much as 70% smaller than conventional models, in a design as much as 58% lighter.

Solventless powder paint for the housing, complete elimination of volatile organic chemicals (VOCs), and completely lead-free soldering of electronic components to printed circuit boards are among some of the server's other achievements.

*1 **System-on-chip:** Technology that aggregates multiple functions onto a single IC chip.
*2 **80 PLUS®:** A certification program for the energy efficiency of computer power supplies.

ARROWS Tab F-03G, the World's Lightest Tablet with Extended, Worry-Free Battery Life

ARROWS Tab **F-03G**

37.9%
resource efficiency improvement
(over conventional models)

The ARROWS Tab F-03G tablet, launched in the winter of 2014, is 86 grams lighter than the model from winter 2013. With a weight of just 433 grams, the F-03G is the lightest in the world among tablets with screens 10 inches or larger.

The tablet's structure was improved using optimal materials in order to satisfy the dual objectives of lightness and durability. The frame was made thinner thanks to both stronger materials with low-density glass and the addition of stress-resistant, high-strength aluminum used for some of the internal components.

In addition, energy saving performance was emphasized so that the device can be conveniently carried without its battery charger. Other energy saving technologies were developed to new levels with features including a "human-centric engine" with fewer CPU cores and fewer clocks—for less battery usage when the screen is off—as well as optimized CPU performance for each app used on the device. These advances made it possible to maintain conventional battery life and to employ a compact and lightweight 7840-mAh battery.

Advancing 3R Design

Through our proprietary product environmental assessments and green product evaluations, the Fujitsu Group is working toward the application of 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, and we are testing 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 here on out, the Fujitsu Group will summarize examples of the obstacles to ease of dismantling that we have learned from the recycling centers, and from the product development stage will incorporate these lessons into design for easier dismantling of post-use products.

Gaining experience in dismantling at recycling center study tour

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Research and Development of Advanced Green ICT

Our Approach

The Fujitsu Group pursues its business activities with an aim to solving social and environmental problems by driving forward research and development (R&D) in a multitude of domains. Working from the standpoints of environmentalism and sustainability, we use leading-edge technologies as our foundation and expand outward into materials and devices used in products, as well as facilities and system solutions.

At Fujitsu Laboratories Ltd., the core company shouldering R&D in the Fujitsu Group, two key approaches are being undertaken: "Green of ICT," which seeks to reduce energy and resources consumed by ICT equipment and infrastructure, and "Green by ICT," which seeks to reduce environmental burdens through the use of ICT. Within these approaches, Green by ICT has a significant ripple effect in society and we are aiming to drive green ICT in the domain of Social Innovation, the core of the Fujitsu Group's growth strategy.

Summary of FY 2014 Achievements

| Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015) | **Develop innovative technologies** that enable solutions and products to reduce the environmental loads |
| FY 2014 Key Performance | Announced **25** key green technologies |

FY 2014 Performance and Results

Positioning and Highlighting Fujitsu Laboratories' Key Green Technologies

To disseminate the Fujitsu Group's advanced green ICT throughout society, and to support its early deployment in businesses, we positioned as our key green technologies "best-in-class" and "world-first" technologies, as well as technologies with notably high environmental contribution. We are also highlighting our technological capabilities by advancing our R&D for these key green technologies and assertively promoting them through press announcements.

In addition, in the domain of creating social innovation, which connects and leverages heterogeneous information such as that generated by corporations, governments, individuals, and sensors, we strengthened our generation of green ICT and communicated its contributions to the environment.

Development Achievements

- Data optimization technology
- Communications data collection and high-speed search technology
- Information service technology among terminals and devices
- Transportation pattern analysis technology
- On demand traffic operation technology
- Patient condition recognition technology
- Wide area SDN management and control technology
- Access re-creation verification technology
- Vehicle lane deviation detection technology
- Cyber attack detection technology
- 56-Gbps receiver circuits for servers
- Cluster supercomputer NW switch reduction technology
- Automatic generation technology for image recognition programs
- WAN speed improvement technology
- CMOS transmission/reception chips for vehicle on-board radars
- New management methods for natural forests
- Sensing middleware for wearable devices
- Bio-derived, water-based paint
- Tools for finding the characteristics of areas in which Linked Open Data technologies are applied
- Ring-type wearable devices
- Technology for detecting early signs of drainage system flooding
- Optical transceiver circuits using silicon photonics
- Technology for recognizing crowd movements
- Flood forecast simulation technology
- Technology for early detection of dyskinesia (irregularities in motor functions)

Announcement of 25 Key Green Technologies

In FY 2014, the Fujitsu Group announced 25 technology development achievements centered on the domains of Green by ICT and the domain of Social Innovation: 18 technological developments (including 13 developments in the domain of Social Innovation), while 7 developments were in Green of ICT.

Social innovation research domains in the laboratory
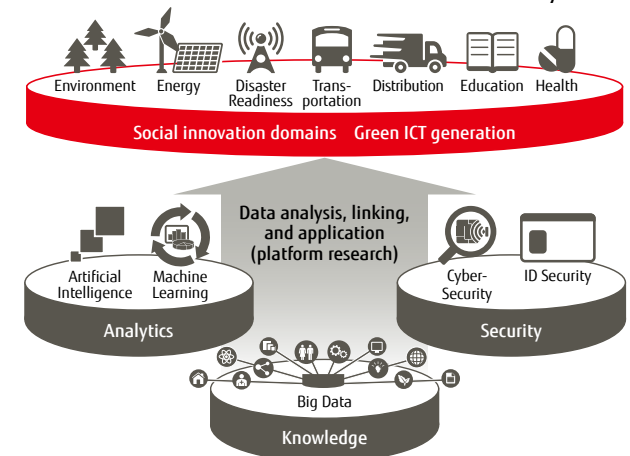
FY 2015 Targets and Plans

Accelerating the creation of green ICT solutions

While further enhancing the environmental contribution of our advanced technologies, the Fujitsu Group will accelerate the creation of not only individual technologies, but also the creation of related green ICT that connects such technologies. In particular, we will keep strengthening green ICT, as well as the data analysis, linking, and platform research that support it, in the domain of Social Innovation, as we continue to promote and publicize to society our technological achievements.

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Research and Development of Advanced Green ICT

Main Activities in FY 2014

Developing Manhole Sensors as a Low-Cost Technology for Detecting Signs of Drainage System Overflow

Building water measuring sensors into manholes is effective for detecting and controlling urban drainage overflow and damage. Battery replacement, however, means a high cost of operation per manhole.

Fujitsu Laboratories Ltd. addressed this issue by determining the number and location of the manholes that should include sensors. The company used analysis of the time it takes water to flow from upstream to downstream, given variations in topography and the shape and the length of the drainage routes. The overall flow of drainage can be understood and forecast with just one-fifth the previous number of sensors. Furthermore, the company has taken into account fluctuations in water levels and developed control technology that optimizes measurement parameters. The amount of electric power consumed has been cut approximately 70% while still maintaining measurement accuracy. This efficiency makes it possible to run the manholes solely on natural energy, bringing per-unit operating costs down approximately 90%.
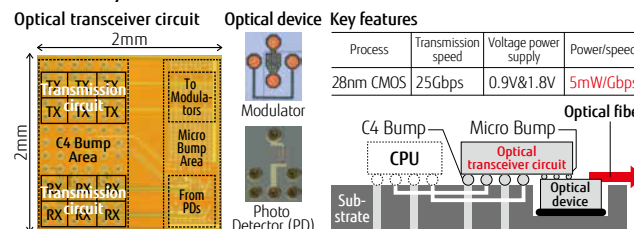
Drainage water level monitoring system
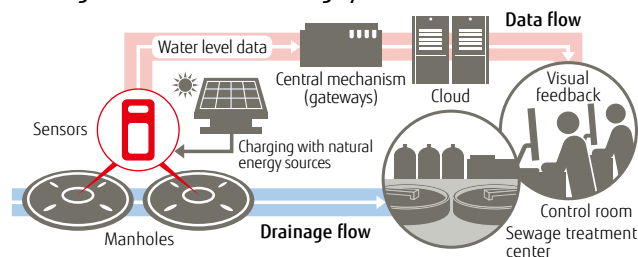
Achieving the World's Most Efficient Inter-Processor Data Transmissions at 5 mW per 1 Gbps*1

Fujitsu, Fujitsu Laboratories Ltd., Fujitsu Laboratories of America, Inc. (FLA), the Photonics Electronics Technology Research Association (PETRA), and the New Energy and Industrial Technology Development Organization (NEDO) announced in February 2015 results of their joint development of an optical transceiver circuit using silicon photonics technology.*2

With this new approach, optical devices are moved at low voltages while adjusting the current amplification at a speed that can track the data fluctuations. This halves normal power consumption but gives high-speed transmission of 25 Gbps. The new technology holds down power consumption and achieves fast transmission in the range of terabits per second, which is expected to lead to great new performance gains for servers and supercomputers.

*1 **1 Gbps:** a rate of transmission where one gigabit of data is transmitted in one second.
*2 **Silicon photonics technology:** technology that patterns optical devices on a silicon substrate.

Illustration of the newly-developed optical transceiver circuit and its key features

Key features

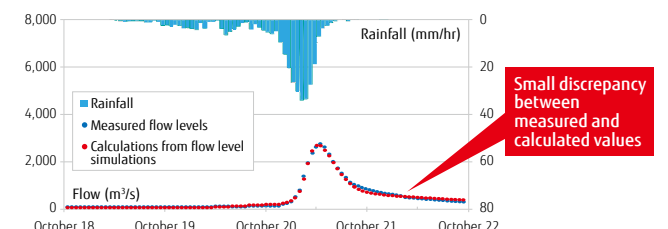| Process	Transmission speed	Voltage power supply	Power/speed
28nm CMOS	25Gbps	0.9V&1.8V	5mW/Gbps

Developing Technology for Automatically Determining Parameters for a Flood Forecasting Simulator to Mitigate Water Damage

Currently, flood forecasting simulators are being applied as part of these waterway management efforts. With simulators, it is preferable to use "distributed runoff models" that show land use distribution, including topography, forests, and urban areas. It is difficult, however, to determine optimal parameters for these models.

To address this challenge, the Public Works Research Institute (PWRI) and Fujitsu Laboratories Ltd. developed technology for automatically determining parameters to use in a flood forecasting simulator based on distributed runoff models. A very high degree of reproducibility was achieved after comparing values from 15 previous flood flow measurements with values calculated using flood forecasting simulations.

This approach allows for continually adjusting optimal settings for the flood forecasting simulator in order to allow river managers to determine suitable actions for disaster preparedness and mitigation.

Values from waterway flow level measurements and values calculated from simulations

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Collaborating with Communities and Taking Action as a Good Corporate Citizen

Our Approach

Fujitsu Group deploys its funds, technology (ICT), and people (expertise) to support the activities of NPOs, NGOs, educational institutions, local governments, citizens' groups, and other diverse bodies that seek to resolve social issues. Specific examples include technological support for citizen enlightenment and studies for biodiversity strategies by local governments; funding support for rare species protection by NPOs and global warming countermeasure projects; technological support for monitoring and other systems; and support for human resources participating in the social contribution programs of international institutions. We determine the targets and content of support based on the needs and issues of local communities.

In addition, we support the social contribution activities undertaken by employees, encouraging each and every employee to maintain high awareness of social and environmental issues and to take an active involvement in resolving these.

Summary of FY 2014 Achievements

	Corporate Citizenship: Social Challenges	Corporate Citizenship: Social Activities
Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Support initiatives that address the complex social and environmental challenges, e.g. biodiversity conservation	With society, support our employees to volunteer social activities
FY 2014 Key Performance	**Funding:** Donated to a children's advocacy center and provided support to disaster areas through the Red Cross **Technology:** Provided our palm vein recognition system **Human resources:** Carried out professional training and other activities	Dedicated **145,000 hours** to social contribution activities by employees

FY 2014 Performance and Results

Expanding the Number and Scale of Regions Carrying Out Social Contribution Activities

In FY 2014, we started social contribution activities at overseas sales companies and support centers, mainly in Asia, and started a large number of new initiatives in collaboration with regional communities. In addition, in areas such as Japan, England, and northern European countries, where social contribution initiatives have been quite active, we worked to increase the number of employees and stakeholders participating, in addition to the number of activities themselves. We actively used our technologies, including applying ICT to our on-site environmental classes taking place in Japan, in order to provide support.

Dedicating 145,000 Hours Worldwide

Through the provision of funding, technology, and human resources, Fujitsu has worked to address many needs, including conservation of biodiversity and education for the next generation in Europe, Middle East, India, Africa, and Asia (EMEIA), as well as local community service in the U.S.A.

Social contribution activities undertaken by our employees overseas showed particular growth, approximately three fold. In Japan and overseas, employees spent 145,000 hours in social contribution activities.

- **Donating palm vein recognition systems to kindergarten: Jiangsu Fujitsu Telecommunications Technology Co., Limited (China)**
  We donated our PalmPass™ kindergarten management system to commemorate our 20th anniversary. Contributing to building an environment of safety and peace of mind at kindergartens.
- **Carrying out professional training for 800 students: Fujitsu UK & Ireland (United Kingdom)**
  Seven employees gave presentation, writing, and other training to students attending Bishop Vaughan School.
- **Sending Christmas presents (toys and cash) to a children's advocacy center: Fujitsu Network Communications (U.S.A.)**
  Over 780 employees collected $2,500 in cash and seven boxes of toys to send to a children's advocacy center. (left photo)
- **Starting 3-year green belt preservation activities: Fujitsu Systems Business (Thailand)**
  After concluding a joint 3-year project agreement with the Thai Royal Forest Department, 400 tree saplings were planted at Bang Khla Chao Park in Samut Prakan province. (right photo)
- **Contributing to preserving biodiversity by building beehives: Fujitsu Technology Solutions EE (Belgium/Luxemburg)**
  In collaboration with specialist organizations, 8,000 euros were invested in placing beehives on the roof of the Fujitsu office.

FY 2015 Targets and Plans

Increasing Activity Hours and the Use of ICT

Along with continuing the new activities carried out in FY 2014, we plan to provide employees with opportunities to engage in contribution activities, while increasing the number of those hours.

In addition, we aim to evolve these activities into greater vehicles for support and contribution. We will do this by leveraging our sensing, monitoring, data analysis and other technologies to solve regional issues in the fields of these social contribution activities, and to promote the application of ICT.

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Main Activities in FY 2014

Tropical Rainforest Regeneration Activities to Bring Back the Rich Forests of Borneo (Malaysia)

Since 2002, the Fujitsu Group, with support from the Sabah Forestry Development Authority, has been engaging in a rainforest regeneration project in the Fujitsu Group Malaysia Eco-Forest Park in Sabah province, Malaysia. 37,500 trees of the indigenous species dipterocarp have been planted on 150 ha of land where non-native lumber trees are growing. Currently, we are mainly working on maintenance in order to tend to the saplings.

Fujitsu Group employees from across the world also gather on site every year to observe the progress of the forest and to take part in eco-tours involving forest preservation work. In FY 2014, 66 employees and family members, from eight countries participated. They cooperated with local stakeholders including local university students and Japanese school students (over 100 people total), to work on preservation activities such as the additional planting of approximately 1,400 trees. Continual efforts like these have helped some trees to reach approximately 10 meters as the forest makes steady progress toward recovering its rich tropical rainforest ecosystem.

Employees helping with tropical rainforest regeneration

Giving On-Site Environmental Classes to 7,300 Students and Providing Opportunities to Think About the Environment (Japan)

In order to have the young generation of the future understand the importance of the environment, the Fujitsu Group is sending employees to schools as lecturers to conduct on-site environmental classes. In FY 2014, lecturers visited 144 elementary and junior high schools, teaching classes to approximately 7,300 students.

Currently, the adoption of ICT at schools is moving forward and future classes will be taught with each and every student using a tablet PC. Fujitsu's on-site classes provide an opportunity to experience the new manner of education in advance. In FY2014, the two classes, called "Living With Just One Earth" and "Our Future Jobs and Ecology," were developed and carried out in collaboration with an NPO. Classes could be taught with students exchanging opinions and seeing tallies of how each person answered, which made for an interactive experience as only ICT can offer. In addition, the "Our Future Jobs and Ecology" class incorporated elements of career counseling.

Participating in classes where each student has a tablet PC

114 Employees Take Part in a Bicycle "Race" (Finland)

Fujitsu Finland has participated every year since 2009 in the Kilometer Race, an event in which teams of cyclists race to cover the greatest distance. The race aims to spur the switch from automobiles to bicycles as a means of commuting and private travel, thereby reducing the impact of everyday transportation on the environment.

The race was held from May to September in 2014, with participation by 114 employees of Fujitsu Finland. The employees' total distance traveled was 134,819 kilometers, which contributed to reducing CO_2 emissions by about 23.6 tons. For the race overall, distance travelled exceeded 27 million kilometers, reducing carbon emissions by 4,765 tons.

Fujitsu also took part in a concurrent charity event held by the Finnish Red Cross. Fujitsu Finland contributed a total of 10,000 euros to disaster aid, the greatest amount contributed by any of the more than 2,400 teams participating.

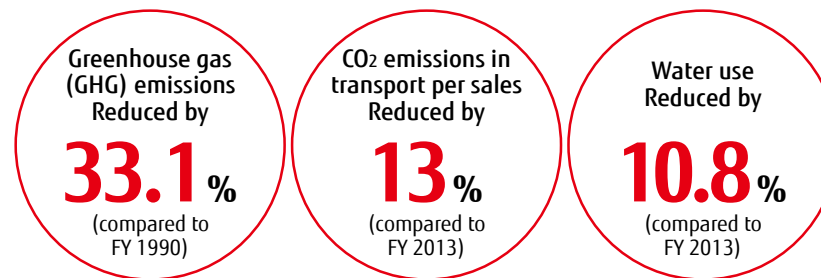Left: Matti Koskimies, who participated in the race with his family
Right: Kimmo Vaikkola, Fujitsu team captain

Chapter II | Reducing Our Environmental Burden

Amid an upward trend in energy consumption at datacenters as cloud services expand in recent years, the Fujitsu Group has set new targets in our Environmental Action Plan (Stage VII) for the promotion of environmental considerations in datacenters. In addition, we have set targets that include reduction of GHG emissions from workplaces, business partners, and distribution operations; the effective use of water resources; and expanded use of renewable energy.

Key Achievements in FY 2014

Greenhouse gas (GHG) emissions Reduced by 33.1 % (compared to FY 1990)

CO₂ emissions in transport per sales Reduced by 13 % (compared to FY 2013)

Water use Reduced by 10.8 % (compared to FY 2013)

About Symbols Used ✔ Examined by third-party organization ⭕ FY 2014 target achieved

	Theme	Target items (targets through the end of FY 2015)	FY 2013 Key Performance	FY 2014 Key Performance		Status	
Our Business	Efficient Business Operations: Reduce Greenhouse Gas Emissions	Reduce greenhouse gas emissions in our business facilities by 20% compared to 1990.	Reduced by 29.4%	Reduced by 33.1%	✔	⭕	**P. 31**
	Efficient Business Operations: Energy Intensity	Improve energy intensity in our business facilities over 1% each year.	1.6% improvement	5.1% improvement	✔	⭕	**P. 31**
	Efficient Business Operations: Datacenters	Improve environmental performance of our major datacenters.	Established the Green Datacenter Committee Set internal targets (common and individual targets)	Formulated Guidelines for Promoting Environmentally Conscious Datacenters Adopted PUE visualization tools		⭕	**P. 33**
	Efficient Supply Chain: Logistics	Reduce CO₂ emissions[1] per sales from logistics over 4% compared to 2011.[2]	Reduced by 32%	Reduced by 13%	✔	⭕	**P. 35**
	Efficient Supply Chain: Procurement	Expand activities of reducing CO₂ emissions to all types of suppliers.	Reached 95.9% of business partners implementing CO₂ reduction or limitation measures	Reached 100% of business partners implementing CO₂ reduction or limitation measures		⭕	**P. 37**
	Efficient Use of Resources: Renewable Energy	Increase generation capacity and procurement of renewable energy.	Installed 210 kW of new solar power generation facilities Purchased approx. 23,000 kWh of green power	Concluded an agreement to purchase solar generated electricity in the U.K. Purchased approx. 21,000 kWh of green power		⭕	**P. 38**
	Efficient Use of Resources: Water	Continue efforts for efficient use of water, e.g. water recycling and water saving.	Water usage: 18,620,000 m³ (reduced by 6.3% compared to FY 2012)	Water usage: 16,600,000 m³ (reduced by 10.8% compared to FY 2013)	✔	⭕	**P. 39**
Continuous targets[3]	Reduced Environmental Impact: Chemicals	Reduce chemical emissions to less than the average level of 2009-2011 (PRTR: 21 tons, VOC: 258 tons).	PRTR: 21 tons; VOC: 246 tons	PRTR: 19t; VOC: 219t	✔	⭕	**P. 40**
	Reduced Environmental Impact: Waste	Reduce the amount of waste to less than average level of 2007-2011 (amount of waste: 31,134 tons). Keep Zero Emission in factories in Japan.	Waste generated: 23,522 tons Achieved zero emissions at domestic business sites	Waste generated: 22,258 tons Achieved zero emissions at domestic business sites	✔	⭕	**P. 41**
	Reduced Environmental Impact: Recycling	Maintain over 90% resource reuse rate of business ICT equipment at Fujitsu recycling centers.	92.7%	94.3%	✔	⭕	**P. 43**

[1] Reduce CO₂ emissions: Calculate emissions of CO₂ equivalence from energy consumption [2] As the initial target was achieved, from FY 2014 the Fujitsu Group has changed the target
[3] Continuous targets: Targets to be achieved through business activity because already achieved high level performance.

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

Our Approach

The Fujitsu Group is working in every location where it does business to reduce emissions from its own sites, promote the reduction of emissions along its value chain, and contribute to the reduction of emissions by its customers and society overall, in order to help fight global warming, and to do so from a common understanding of the necessity to halve (or cut by 80%, in the case of developed countries) greenhouse gases emitted across the globe by 2050.

The primary GHG emissions from our business sites (plants, datacenters, and offices) 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. We have set reduction targets for these and are striving to decrease the amounts we use and emit.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Reduce greenhouse gas emissions in our business facilities by	**20**% (compared to FY 1990)
	Improve energy intensity in our business facilities over	**1**% (each year)
FY 2014 Targets	Reduce greenhouse gas emissions in our business facilities by	**19**% (compared to FY 1990)
	Improve energy intensity in our business facilities by an average	**1**% or more (each year)
FY 2014 Key Performance	Reduced greenhouse gas emissions in our business facilities by	**33.1**% (compared to FY 1990)
	Improved energy intensity in our business facilities	**5.1**%

FY 2014 Performance and Results

Promoted Reductions of CO2 Emissions Accompanying Energy Consumption

As CO_2 reduction measures, we continued in FY 2014 energy saving practices with the machinery at each business site (including installing inverters and BAT*-applicable machinery, as well as switching fuels, etc.) optimizing production processes and drive machinery, optimizing office air-conditioning temperatures, saving energy used for lighting and office automation equipment, and promoting visualization and data measurement with regard to energy consumption.

In addition, to reduce emissions of gases other than CO_2 (such as PFC, HFC, SF_6, and NF_3), we are switching to low global warming potential (GWP) gases, and installing abatement systems on production lines.
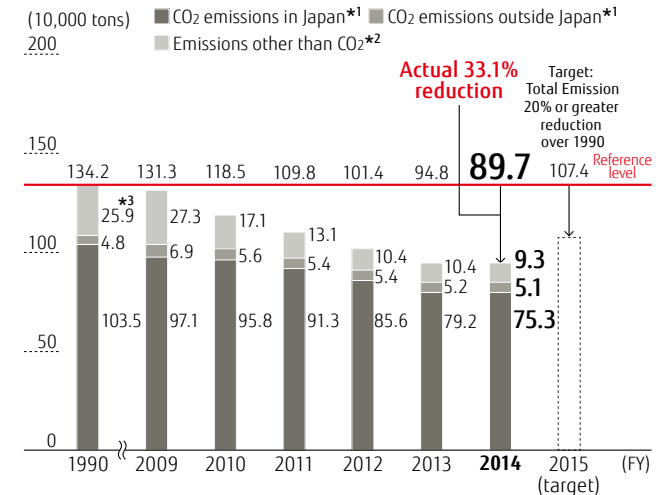
* **BAT (Best Available Technologies):** State-of-the-art technologies that are available for use and help contribute to reducing GHG.

51,000-ton Year-On-Year Reduction of GHG

FY 2014 overall GHG emissions were approximately 897,000 tons (emission rate per unit of sales: 18.9 tons/100 mill. yen), which was a 33.2% reduction compared to FY 1990.

The breakdown of GHG was approximately 804,000 tons of CO_2 (753,000 tons emitted in Japan, 51,000 tons outside Japan) and approximately 93,000 tons of gases other than CO_2.

Trends in Total Greenhouse Gas Emissions

(10,000 tons) ■ CO2 emissions in Japan[*1] ■ CO2 emissions outside Japan[*1]
■ Emissions other than CO2[*2]

Actual 33.1% reduction Target: Total Emission 20% or greater reduction over 1990

FY	1990	2009	2010	2011	2012	2013	**2014**	2015 (target)
Total	134.2	131.3	118.5	109.8	101.4	94.8	**89.7**	107.4 Reference level
Emissions other than CO2	25.9 *3	27.3	17.1	13.1	10.4	10.4	**9.3**	
CO2 outside Japan	4.8	6.9	5.6	5.4	5.4	5.2	**5.1**	
CO2 in Japan	103.5	97.1	95.8	91.3	85.6	79.2	**75.3**	

*1 **CO2 emissions in/outside Japan:** CO2 conversion factor for purchased electric power has been calculated with a fixed value of 0.407 tons of CO2 per MWh since FY 2002 for performance reports in our Environmental Action Plan.
*2 **Emissions other than CO2:** These are converted to equivalent amounts of CO2 using the global warming potential (GWP) of each gas.
*3 Our FY 1995 performance is taken to be the same as emissions in FY 1990.

FY 2015 Targets and Plans

Continually Strengthen Facility Investment and Operational Improvements

At our datacenters and in some of our manufacturing of electronic components, increased CO_2 emissions are projected accompanying increases in energy usage. However, we will strive for 20% or greater reductions, compared to FY 1990, through continual efforts to invest in facilities and improve operations.

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

Main Activities in FY 2014

Promoting Energy Management Practices Using ICT

The Fujitsu Group has built an Environmental Management Dashboard that is a platform system supporting our environmental business operations. The dashboard, which has been adopted at all of our business sites in Japan, collects and analyzes a variety of environmental information in real time and centrally displays that information on a portal screen.

The dashboard provides a visual perspective, in real time, of the types and quantities of energy used, the CO_2 emissions, the per-person and per-unit-area CO_2 emissions, and monthly comparisons over the previous year for the entire Group, as well as for each business office, company unit, building, and floor. In addition, in FY 2014, we added functions necessary for following the PDCA cycle, including the ability to display the status of energy usage by datacenters (see p. 33), in order to achieve the targets of the Fujitsu Group Environmental Action Plan (Stage VII). This system is not only used for decisions and judgments made by the management ranks and those responsible for energy management, but is also helpful for encouraging the independent, environmentally conscious conduct of employees.


Environmental Management Dashboard

Reducing Electric Power Usage with Group-wide Energy Saving Measures

At Fujitsu Wireless Systems Limited, the 2011 Great East Japan Earthquake forced attention toward energy saving measures amidst supply constraints, prompting the creation of the Power Saving Measures Committee. Every year since FY 2012, targets for reductions in annual power usage have been set and various effective measures have been discussed and implemented. Initiatives to date include installing energy saving compressors, reducing the number of servers operating, installing photovoltaic panels and LED lighting, utilizing heat dissipation measures for production and other machinery, and utilizing indoor insulation. On top of these, we are automatically monitoring electricity peaks 24 hours a day and working to limit electric power usage, particularly during the hottest period of summer and the coldest period of winter, when demand reaches its apex.

Results of these compound energy saving efforts yielded a 24.5% (over FY 2010) reduction in electric power usage in FY 2014 (459.67 kWh) and a 27.3% improvement in peak usage (172 kW).

Annual electric power usage at Fujitsu Wireless Systems

(1000 kW/year)

FY	Usage
2010	1,876.33
2011	1,682.11
2012	1,625.23
2013	1,522.74
2014	1,416.66
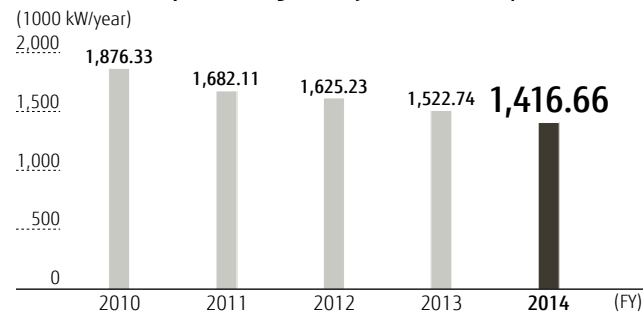
Reducing Peak Summer Electric Power Demand Focusing on our Production Unit

We are striving to even out and limit peak summer electric power usage at Fujitsu IT Products Limited, which is our plant producing servers and storage equipment.

In addition to existing energy saving measures, we also rolled out activities at our Production and other Units, emphasizing reductions in electric power usage in the middle of the day during the summer, which is our peak period. These activities include shifting clean room operating hours to the nighttime, consolidating soldering equipment (using batch production) for printed circuit boards, reassessing heater usage, and shutting off nitrogen generating equipment (by switching to using liquid nitrogen during the daytime).

These and other measures, such as consolidating the operation of machinery for inspection, and reducing the load on air-conditioners by applying aluminum insulation and heat reduction sheets to building windows, yielded more than a 10% reduction year on year in contracted electric power in FY 2014, and an approximate CO_2 emissions reduction of 620 tons.

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Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites | Promoting Environmentally Conscious Datacenters | Reduce CO₂ Emissions from Logistics and Transportation | Promoting CO₂ Emission Reductions with Our Business Partners | Increasing Amounts of Renewable Energy Used | Efficient Use of Water Resources | Reducing Chemical Substances Emissions | Limiting Amounts of Waste Generated | Product Recycling

Promoting Environmentally Conscious Datacenters

Our Approach

With the spread of cloud computing, energy use by datacenters is on an upward trend and society is showing more concern over the environmental performance of datacenters. Also, electricity costs are increasing with rising electric utility rates. Datacenters comprised 27% of FY 2012 CO_2 emissions in the Fujitsu Group, with emission rates increasing 8.1% over the three years from FY 2010–12 at our 19 main datacenters in Japan. Furthermore, our datacenter CO_2 emissions are expected to continue to rise as our cloud business grows, making environmentally conscious datacenters 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* approximately 80% of our datacenters (based on server room floor space) and we are working to boost environmental performance.

* Activity targets: Global datacenters 1,000 m² or larger, in principle, or specific datacenters requested by datacenter business units.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Improve **environmental performance** of our major datacenters
FY 2014 Key Performance	Formulated Guidelines for Promoting Environmentally Conscious Datacenters Adopted PUE visualization tools

FY 2014 Performance and Results

Established Guidelines for Promoting Environmentally Conscious Datacenters

In order to implement the Fujitsu Group Environmental Action Plan (Stage VII), we continued activities from the previous fiscal year to finalize an action policy in the Green Datacenter (GDC) Committee. We utilized the GDC Working Group (GDCWG), which plans and implements activities under the GDC Committee, and Japan and Overseas Sub-Working Groups (SWGs) to proceed with activities that have produced the target results.

As part of these activities, we have formulated Guidelines for Promoting Environmentally Conscious Datacenters, with the objective of smoothly implementing energy saving initiatives at our datacenters (DC). The Guidelines are shared specifications compiling information related to energy saving efforts at datacenters and include rules, methods for improvements, cautions to be heeded during implementation, and case studies of successful upgrades.

Adopting Tools for Visualizing Power Usage Effectiveness (PUE)

We built our own PUE visualization tools, and adopted them in May 2015, with the objective of establishing an environment for continual upgrades and for sharing information about our DC energy usage. These tools are one of the functions of our Environmental Management Dashboard that has been adopted at all Fujitsu Group business sites within Japan. The system displays monthly tallies of DC energy usage, as well as PUE, and DC Maturity Models (DCMM).

Tracking PUE Values at our Major Datacenters

PUE values at our major DCs are identified and calculated using The Green Grid's* calculation method. Improvement measures are also undertaken utilizing the same organization's DCMM.

PUE Visualization Tools

* The Green Grid: A non-profit organization established in February 2007 mainly by U.S. IT companies to promote energy efficiency improvements for datacenters and IT equipment in the IT industry. Fujitsu has been participating in the organization since March 2008.

PUE Values and PUE Calculation Method

PUE values	PUE calculation method, etc.
Average: 1.65 Range: 1.33–2.66 Applicable DCs: 35 centers	- The Green Grid's method used - Implementation of improvement initiatives using the organization's DCMM

FY 2015 Targets and Plans

Promote Initiatives for Increased Environmental Performance

We plan to apply, and consistently revise, the Guidelines for Promoting GDC while continuing to adopt external ventilation, "visualize" air-conditioning temperatures and energy, promote full usage of rack space, flexibly adjust air-conditioning temperatures, and separate heating and cooling functions.

In addition, we plan to utilize tools for visualizing PUE and leverage those tools as a means to share information and exchange opinions among all parties working with our DCs.

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Promoting Environmentally Conscious Datacenters

Main Activities of FY 2014

Datacenter environmental efforts in Australia

The Fujitsu Group promotes the environmental contribution of its datacenters in Australia; three out of six sites are certified under the National Australian Built Environment Rating System (NABERS) and all sites are ISO 14001 Environmental Management System Certified.

NABERS is the world's first tool that compares the energy use, environmental performance and efficiency of IT equipment based on actual performance and is validated by an external government department. It has been applied to buildings in Australia for over 10 years and has recently included datacenters.
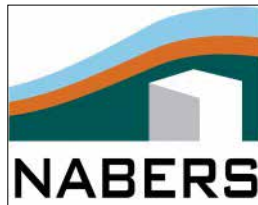
Noble Park Data Center

Noble Park Data Center (4,000 square meters) was the first Australian datacenter to achieve formal certification resulting in a four-star energy rating within two data halls and a 3.5 star rating for an entire facility. This was a milestone achievement because no other datacenter in Australia had achieved certification.

Homebush Bay

To achieve 3.5 stars in NABERS; the datacenter at Homebush Bay underwent an extensive refurbishment in 2008, including adding the energy-saving features now used in the building. First, there is a high density, hybrid cooling technology that uses recycled, chilled water and spatial layout planning to minimize thermal currents.

Second, there is a closed-loop cooling system that significantly reduces the amount of water needed to maintain the facility at the industry standard in terms of temperature and humidity.

A state-of-the-art building control management system allows monitoring of the power consumption around the facility in real time and allows settings to be adjusted to maximize efficiency.

Western Sydney Data Center

Western Sydney Data Center was commissioned in November 2011 and was purpose-built with energy efficiency as a prime consideration. It achieved four stars in NABERS. In addition to the energy saving features from the Homebush facility, the Western Sydney facility also incorporates a Diesel Rotary Uninterruptible Power Supply (DRUPS), indirect free cooling, a heat-reflective roof, storm-water harvesting and the extensive use of recycled materials.

Fujitsu Datacenters are leading the way with energy efficiency. With the industry average being 3 stars, our rated datacenters are proven to be 27% more efficient, which results in a combined carbon emission savings of over 12,000 tons.

In addition to the NABERS rating, the Western Sydney Data Center also gained a Certified Energy Efficiency Datacenter Award (CEEDA) gold rating for a client-specific data hall. CEEDA certification is based on the European Union's Code of Conduct for Datacenters, and it offers bronze, silver and gold ratings for datacenters.

Western Sydney Data Center

A Stakeholder's Comment

"Fujitsu has been a true partner in the NSW Government's efforts to cut emissions and encourage energy efficiency. As part of a technical working group, the company's advice has been integral in helping create the world leading NABERS Energy for data center benchmarking tools. By championing their use, Fujitsu is contributing to these robust tools becoming the industry standard."

Rob Stokes
NSW Environment Minister

Reduce CO_2 Emissions from Logistics and Transportation

Our Approach

Given the broad geographical range of Fujitsu Group companies and business sites inside and outside Japan, and the materials/ parts sourced from a significant number of business partners, reducing CO_2 emissions accompanying the logistics and transportation activities of the Group is a priority issue.

To this end, the Group has strengthened its targets for CO_2 emission reductions from domestic transport. Furthermore, our Environmental Action Plan (Stage VII) has expanded the scope of reductions beyond domestic targets to transport within regions overseas, as well as international transport, while the Plan is also driving forward rationalization and efficiency improvements in global logistics. In addition, the Group is working toward lowering environmental impacts along our entire supply chain, and working on cooperative efforts with business partners, such as displaying copies of the Fujitsu Group Green Logistics Procurement Directions, in order to strengthen our partnerships. Lastly, as an initiative in our distribution process overall, the Group is devoting effort to the 3Rs (Reduce, Reuse, Recycle) with respect to packaging products and materials/parts.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Reduce by over **1**% on average every year CO_2 emissions per sales from transport (compared to FY 2013)
FY 2014 Targets	Reduce by over **1**% CO_2 emissions per sales from logistics (compared to FY 2013)
FY 2014 Key Performance	Reduced by over **13**% CO_2 emissions per sales from logistics (compared to FY 2013)

FY 2014 Performance and Results

Promoting Initiatives in Domestic, Intra-regional (Outside of Japan), and Overseas International Transportation

With regard to the Group's transportation inside Japan, we are continuing to effectively utilize rail transport as an ongoing modal shift initiative, while also relaxing specific delivery requirements and choosing transport boxes in a way that increases truck loading efficiency rates, which has led to a decrease in our number of trucks. In addition, we are actively implementing what we call "stacked shipping," which efficiently combines cargo from multiple Group companies.

Modal shift is also being implemented in international and intra-regional transportation outside of Japan. The Group is shifting from air to ocean transport, shortening transport distances, utilizing low emission vehicles, reducing shipping vehicle numbers by having fewer, urgent deliveries, and engaging in other efforts such as reducing the amount of air transport.

FY 2014 Targets Achieved

FY 2014 CO_2 emissions from transport were 119,000 tons. Of that amount, 23,000 tons were from domestic transport, while 96,000 tons were from international and overseas local transport. CO_2 emissions per sales were reduced 13% compared to FY 2013, which broadly surpassed our Environmental Action Plan (Stage VII) targets for FY 2014. Major contributors to this achievement were expanded modal shifts from air to ocean transport in our overseas transport practices.

Trends in CO_2 Emissions from Transport

(thousand tons)   (tons/100 mill. yen)

■ CO_2 from Logistics
–○– CO_2 emissions per sales (tons/100 mill. yen)
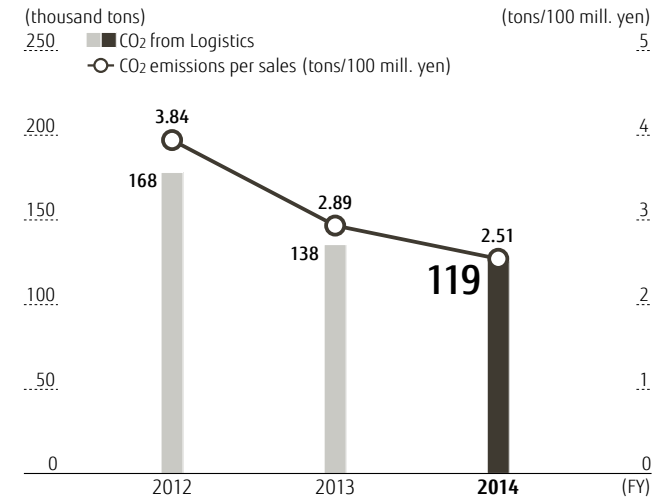
*FY 2012–13 performance figures were revised accompanying reassessment of categories for compiling CO_2 emissions data from international logistics.

FY 2015 Targets and Plans

Continuing and improving emission reduction

We will create efficiencies for truck transportation by continuing to improve our loading efficiency ratio; we will promote modal shifts for international logistics; and we will continue to pursue this target in FY 2015 as well, while promoting green logistics throughout the Group.

Reduce CO_2 Emissions from Logistics and Transportation

Main Activities in FY 2014

Initiatives to Improve Logistics Efficiency in Japan

Reducing Truck Transportation by Consolidating Factories

We unified our domestic mobile phone factory to one location, Fujitsu Peripherals Limited (Hyogo Prefecture). This consolidation allowed us to organize shipments to customers and reduce the number of trucks needed.

Reducing Truck Transport by Incorporating External Warehouses Inside our Factory

We have been able to reduce the number of truck runs between factories and warehouses by moving leased warehouses near our Fujitsu Oyama Factory (Tochigi Prefecture) inside the factory itself.

Improving Truck Loading Efficiency by Optimizing Packing Boxes

At Fujitsu Telecom Networks Limited (Tochigi Prefecture), we examined our truck loading efficiency data for shipments of network products overseas. The result was a shift to packing boxes that could be stacked in two tiers. This new approach boosted our truck loading efficiency ratio and allowed us to reduce the number of trucks we use.

Packing boxes stackable in two tiers

Reducing Shipping Distances by Redesigning Logistics Routes

We reassessed the logistics route of PC products between Fujitsu Isotec Limited (Fukushima Prefecture) and the Sendai terminal, which allowed us to shorten the shipping distance. Prior to the change, the route to the Sendai terminal, which handles shipping for the Tohoku region, passed through the Tokyo terminal, where other packages were loaded onto our trucks. The new approach instead made this a direct route to the Sendai terminal with no stop in Tokyo.

Logistics route to the Sendai terminal

Previous

Post-improvement

Fujitsu Isotec (Fukushima)

Sendai terminal

Tokyo terminal

Nagoya terminal

Fujitsu Isotec (Fukushima)

Sendai terminal

Tokyo terminal

Nagoya terminal
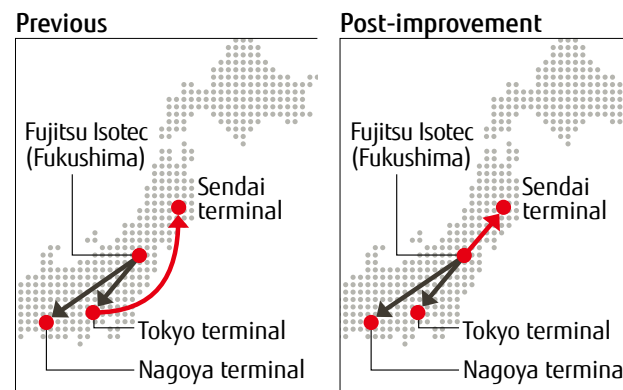
Reducing Truck Transport between Factories

At Fujitsu Frontech Limited (Niigata Prefecture), we examined our truck loading efficiency ratio for regular shipments of repaired products between our Niigata and Kumagaya Factories. Carrying out cargo adjustments allowed us to reduce the number of trucks on this route.

Promoting Modal Shifts Overseas

At Fujitsu Technology Solutions GmbH (Germany), we have been undertaking a long-term initiative to boost logistics efficiency.

The primary effort is to implement a modal shift from air to ocean transport for international shipments. In addition, we have implemented driver training and adopted new-model low-emission vehicles as we collaborate with logistics service providers to reduce environmental burdens along our supply chain.

Reducing Environmental Burdens from Packaging

The Fujitsu Group is also working to reduce the environmental burden of packaging products and parts across our entire logistics process.

By promoting 3R efforts, such as downsizing the boxes used for products and components of the Group, and shifting to reusable alternatives such as returnable containers, we are implementing reductions in the amount of cardboard, cushioning, and other packaging we use.

Promoting CO₂ Emission Reductions with Our Business Partners

Our Approach

The reduction of CO₂ emissions through society-wide energy saving has become a critical theme for global warming prevention. Fujitsu Group believes that it is necessary to work toward CO₂ reductions in-house, as well as along its entire value chain, which is why we advocate measures to reduce or limit the CO₂ emissions of our business partners.

From FY 2013, we are expanding the scope of these measures to business partners beyond component suppliers to include other areas such as construction, facilities, maintenance, and software. Specifically, we are surveying the status of business partners' activities for CO₂ emissions reduction and offering support and appeals for extra efforts to business partners that do not meet standards set by our Group. Going forward, we intend to leverage the green procurement expertise of the Fujitsu Group to work with our business partners to drive forward initiatives and contribute to decreasing the environmental burden of society overall.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Expand activities of reducing CO₂ emissions to all types of suppliers.
FY 2014 Targets	Reach a **100**% of business partners implementing CO₂ reduction or limitation measures. (Achieved ahead of schedule—the target was the end of FY 2015.)
FY 2014 Key Performance	Reached **100**% of business partners implementing CO₂ reduction or limitation measures.

FY 2014 Performance and Results

Surveyed and Supported Initiatives at Business Partners

We are distributing our Group's original environmental surveys to our business partners and checking the status of their activities for reducing CO₂ emissions. For business partners who have not reached stage 2 activities (the implementation of CO₂ reduction and limitation activities with numerical targets), we provide our own check lists featuring easily actionable case studies as opportunities for partners to start implementing activities.

In addition, we have compiled a leaflet that we supply as a guide for activities. The leaflet contains information on topics from how companies can proceed with regard to global warming issues to reference information on publicly disclosed activities.

Moreover, we confirmed changes in CO₂ emission reduction activities for business partners surveyed in the previous fiscal year and encouraged them to continue those activities.
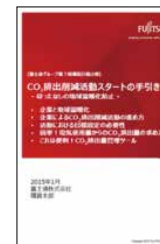
Leaflet distributed to business partners

Achieved 100% Implementation Ratio with Business Partners Undertaking Initiatives to Reduce CO₂ Emissions

In FY 2014, the second year of the Fujitsu Group Environment Action Plan (Stage VII), we set a target to strive for a 100% implementation ratio achieved ahead of schedule, given the results of our target achievements in the plan's first year. We managed to achieve this 100% ratio thanks to persistent encouragement and patient explanations resulting in cooperation from partners who were facing difficulties implementing these activities.

Drawing Up an Activity Evaluation Index

Stage 3 Activity expansion

Stage 2 Activity implementation

Stage 1 Activity announcement (declaration of commitment)

Target stages
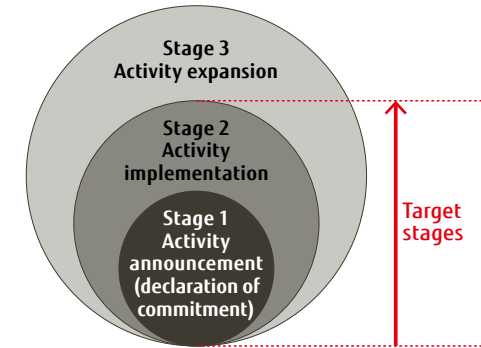
Stage 1 Activity announcement (declaration of commitment)	The stage when the significance of reducing/limiting CO₂ is understood and a declaration of commitment is made as a company.
Stage 2 Activity implementation	The stage when initiatives are implemented, each with fixed numerical targets, policies, or plans.
Stage 3 Activity expansion	The stage when activities are expanded from inside to outside the company (such as support for the upstream supply chain or cooperative efforts to review approaches with external organizations).

FY 2015 Targets and Plans

Achieve Targets Ahead of Schedule and Formulate New Initiatives

We are striving for early achievement of our targets ahead of year's end in FY 2015, the final year of the Fujitsu Group Environment Action Plan (Stage VII), by encouraging business partners that are now part of the Plan and by endeavoring to reach a 100% Stage 2 compliance ratio.

On top of this, we are discussing and formulating green procurement initiatives for the Environment Action Plan (Stage VIII).

Increasing Amounts of Renewable Energy Used

Our Approach

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

In the Fujitsu Group, we see energy supply and demand issues as one of the links of the fight against global warming. Our Environmental Action Plan (Stage VII) actively aims to expand our use of renewable energy, adopt solar panels at our business sites, and purchase power generated from renewable energy sources.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Increase generation capacity and procurement of renewable energy
FY 2014 Key Performance	Purchased green power: **approx. 21,000 kWh** Concluded an agreement to purchase solar generated electricity in the U.K.

FY 2014 Performance and Results

Promoted the Purchase of Green Power

We did not install new solar power generation equipment, but maintained our 865 kW of total installed capacity as of the end of FY 2014.

In addition, we purchased green power of approximately 21,000 kWh for our FY 2014 exhibitions and events.

Green power certificate

TOPICS — Concluding an Agreement to Purchase Solar Generated Electricity in the U.K.

Fujitsu UK & Ireland has concluded an agreement to purchase electric power generated by a photovoltaic system installed on the roof of their office building by LCPF. The panels were installed in February and March 2014 and have been operating since April of the same year.

In the half-year up to September 2014, the system generated 34,907 kWh of electricity, which was equivalent to 3.5% of the total power consumption on site.

Rooftops with solar panels installed

Cumulative Total Installed Solar Power Generation (renewable energy)

(Rated capacity, kW)
- New Installation in the current fiscal year
- Installation through the previous year

FY	Values
2010	265 (115 / 30 / 120)
2011	608 (265 / 93 / 200 / 50)
2012	655 (608 / 20 / 27)
2013	865 (655 / 200 / 10)
2014	**865**
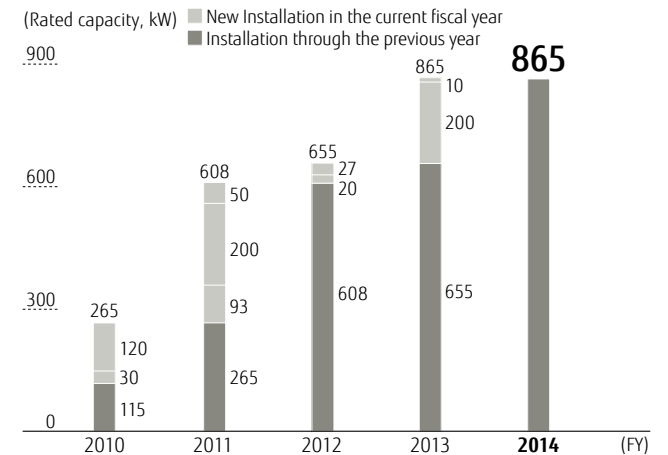
FY 2015 Targets and Plans

Promote Expanded Use of Renewable Energy

We aim to further increase our use of renewable energy by utilizing the Guidelines for Adopting Renewable Energy and the Optimum Installation Maps & Power Generation Estimation Tools, both created in FY 2013, and by reviewing renewable energy adoption at business sites.

We will also strive to continually offset our power usage by actively using green electricity at our exhibitions and events.

Efficient Use of Water Resources

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. From FY 2013, we established efficient water usage as a new goal and have boosted our efforts even greater than in the past.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Continue efforts for efficient use of water, e.g. water recycling and water saving

FY 2014 Key Performance	Water usage: **16,600,000** m³ reduced by **10.8**% (compared to FY 2013)

FY 2014 Performance and Results

10.8% reduction in water usage from FY 2013

Water usage for FY 2014 was 16,600,000 m³ (usage rate per unit of sales: 349 m³/100 mill. yen), which was a 10.8% reduction compared to FY 2013. The proportion of recycled water overall was 41.9%, which greatly contributed to efficient usage.

Each of our business sites has set water usage reduction targets and is working to meet them. Our Noble Park Data Center in Australia, for instance, set a 5% (250 m³) target for water use reduction in FY 2014 and their efforts resulted in achieving a 23% (1,180 m³) reduction.

Trends in Water Usage and Amounts of Recycled Water

(10,000 m³)

■ Water usage　■ Amount of recycled water

	2010	2011	2012	2013	2014
Total	2,747	2,760	2,521	2,579	2,357
Amount of recycled water	584	580	535	717	696
Water usage	2,163	2,180	1,986	1,862	1,660

(FY)
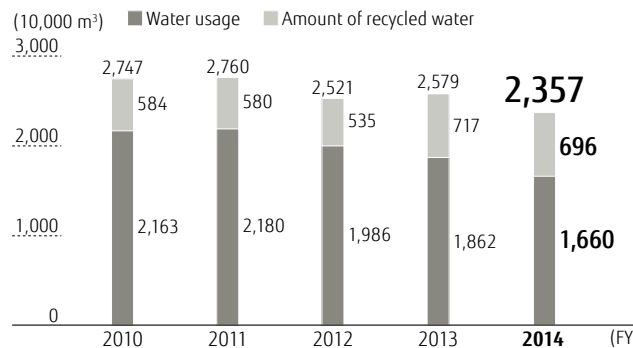
TOPICS Reducing Water Usage by Installing Automatic Filters

At the Fujitsu Nagano Plant, "scrubbers" use water in a spray washing process to remove acidic and alkaline waste gases emitted from the production of printed circuit boards. Spray water is recycled inside the scrubbers, which can lead to contamination from the growth of (microbial) slime from organic compounds and common bacteria in the waste gas. This contamination tends to clog the scrubbers and lower their processing efficiency. Up to now, in order to avoid this situation, it has been necessary to discharge a large amount of wastewater and refresh the scrubbers with new water.

The automatic filters that we have newly installed are able to automatically remove the slime from recycled water and allow us to significantly reduce our water usage and wastewater discharge. As of December 2014, we have started operating machines No. 1 and 2 and are seeing water reduction benefits. Future plans include installing filters in machine No. 3 for even further benefits.

Water reductions from installing recycled water purification equipment for scrubbers

Water type	Amount reduced
Water reductions	3,460 m³/yr*

* Total for machines No. 1 and 2.

Recycled water purification equipment for scrubbers

FY 2015 Targets and Plans

Strive to Continually Achieve our Targets

To pursue our Environmental Action Plan (Stage VII) goal to "continue efforts for efficient use of water, e.g. water recycling and water saving," we will combine efforts one by one at each of our plants and further endeavor to efficiently use water resources following on from actions in FY 2014.

| Top Message | Interview to Head of Corporate Environmental Strategy Unit | Special Feature: Human Centric Intelligent Society | Fujitsu Group Environmental Action Plan Stage VII | Chapter I Contribution to Society | Chapter II Reducing Our Environmental Burden | Environmental Management | Data Overview |

Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites | Promoting Environmentally Conscious Datacenters | Reduce CO₂ Emissions from Logistics and Transportation | Promoting CO₂ Emission Reductions with Our Business Partners | Increasing Amounts of Renewable Energy Used | Efficient Use of Water Resources | **Reducing Chemical Substances Emissions** | Limiting Amounts of Waste Generated | Product Recycling

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 Sheets (SDS), control income and expenditures in conjunction with purchasing data and inventory data, and strengthen our management and efficient use of chemicals.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Reduce chemical emissions to less than the average level of FY 2009–2011 (PRTR: **21** tons, VOC: **258** tons)
FY 2014 Key Performance	PRTR: **19** tons / VOC: **219** tons

FY 2014 Performance and Results

Ensured Stronger Control of Chemical Substances by Linking Our Chemical Information and Purchasing Data Systems

We linked our FACE Chemical Information System with our Purchasing Data System, such that it is now impossible to purchase chemical substances that are not registered in our systems. In FY 2014, we introduced this new linked approach at multiple business sites within the Group.

At our Fujitsu Akashi Plant, for instance, which houses multiple Group and non-Group companies, we are deploying this system in order to fortify each company's compliance with laws and regulations related to the environment. We are thoroughly implementing chemical substance management by sorting, as either registered or unregistered, the chemical substances in over 10,000 items purchased each month.

Achieved On-Going PRTR Substance and VOC Emission Targets

Group-wide chemical substance emissions for FY 2014 came to 19 tons for PRTR substances and 219 tons of VOC, thanks to efforts that included enhancing our maintenance of recovery equipment.

TOPICS **Mitigating Environmental Burdens from the Chemical Treatment of Magnesium PC Cases**

At Fujitsu Kasei Limited, hydrofluoric acid-containing etching agents are used in the chemical treatment process for PC cases made from magnesium alloy, in order to prime and rust proof case surfaces before painting.

Big data accumulated internally at the same company has been used to discover an optimal process for reducing the amount of etching agent needed, while still maintaining control values for the etching agent tanks. We began applying this approach to our large-scale production in January 2015. As a result, we have been able to reduce our amount of agent consumption by 50%, while producing fewer waste products, reducing energy and water usage, and lowering costs by approximately 2.4 million yen annually.

Trends in PRTR Substance Emissions in Japan

(tons)

2009–11 average	2011	2012	2013	2014
21	22	22	21	19 Target level

Actual 10% reduction

(FY)
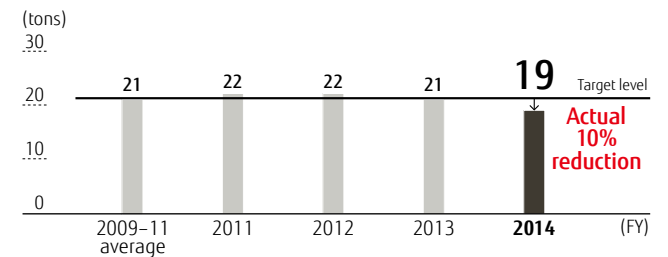
Trends in VOC Emissions in Japan

(tons)

2009–11 average	2011	2012	2013	2014
258	229	236	246	219 Target level

Actual 15% reduction

(FY)
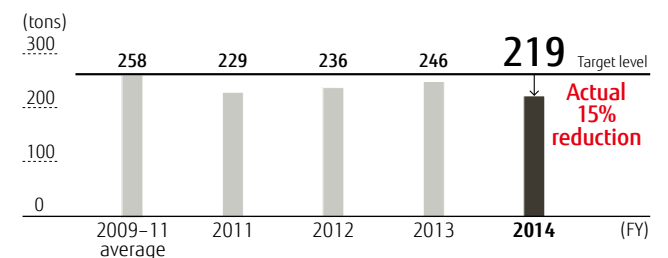
FY 2015 Targets and Plans

Continue to Limit PRTR Substance and VOC Emissions

We will continue holding the Fujitsu Group-wide emissions of chemical substances below the average from FY 2009-2011 in Japan. In particular, we plan to review new reduction measures for painting processes, which involve high emissions of chemical substances.

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Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites | Promoting Environmentally Conscious Datacenters | Reduce CO₂ Emissions from Logistics and Transportation | Promoting CO₂ Emission Reductions with Our Business Partners | Increasing Amounts of Renewable Energy Used | Efficient Use of Water Resources | Reducing Chemical Substances Emissions | Limiting Amounts of Waste Generated | Product Recycling

Limiting Amounts 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.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)

Reduce the amount of waste to less than the average level of FY 2007–2011 (amount of waste: **31,134** tons)

Keep Zero Emission in factories in Japan.

FY 2014 Key Performance

Waste generated: **22,258** tons

Achieved **Zero Emissions** at Japan's business sites.

FY 2014 Performance and Results

Installed Equipment, Treated Waste In-House, and Converted Waste to Value-Added Material

We implemented measures including improving in-house treatment of alkalic used water at Shinko Electric Industries Co., Ltd. to reduce the amount generated (by 160 tons), switching to fixed-hour operation of cleaning equipment at Aizu Fujitsu Semiconductor Manufacturing Limited to reduce (by 100 tons) the amount of waste acid generated, using vacuum dehydration dryers at our Nagano Plant to reduce (by 77 tons) the amount of organically rich used water generated, and converting waste toner into value-added material (90 tons) at FDK Corporation. We were able to meet our target by holding waste generation to 22,258 tons (generation rate per unit of sales: 0.47 tons/100 mill. yen). Additionally, we were able to maintain zero emissions at all of our Japan's business sites.

Trends in Amount of Waste Generated and Effective Utilization Ratio

(tons)   ■ Amount of waste generated   (%)
-○- Effective utilization ratio (Japan only)

FY	2007–2011 average	2011	2012	2013	2014
Amount of waste generated (tons)	31,134	28,448	27,353	23,522	22,258 (Target level)
Effective utilization ratio (%)		95.7	96.4	97.9	98.9

Actual 28.5% reduction
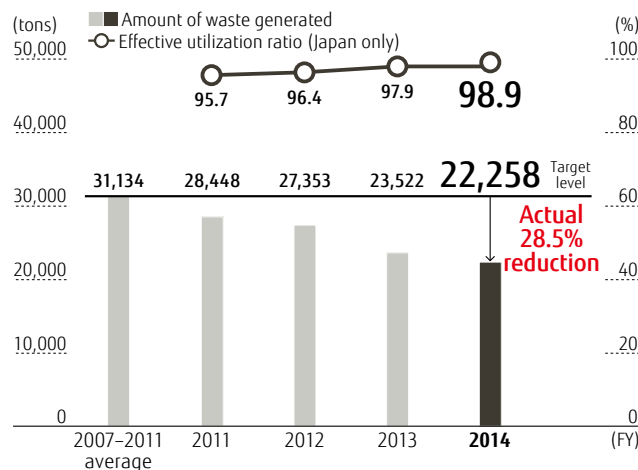
Breakdown of Waste Generated, Effective Utilization, and Final Disposal

(tons)

Waste Type	Waste Generated	Effective Utilization	Final Disposal
Sludge	4,578	4,490	88
Waste oil	1,176	1,071	105
Waste acid	3,234	3,224	10
Waste alkali	3,257	3,255	2
Waste plastic	3,601	3,536	65
Waste wood	1,276	1,276	0
Waste metal	641	640	1
Glass/ceramic waste	415	415	0
Other*	4,079	2,941	1,138
Total	22,258	20,849	1,409

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

FY 2015 Targets and Plans

Continue to Limit Waste Generation

We will strive to "Reduce the amount of waste to less than 31,134 tons," and "Keep Zero Emissions in factories in Japan" as we work to limit waste generation by continuously installing equipment and reusing resources.

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Limiting Amounts of Waste Generated

Main Activities in FY 2014

Reducing Amounts of Recovered Waste Acid by Switching to Fixed-Hour-Operation of Cleaning Equipment

At Aizu Fujitsu Semiconductor Manufacturing Limited, we have been able to greatly reduce waste products generated by our cleaning equipment.

In the early steps of semiconductor manufacturing, there is a cleaning treatment that uses liquid chemicals. Due to the chemical substance content of this liquid, we have recovered the liquid and any used cleaning water, and have a contractor dispose of them as industrial waste. Consequently, we looked at an approach to reduce the amount of used cleaning water collected after the cleaning process in order to cut down on industrial waste.

First, we ran a simulation to ascertain whether, if we reduced the amount of used cleaning water collected, we could still achieve a concentration of chemical substances in the wastewater that was at or below a level that would allow processing using our own used water treatment equipment. Next, we varied the amount of used cleaning water collected and analyzed the concentration of chemical substances in the water at each point. Results showed that, even if we reduced the amount of used cleaning water collected, we could guarantee a level of concentration that our own used water treatment equipment could handle.

These findings showed that it was possible to take the used cleaning water that we had been hiring a contractor to dispose of as industrial waste and instead process it in-house, thereby reducing our amount of industrial waste and lowering our contracting expenses.

Reducing Circuit Board Waste by Applying Component Reworking Technology to Replace Components

When we wanted to change faulty components on the circuit boards, etc. of our ICT devices, the typical approach was to apply heat, remove only the faulty component, and attach a new part. Recently, however, devices are becoming more compact and more functional, and have components attached with extreme precision. Heat during the repair process spreads to other components. There had been no option other than disposing of the entire circuit board without replacing its parts.

Fujitsu Advanced Technologies Limited (FATEC) set to work addressing this issue by developing new technology for component reworking technology. We were the first in the industry to succeed at building heating technology that pinpoints conduction, radiation, and convection (the three prerequisites for heating). The technology allows replacement of components installed with highly precise parameters of 0.2-mm gaps (compared to 1-mm spacing previously). This allowed us to avoid disposing of 291,000 circuit boards for mobile phones and smartphones, and contributed to cost savings of 2.4 billion yen.

In addition, FATEC has employed this component reworking technology and has started installation designs that make further precision possible. Analysis has also been used to add local cooling (air cooling) functions to the component reworking technology and make it possible to shrink component spacing (from 10 mm to 1.8 mm) for memory components situated around a CPU.

Conventional component replacement technology

- Nozzle
- Hot air
- Part to be replaced
- Neighboring component
  Heat transfers to the other components causing faulty connections!

Newly developed component reworking technology

- Feedback control
- Temperature sensor
- Halogen beam
- Heat transfer cap (approx. 2 g)
- Pinpointed air
- Far infrared heating
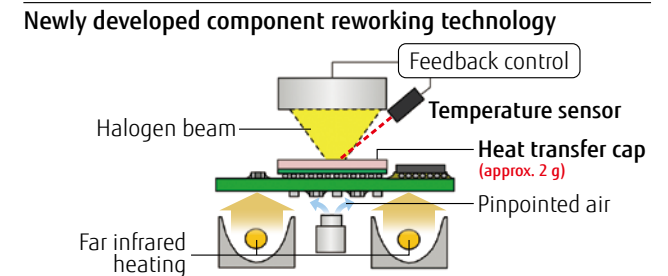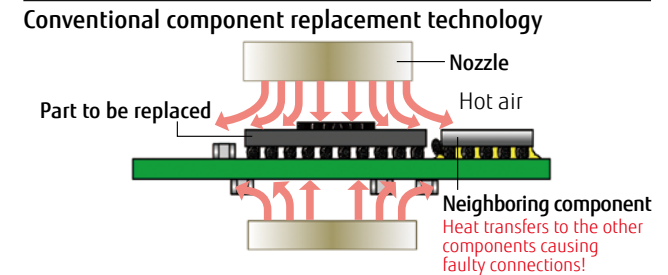
Zero Emission Efforts

As one of the targets of its Environmental Action Plan (Stage VII), the Fujitsu Group is implementing zero emission efforts at its business sites in Japan. Though some sites previously had not been able to meet the target, they switched to efficiently using (through thermal recycling and material recycling) waste products that they had not been able to recycle, and all business sites achieved zero emissions, which we maintained in FY 2014.

Going forward, we will continue our zero emission efforts and strive to reduce our final disposal amounts.

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Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites | Promoting Environmentally Conscious Datacenters | Reduce CO$_2$ Emissions from Logistics and Transportation | Promoting CO$_2$ Emission Reductions with Our Business Partners | Increasing Amounts of Renewable Energy Used | Efficient Use of Water Resources | Reducing Chemical Substances Emissions | Limiting Amounts of Waste Generated | Product Recycling

Product Recycling

Our Approach

The Fujitsu Group's product recycling programs are based on our belief in Extended Producer Responsibility (EPR) and Individual Producer Responsibility (IPR). EPR holds that producers bear responsibility for products not only at the design and manufacturing stages, but also at the disposal and recycling stages, while 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.

Given this understanding, the Fujitsu Group carries out recycling programs that comply with the waste disposal and recycling laws and regulations of the various countries in which it operates. As an authorized operator under the Industrial Waste Wide-Area Recycling Designation System based on Japan's Act for Promotion of Effective Utilization of Resources, Fujitsu accepts industrial waste for appropriate processing at Fujitsu recycling centers across Japan. Furthermore, following our belief in IPR, we also try to do as much collection, reuse and recycling as we can, even in countries where recycling is not obligatory.

Summary of FY 2014 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)

Maintain over **90**% resource reuse rate of business ICT equipment at Fujitsu recycling centers.

FY 2014 Key Performance

Achieved resource reuse rate of business ICT equipment at Fujitsu recycling centers

94.3% [Japan 90.9% overseas 99.0%]

FY 2014 Performance and Results

Promoted Recycling of ICT Products in Each Country

The Fujitsu Group carries out recycling in Japan, EMEA (Europe, the Middle East, Africa), the Americas (the United States, Canada, and Brazil), and Asia (Singapore, the Philippines, Australia, Hong Kong, Taiwan and South Korea).

In Japan, we have 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. We also partner with recycling companies near our hubs outside Japan to promote recycling of ICT products.

Achieved a 90% or Higher Reuse Rate

We processed 5,016 tons of recycled ICT products (used ICT products for business applications) from corporate customers and achieved a resource reuse rate of 90.9%. Also, we have now collected a total of 103.276 end-of-life PCs from individual customers.

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

FY	2011	2012	2013	2014
Resource reuse rate* (%)	90.9	91.5	91.3	90.9
Amount processed (tons)	5,487	5,297	5,035	5,016

* 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	2011	2012	2013	2014
End-of-life PCs collected (units)	83,358	85,381	98,549	103,276

TOPICS **Surpassing 150,000 pounds (approx. 68 tons) of Recycled ICT Waste in the U.S.A.**

Since 2007, Fujitsu America, Inc. (U.S.A.) has partnered with AnythingIT, a local electronics recycler, to remove end-of-life electronics such as laptops, desktops, printers, and servers from companies in the healthcare, education, retail, government, and public sectors. The cumulative total of waste removed over the last eight years surpassed 150,000 pounds (approx. 68 tons) in April 2014.

AnythingIT, which properly disposes of all electronics in accordance with ISO 14001, is a conscientious recycler and a recipient of e-Stewards* certification from the Environmental Protection Agency (EPA) in the U.S.A. AnythingIT recycles de-manufactured components in ways that ensure materials are kept out of landfills.

Fujitsu America, Inc. is cognizant of its responsibility as an ICT device manufacturer and is using its partnership with AnythingIT to bring environmental awareness to the entire lifecycle of its electronics.

* **e-Stewards® certification:** created by the Basel Action Network (BAN), an environmental action organization in the U.S.A., e-Stewards is a certification program that assesses high-quality operators in the electronics recycling and asset recovery industries.

FY 2015 Targets and Plans

Strive to Continually Achieve Our Targets

Going forward, we will strive to maintain a 90% or higher resource reuse rate for business ICT equipment at our Fujitsu recycling centers, and will drive forward our domestic and overseas recycling programs.

Environmental Management

Since our founding in 1935, the Fujitsu Group has made the initial concept of "operating in harmony with nature" our cornerstone.
We have now set "In all our action, we protect the environment and contribute to society" as our corporate value under the FUJITSU Way.
Contributing to the sustainability of the planet is a social responsibility of the Fujitsu Group and a reason for our existence.
We will build relationships of trust with a wide range of stakeholders and will work to preserve the environment throughout our value chain.

P. 45 Environmental Management
Endeavoring to make sustainable improvements to environmental management systems based on ISO14001, the Group is promoting unified environmental management.

P. 47 Green Procurement
To provide customers with products and services that have a light environmental footprint, we are implementing green procurement in concert with our business partners.

P. 48 Initiatives to Minimize Environmental Risk
To minimize the risk of polluting the environment and disrupting ecosystems, the Group is continuing such initiatives as setting voluntary control values that are tougher than those designated by laws and regulations.

P. 49 In-House Environmental Educational and Enlightenment Activities
We carry out various forms of environmental education and enlightenment training based on the belief that, "to promote environmental management, it is essential to raise the environmental awareness of each and every employee and to take proactive measures."

P. 50 Communication with Society
The Fujitsu Group works to communicate with our customers, employees, business partners, shareholders, investors, local and international communities, and all of our diverse stakeholders.

Evaluation by Outside Institutions

The Fujitsu Group has earned praise from external institutions for its active promotion of environmental and social initiatives, and has been included among Socially Responsible Investment (SRI) brands.

Recognition: Climate Performance Leadership Index (CPLI)
Evaluating institution: CDP

Recognition: Dow Jones Sustainability Indexes (World, Asia Pacific)
Evaluating institution: Dow Jones & Co., RobecoSAM AG

Recognition: FTSE4Good Index Series
Evaluating institution: FTSE International Ltd.

Recognition: oekom Corporate Rating
Evaluating institution: oekom research AG

Recognition: Morningstar Socially Responsible Investment Index
Evaluating institution: Morningstar, Inc.

Recognition: UN Global Compact 100
Evaluating institution: U.N. Global Compact

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Environmental Management Green Procurement Initiatives to Minimize Environmental Risk In-House Environmental Educational and Enlightenment Activities Communication with Society

Environmental Management

Endeavoring to make sustainable improvements to environmental management systems based on ISO14001, the Group is promoting unified environmental management.

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-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 subordinate to the Green Management Committee that is working to unify global information transmission and strengthen environmental management systems (EMS) activities.

Environmental Management Framework (as of March 2015)
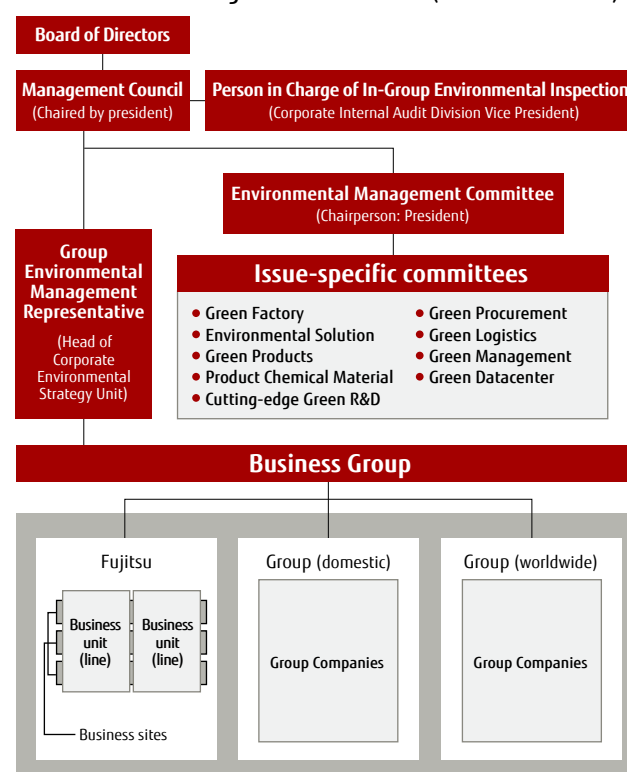
Configuration and Operation of Environmental Management Systems

The Fujitsu Group has constructed environmental management systems (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 the end of FY 2014, the Fujitsu Group has acquired global integrated ISO 14001 certification for a total of 77 companies of Fujitsu and its domestic group companies, as well as for 10 overseas Group companies. Our 13 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 2012	FY 2013	FY 2014
Internal audit	Findings	277	218	148
External audit	Findings	6	3	5
	Opportunities for improvement	67	70	89
Environmental compliance	Violations of environmental laws	7	3	5

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| Environmental Management | Green Procurement | Initiatives to Minimize Environmental Risk | In-House Environmental Educational and Enlightenment Activities | Communication with Society |

Environmental Management

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, which is unaffiliated with any line organization, takes the lead, allocating internal auditors who belong to Fujitsu or Fujitsu Group companies to carry out internal audits.

In FY 2014, we carried out internal audits for Fujitsu or Fujitsu Group factories, offices, and other facilities at 391 sites in Japan and 14 overseas. For this audit, we scrutinized the results of the FY 2013 internal audit and external audit and found four major focal points: (1) compliance, (2) operational control, (3) education and training, and (4) proprietary EMS operational organization. As a result of these internal audits, we discovered 148 findings, 70 fewer than in FY 2013. The fact that the ratio of findings to audits declines every year suggests that our environmental management system has taken hold.

Domestically, 40 percent of findings involved legal compliance and operational control. Many of the findings for the former were related to industrial waste disposal and for the latter many were related to chemical substances.

And overseas, receiving cooperation from external organizations and experts thoroughly knowledgeable in local laws and regulations and operation, we carried out internal audits with the objective of strengthening compliance. As a result, regarding the content of the findings, some 40 percent related to "legal and other requirements" and "operational control."

An internal audit being conducted overseas

External Audit and Results

To maintain our ISO 14001 certification, 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, 89 areas, for our organizations in Japan, and 41 areas, for our overseas Group companies, were pointed out as opportunities for improvement. Five minor nonconformities were identified at our overseas entities. We have completed corrective actions against these matters as of the end of FY 2014. Moreover, external audit findings were shared throughout the Group, and we plan to confirm the status of these matters in the FY 2015 internal audit.

These audits were carried out, and as a result of the judgment of the two certifying bodies, we were granted renewal of our ISO 14001 certification.

Status of Environmental Compliance

While the Fujitsu Group committed no major violations of environmental laws and caused no accidents that had any major impact on the environment in FY 2014, there were five events in which laws were violated. They consisted of one violation related to industrial waste processing manifests and four deficiencies in notification documents.

Legal violations continued to be few in number, but we will aim to make our self-checks even more thorough and bring the number of violations to zero. Also, with regard to industrial waste, we will select outstanding waste processors while configuring a structure to eliminate administrative violations related to waste from offices.

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, and to monitor the situation involving improvements to, and legal compliance with: nonconformance issues notified at environmental audits, communications activities, direct and indirect effects and risk/countermeasure levels identified in environmental impact assessments, and the setting of environmental objectives and targets.

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

ISO 14001 Green Management System

Green Procurement

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

Procurement Activities Based on Green Procurement Direction

The Fujitsu Group summarized what it asks of its business partners when purchasing green parts, material and products in the "Fujitsu Group Green Procurement Direction" and is promoting green procurement activities with domestic and international business partners. We have five requirements (table below) for our business partners and promote procurement from business partners that fulfill these requirements.

Using an original Environmental Survey for business partners, we investigate the situation with regard to business partners' EMS construction, CO_2 emission control/reduction, biodiversity preservation and water resource preservation activity, and ask them to take appropriate measures.

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	○	○

* **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 an environmental management systems (EMS) to ensure that they continuously implement environmental burden reduction activities. We also conduct surveys to determine their EMS level (refer to the following diagram). For business partners whose survey responses indicate a level 1 EMS, we will provide the Fujitsu Group's original EMS (FJEMS[1]) and support the business partner's independent EMS efforts.

[1] **FJEMS:** The Fujitsu Group's own EMS, which has requirements drawn from ISO 14001 requirements and aims to promote environmental protection activities based on a PDCA cycle.

Establishment of EMSs for Green Procurement

Level Promotion

Level 3
Obtain ISO 14001 and other independent certification

ISO 14001, Ecostage, Eco-Action 21, KES, others

Environmental protection activities carried out based on a PDCA cycle

Level 2
Fujitsu Group's original EMS (FJEMS) or Supplier's own EMS

Level 1
Supplier's environmental activities and representative's name of the activities

Business partner's independent environmental activities

CO_2 Emission Control/Reduction Initiatives

We have made CO_2 emission reduction, an important issue in environmental conservation, a requirement for green procurement from our business partners, and we ask them to carry out CO_2 emission reduction and control activities with target amounts. (See Page 37.)

Acquiring Information on Chemical Substances Contained in Products

The Fujitsu Group is investigating information on chemical substances contained in suppliers' products by using AIS[2] and MSDSplus[3] offered by JAMP.[4] The investigations take place when products are designed, designs are changed or business partners are changed, and information gathered is shared through our internal chemical substance information management system. To address chemical substance management through the value chain as a whole, we plan to appeal to primary business partners and those further up the value chain in the future.

Also, we are proactively participating in activities to standardize investigations related to green procurement promoted by JAMP and others.

[2] **AIS (Article Information Sheet):** Information sheet for information on chemical substances in molded products.
[3] **MSDSplus (Material Safety Data Sheet plus):** Information sheet for information on chemical substances in chemicals and preparations.
[4] **JAMP:** Joint Article Management Promotion-consortium

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

The Fujitsu Group asks its business partners to establish a chemical substances management system (CMS) based on JAMP guidelines on the management of chemical substances contained in products.

We carry out CMS audits where Fujitsu's auditors directly confirm the management of chemical substances at the business partner's manufacturing bases, and if the system established is inadequate, auditors make requests for corrections and provide support. Afterwards, we regularly confirm the system state and its operational status through periodic audits. With the understanding of our business partners, the Fujitsu Group will continue carrying out management of chemical substances included in products.

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Environmental Management   Green Procurement   Initiatives to Minimize Environmental Risk   In-House Environmental Educational and Enlightenment Activities   Communication with Society

Initiatives to Minimize Environmental Risk

To minimize the risk, the Fujitsu Group is continuing such initiatives as setting voluntary control values that are tougher than those designated by laws and regulations throughout the entire value chain.

Environmental Pollution Prevention and Preparations for Climate Change Risks

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.

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.

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

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 concert with administrative agencies.

As of FY 2014, there are seven 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. (See Page 56.)

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. (See Page 40.)

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. (See Page 47.)

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.

Concerving 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.

At our business sites, we promote the conservation of biodiversity on our property. At the Fujitsu Numazu Plant (Shizuoka prefecture), we create a favorable environment for diverse flora and fauna. These steady efforts have been recognized with the award for "Contributing to a Green Society" by the Organization for Landscape and Urban Green Infrastructure in April 2014.

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In-House Environmental Educational and Enlightenment Activities

We carry out various forms of environmental education and enlightenment training based on the belief that, "to promote environmental management, it is essential to raise the environmental awareness of each and every employee and to take proactive measures."

Carrying Out Comprehensive Environmental Education

At the Fujitsu Group, every three years we have all of our employees undertake e-Learning to acquire a basic understanding of environmental management. In addition, education is provided to meet the needs of each level of employee from new entrants to managers, as well as those of departments including design development, sales and systems engineering. We are also implementing internal auditor, waste management and other training as professional education for employees in charge of work related to the environment.

Fujitsu's Environmental Education System

	New entrants	Ordinary employees	Middle managers	Senior executives
General education	Environmental e-Learning (every three years)			
	Level-specific training		Level-specific training (initial)	
Professional education Note: Only relevant persons attend lectures	Function-specific training (ad-hoc)			
	Internal auditor education			
	Waste management worker education			
Enlightenment	Lectures, seminars and training sessions			
	Environmental Contribution Awards and Photo Contest			
	Information provided through the Web and social networking services			

Raising Awareness Through an In-House Award Scheme

To raise the environmental awareness of employees at all Fujitsu Group companies, we have operated an Environmental Contribution Awards scheme and conducted an Environmental Photo Contest, open to all employees, every year since 1995.

Numerous entries for the FY 2014 Environmental Contribution Awards were put forth along the three themes of "Environmental contribution to customers and society through our products, solutions, and services," "Reducing the negative environmental impact of our business activities," and "Social contribution activities." Three submissions, including "A participatory system for sharing disaster information in Vietnam and Indonesia," were awarded the Environmental Contribution Award.

For the Environmental Photo Contest, 470 entries were received from Fujitsu Group employees across the globe. This contest, through the solicitation of entries and voting for winners, encourages employees to think of environmental problems from a global perspective.

Winners of the Environmental Grand Prize

1. **A participatory system for sharing disaster information in Vietnam and Indonesia**
   Fujitsu offers a community participation-based system for the sharing of disaster information. This enables river administrators and residents to collect and share information using smartphones to deal with flooding, an issue in both Vietnam and Indonesia. (See Page 21.)

2. **Reducing product disposal costs by applying component reworking technology**
   Fujitsu has achieved the replacement of defective components installed in high-density devices, a technologically difficult challenge, through the development of component replacement technology (i.e., component reworking technology) that uses new composite heating technology. We have established reworking technology for mobile phones and for multilayer PCBs. (See Page 42.)

3. **Environmental and social contribution: Let's enjoy the nature of Aso**
   Fujitsu is engaged in maintenance activities such as the planting of 15,000 broad-leaved trees and grass cutting, with the aim of improving Aso's function in cultivating water sources and preserving its ecosystems. We have continued the activities for 12 years, with about 160 persons taking part every year.

Environmental Photo Contest Top Prize Winner "Lifecycle"

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Communication with Society

The Fujitsu Group works to communicate with our customers, employees, business partners, shareholders, investors, local and international communities, and all of our diverse stakeholders.

Environmental Dialogues with Experts

In order to boost environmental management that reflects the changes and needs of society, the Fujitsu Group believes that it is important to have many occasions for dialogue with a wide range of stakeholders and to build relationships of assured trust.

The Fujitsu Group began environmental dialogues from FY 2011, holding a total of 20 gatherings as of the end of FY 2014. Over 40 experts have been invited in far ranging fields, including journalists and representatives of NPOs, universities, and corporations, to engage in dialogues on diverse themes centered on the environment. These dialogues allow us to understand the expectations and demands placed on Fujitsu, and lead to improvements and reinforcement of our environmental management.

Discussing the Contribution of ICT to Community Creation

A lack of employment that drives young people to the cities, as well as decline in the birth rate, means communities have fewer children and face a shrinking and aging population. At the same time, urban areas experience the problems of air pollution and heat island effects caused by population concentration. Many of these issues are dependent upon regional characteristics such as population, industrial structure, and site location. In our fifth environmental dialogue, we exchanged ideas with experts and local

FY 2014 Themes

1st dialogue The possibilities of ICT in aiding food issues in developing countries

2nd dialogue The materiality of Fujitsu

3rd dialogue Interacting with the media

4th dialogue Effective reuse of, and contributions to, water resources

5th dialogue Social design

6th dialogue Responding to climate change (agricultural sector)

government representatives on the potential of ICT and its contribution in effecting regional revitalization.

The Fujitsu Group has developed the EvaCva evaluation tool, which we offer as open data. This tool assesses the characteristics of regions in the categories of environment, economy, and society, and comprehensively enables the visualization of values. From that topic, the environmental dialogue discussion widened to the assessment and optimal usage of local resources, and the creation of new value in regions.

This discussion generated a variety of opinions, including "Making regional resources visible and identifying issues allows the creation of fitting countermeasures," "Releasing good information by itself does little if more people don't make use of it; using information and making it known are separate issues," and "We need to devise ways to make data visible and generate a response from people." As we enhance the precision of the system using such opinions as reference, we have reaffirmed the importance of working to resolve social issues through the power of ICT.

The EvaCva website
http://evacva.net/

From Dialogues to the Field

An exchange of ideas on measures to deal with global warming, held during the environmental dialogue in FY 2013, resulted in a new collaboration.

Fujitsu sponsored and cooperated in planning the "World Wonder Museum: The Power of ICT to Visualize the Living World," a summer vacation event produced by Shinichi Takemura, a participant in the dialogue and Professor at the Kyoto University of Art and Design. A workshop and talk event held from July to August 2014 in Otemachi, Tokyo attracted over 1,000 visitors.

Using the workshop to show children the reality of the global environment, the event provided a major opportunity to let people learn about initiatives and possibilities for resolving global environmental issues through ICT.

A scene from the workshop

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Comments from One of the Facilitators

I commend Fujitsu for once again raising a number of themes and solidly advancing dialogues with society this year. These substantive, ongoing dialogues are not merely a show of activity, but are a valuable asset for both Fujitsu and society.

Such dialogues have directly revealed the gaze of society and what it deems important, and have been worked into the PDCA cycle to effect improvement. They have yielded positive results, with experts awarding high praise to Fujitsu's environmental management system and its performance.

Another merit of the dialogues has been the deepening of awareness and of the dialogues themselves, advancing from good ideas and easily taken initiatives, to things that are difficult to quickly address but are important.

In the dialogues so far, relationships with diverse experts have deepened and there have been several examples of concrete collaboration. I hope that the dialogues will take further steps for the resolution of societal issues together, and hope that the dialogues will also engage with residents and young people. I have high expectations for the further evolution and deepening of the dialogues.

Junko Edahiro
President, Institute for Studies in Happiness, Economy and Society

Tie-ups with External Organizations in order to Spread Green ICT and a Sustainable Society

By actively participating in external organizations inside and outside Japan, the Fujitsu Group is endeavoring to promote and spread green ICT solutions for realizing a sustainable society.

Major Participating Organizations

World Business Council for Sustainable Development (WBCSD):
reviewing assessment indices in traffic and transportation fields, and promoting concrete solutions in various categories

Global e-Sustainability Initiative (GeSI) :
contributing to SMARTer2030, a report comprehensively analyzing the potential of ICT to bring about sustainability

The ITU-T's ICT and Climate Change Group (SG5 WP3):
spreading and expanding green ICT

ISO TC286 SC1 (Smart Urban Infrastructure Metrics):
building infrastructure assessment methods and promoting efforts to clarify the role of ICT in smart communities

The Steering Committee for the ICT Sector Guidance to the GHG Protocol Product Life Cycle Accounting and Reporting Standard:
assessing ICT life cycle environmental effects

Global Taskforce on Harmonizing Global Metrics for Data Center Energy Efficiency:
promoting environmental consciousness of datacenters

Uptime Institute Network:
taking part in surveys and meetings for improving data center performance and efficiency

JEITA Green IT Committee:
contributing to the establishment of a method for evaluating the contributions of products and services

TOPICS Contributing as a Gold Sponsor to the Publication of GeSI's SMARTer2030 Report

In June 2015, the Global e-Sustainability Initiative (GeSI) issued "SMARTer2030 Report: ICT Solutions for 21st Century Challenges." The report contained many actual case studies of the potential for ICT in contributing to sustainability, including estimates of an economic effect of 11 trillion USD and a 20% reduction in greenhouse gas emissions worldwide by 2030. It also introduces examples of Fujitsu's solutions in the areas of energy, agriculture, and manufacturing.

Fujitsu is proud to have contributed to the Report as a Gold Sponsor, and will continue to play our full part in providing and promoting the solutions described in the report to ensure that potential is realized.

An event in Bonn, Germany, attended by Fujitsu employees (center), to announce publication of the report

Communication through Exhibitions and Events

The Fujitsu Group provides information on our initiatives toward solving global environmental issues by using exhibitions and events inside and outside Japan as a means for communicating with customers and residents of regional communities.

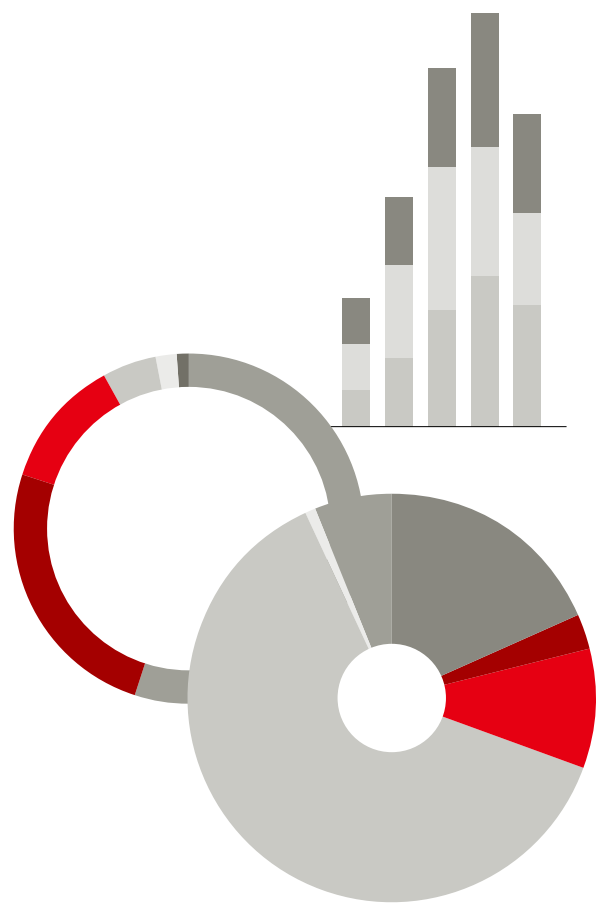### Main Exhibitions and Events Attended in FY 2014

- ITU Green Standard Week/Beijing, China/September 2014
- Eco-Products 2014/Tokyo, Japan/December 2014
- Kawasaki International Eco-Tech Fair/Kanagawa, Japan/February 2015

The Fujitsu Group booth at Eco-Products 2014

Data Overview

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Environmental Accounting

Fiscal 2014 Breakdown of Results (Capital investment, costs, economic benefits)

Item		Main areas covered	Cost (billion yen)		Economic benefits (billion yen)
			Capital investment	Expense	
Business area costs / benefits	Pollution prevention costs/ benefits	Air/water pollution prevention, etc.	0.32 (-1.71)	4.77 (+0.14)	6.76 (-0.05)
	Global environmental conservation costs/benefits	Global warming prevention, saving energy, etc.	0.66 (+0.11)	2.86 (-0.32)	1.92 (+0.03)
	Resource circulation costs/ benefits	Waste disposal, efficient utilization of resources, etc.	0.06 (+0.06)	2.40 (-0.09)	11.11 (-1.52)
Upstream/downstream costs/benefits		Collection, recycling, reuse, and proper disposal of products, etc.	0.02 (-0.00)	0.83 (-0.01)	0.52 (+0.05)
Administration costs/benefits		Provision and operation of environmental management systems, environmental education of employees, etc.	0.02 (+0.00)	2.66 (-0.46)	0.38 (-0.23)
R&D costs/benefits		R&D on products and solutions that contribute to environmental protection, etc.	0.02 (-0.16)	37.91 (+7.27)	65.51 (+9.65)
Social activity costs		Donations to, and support for, environmental groups, etc.	0.00 (-0.00)	0.04 (+0.01)	—
Environmental remediation costs/benefits		Restoration and other measures related to soil and groundwater contamination, etc.	0.02 (-0.03)	0.07 (-0.51)	0.00 (+0.00)
Total			1.12 (-1.73)	51.54 (+6.04)	86.21 (+7.92)

* 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. Items shown as "0.00" include items for which the value was smaller than the display units used.

Costs and Economic Benefits in FY 2014

The results of this accounting for FY 2014 showed expense of 51.5 billion yen (a 13% increase from the previous year) and the economic benefits were 86.2 billion yen (a 10% increase from the previous year). Thus both costs and benefits increased. Also, our capital investment was 1.1 billion yen (a 61% decrease from the previous year).

Driving forward our R&D on products and solutions to contribute to environmental conservation for customers and society led to broad increases in R&D costs and economic benefits (calculated by our own method for estimating economic benefits).

Trends in Expenses and Economic Benefits

(billion yen) ■ Expenses ■ Actual benefits ■ Estimated benefits

	2011	2012	2013	2014
Expenses	37.0	38.3	45.5	51.5
Estimated benefits	58.0	59.7	63.3	72.7
Actual benefits	13.3	13.2	15.0	13.5

(FY)

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 10.23 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 2014, to be necessary for the Fujitsu Group in Japan to carry out these tasks in the next FY and beyond.

Material Balance

Fujitsu depicts the overall image of our environmental impacts using numbers, in order to engage in business activities with the environment in mind.

● Manageable scope of the Fujitsu Group ● Within the scope of the Fujitsu Group's impact

INPUT

A Raw Materials
B Energy, raw materials, water, chemical substances
C Energy
D Energy

I Used products — Reuse / Recycling

Suppliers → Transport → Fujitsu (Design ▶ Procurement ▶ Manufacturing / Development) → Transport → Customers

Collection

OUTPUT

E CO_2
F GHG, wastes, water, chemical substances
G CO_2
H CO_2

FY 2014 Key Performance

INPUT

A·B Design/Procurement/ Manufacturing/Development

Raw Materials

Metal	21 ktons
Plastic	11 ktons
Others	18 ktons

Chemical Substances*

VOCs	1.3 ktons
PRTR	10.0 ktons

Water

Water usage	16.60 Mm³

Energy

Total	18.78 PJ
Purchased electricity	1,714 GWh
Heavy oil, kerosene, etc.	9,228 kL
LPG, LNG	3,837 tons
Natural gas, city gas	30,66 Mm³
District heating and cooling	43 TJ

C | Distribution/Sales

Energy

Fuel (light oil, gasoline, etc.)	1.75 PJ

D | Usage

Energy

Electricity	9,345 GWh (91.86 PJ)

I | Collection/Reuse/Recycling

Resources recycling rate	94.3%
Amount processed	5,016 tons

OUTPUT

E·F Design/Procurement/ Manufacturing/Development

Raw Materials

CO_2 emissions	1170 ktons-CO_2

Chemical Substances*

VOCs	230 tons
PRTR	10 tons

Atmospheric Release

Total GHG emissions	897 ktons
CO_2	804 ktons-CO_2
GHG other than CO_2 (PFC, HFC, SF_6, others)	93 ktons
NOx	127 tons
SOx	112 tons

Water Discharge

Wastewater discharges	15.48 Mm³
BOD	349 tons
COD	192 tons

Waste

Amount of waste generated	22.3 ktons
Thermal recycling volume	4.7 ktons
Material recycling volume	16.1 ktons
Disposal volume	1.4 ktons

G | Distribution/Sales

Atmospheric Release

CO_2	120 ktons-CO_2

H | Usage

Atmospheric Release

CO_2	5180 ktons-CO_2

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

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GHG Emissions Report based on GHG Protocol Standards

Covered
Not covered
The Company's business is not applicable.

Materials purchase ▶ Transportation initiated by Fujitsu ▶ Production ▶ Value chain transportation ▶ Waste

Scope 3
Upstream

Purchased goods and services
Materials, components, etc.
2,415,000 tons

Capital goods
Building construction
9,000 tons

Fuel- and energy-related
Not included in Scopes 1 and 2
70,000 tons

Transportation and distribution (Upstream)
Product distribution, etc.
119,000 tons

Waste generated in operations
Industrial waste treatment, etc.
8,000 tons

Business travel
Use of public transportation
116,000 tons

Employee commuting
81,000 tons

Leased assets (Upstream)
Building use
129,000 tons

Scopes 1, 2
Reporting company

Scope 1
Direct emissions
Burning, etc. of fossil fuels
197,000 tons

Scope 2
Indirect emissions from energy sources
Use of purchased electricity
Use, etc. of purchased steam
700,000 tons

Scope 3
Downstream

Transportation and distribution (Downstream)
Not covered

Processing of sold products
Not covered

Use of sold products
Products' electricity consumption
5,177,000 tons

End-of-life treatment of sold products
PC recycling (and other)
1,000 tons

Leased assets (Downstream)
The Company's business is not applicable.

Franchises
The Company's business is not applicable.

Investment
The Company's business is not applicable.

Emissions (t-CO2e)

Scope 3 Upstream
2,947,000

Scope 3 Downstream
5,178,000

Scope 1 Direct emissions
197,000

Scope 2 Indirect emissions
700,000

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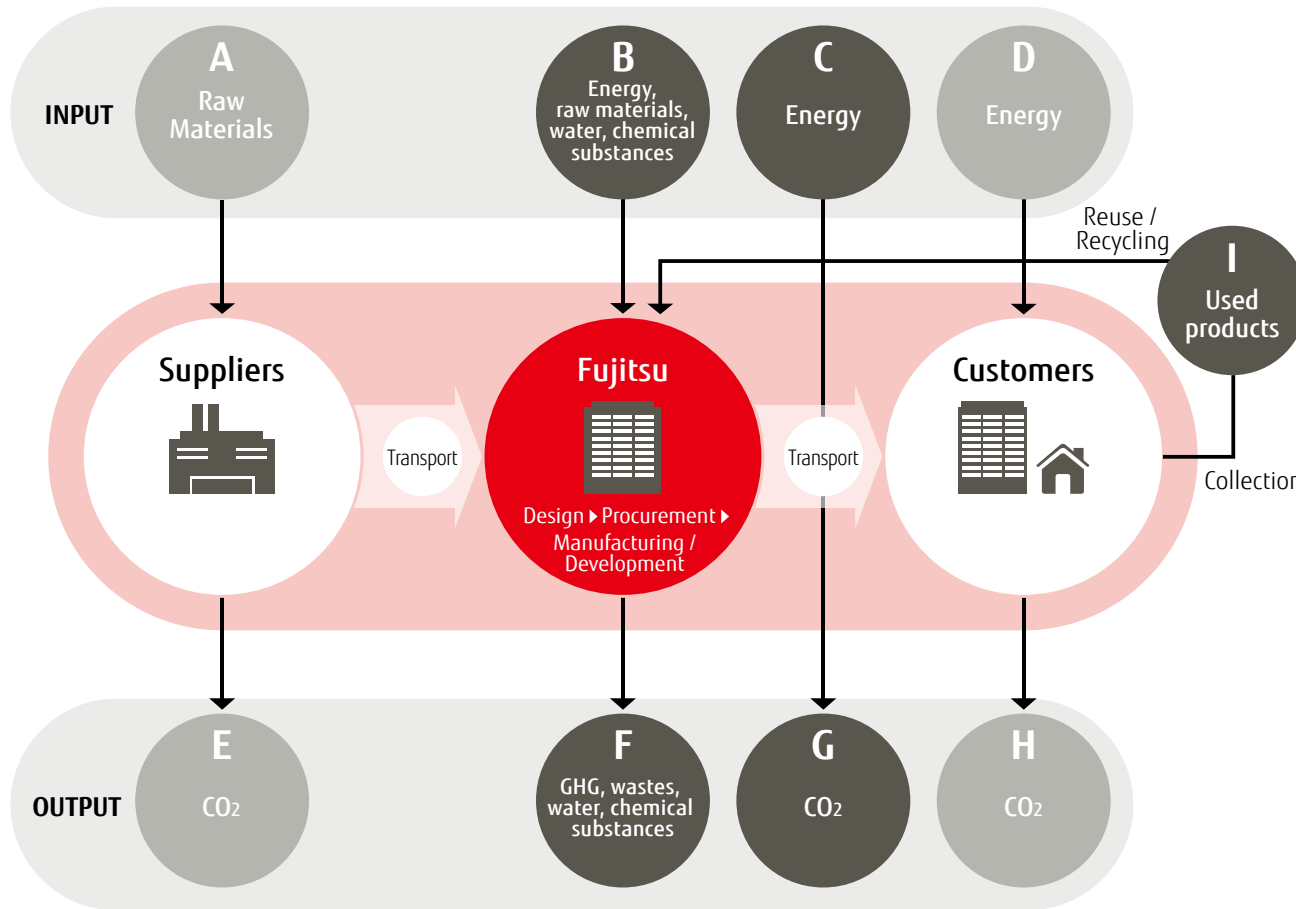
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Supplementary Data

Business Sites Where Soil or Groundwater Contamination Has Been Found

Site Name (Location)	Cleanup and Countermeasure status	Monitoring Well Maximum Value (mg/L) Substance	Measured Value	Regulated Level (mg/L)
Kawasaki Plant (Kawasaki City, Kanagawa Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	4.4	0.04
Oyama Plant (Oyama City, Tochigi Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	6.135	0.04
		Trichloroethylene	0.17	0.03
Nagano Plant (Nagano City, Nagano Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	0.06	0.04
Suzaka Plant (Suzaka City, Nagano Prefecture)	We have begun construction of an underground impervious wall and facilities for processing pumped water.	Polychlorinated biphenyl	0.0030	Must not be detected
Fujitsu Optical Components (Oyama City, Tochigi Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	0.133	0.04
		Trichloroethylene	0.263	0.03
FDK Sanyo plant (Sanyo-Onoda City, Yamaguchi Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Trichloroethylene	0.062	0.03
FDK Energy (Formerly the FDK Washizu Plant) (Kosai City, Shizuoka Prefecture)	We are continuing to clean up VOCs by pumping and aeration.	Cis-1, 2-dichloroethylene	0.25	0.04
		Trichloroethylene	0.27	0.03
		Tetrachloroethylene	0.03	0.01

Energy Use (Scope 1 and Scope 2)

Category	Energy use
Total	18.78 million GJ (395.10 J/100 million yen)
Scope 1	1.89 million GJ
Scope 2	16.89 million GJ

Response to Environmental Complaints (FY 2014)

Complaint	Cases	Response
Noise (noise pollution from machinery breakdown)	2	Implemented noise abatement measures; provided explanations to local residents.
Wastewater treatment	1	Conducted investigation with competent authorities to confirm absence of plant wastewater problems

Fujitsu Group Profile

Company Name: Fujitsu Limited

Addresses:
- Kawasaki Main Office
  4-1-1 Kamikodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8588, Japan
- Headquarters
  Shiodome City Center 1-5-2 Higashi-Shimbashi, Minato-ku, Tokyo 105-7123, Japan

President: Tatsuya Tanaka

Established: June 20, 1935

Main Business Activities:
Manufacture and sale of communications systems, information processing systems, electronic devices, and the provision of services related to those products
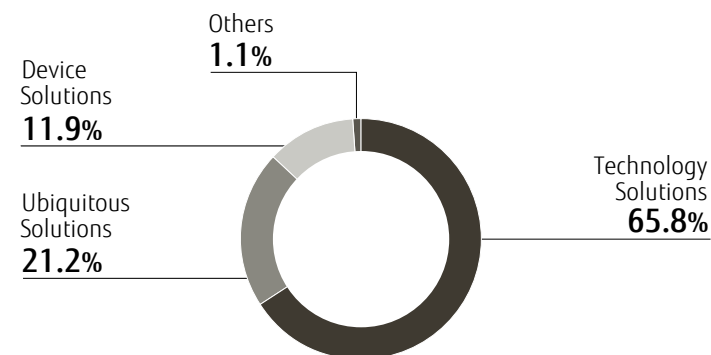
Capital: ¥324.6 billion

Net sales: ¥2,058.834 billion (Fujitsu only), ¥4,753.21 billion (consolidated)

Employees: 159,000 (as of March 31, 2015)

Directors: 12

FY 2014 Consolidated Net Sales by Business Segment

Others 1.1%
Device Solutions 11.9%
Ubiquitous Solutions 21.2%
Technology Solutions 65.8%

Fujitsu Group Environmental Report 2015

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Environmental Accounting/ Environmental Liabilities | Material Balance | GHG Emissions Report based on GHG Protocol Standards | Supplementary Data | **Environmental Performance Data Calculation Standards** | List of Organizations Covered by the Report on Environmental Activities | Third Party Verification | GRI Guidelines Reference Table

Environmental Performance Data Calculation Standards

Subject Period: April 1, 2014–March 31, 2015
Scope: Fujitsu and the Fujitsu Group (For details, refer to the List of Companies Covered by the Report on Environmental Activities.)

Chapter I Contribution to Society (Fujitsu Group Environmental Action Plan (Stage VII) "Contribution to Society")

Target Item	Indicator	Unit	Calculation Method
Contribute to reducing cumulative greenhouse gas emissions from customers and society by 38 million tons or more	Reduce greenhouse gas (GHG) emissions through the provision of ICT	Tons	Calculated by multiplying annual sales of each solution category by a conversion factor of CO_2e (carbon dioxide equivalent) savings per unit of sales, which is based on around 300 case studies of Environmentally Conscious Solutions in Japan.
Make 50% or more of new products top-level energy efficient	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 more than 25% of the market benchmark in energy efficiency, on a par with "top-runner" products (first in the world or industry, top of the world or industry).
Improve resource efficiency of new products to 35% or higher versus FY 2011.	Rate of improvement of resource efficiency of new products	%	The average rate of improvement of resource efficiency[1] (versus FY 2011) of products. [1] Hardware products, under the Fujitsu brand, newly developed in FY 2013–15. 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.
With society, support our employees to volunteer in social activities	Hours of social contribution activities by employees	Hours	Overall contribution hours = Σ participants[1] × activity hours [1] For events organized by the Fujitsu Group, participants also include employee families, stakeholders, etc.

Chapter II Pursuing Internal Reforms
(Fujitsu Group Environmental Action Plan (Stage VII) "Pursuing Internal Reforms" "On-going Management Targets")

Target Item	Indicator	Unit	Calculation Method
Reduce greenhouse gas emissions from business sites to 20% below, or lower than, FY 1990 levels.	GHG emissions	Tons CO_2	CO_2 emissions: Σ〔(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 sources including an energy and industrial process subcommittee report (related to fuel) issued under the auspices of an investigative committee on greenhouse gas emissions conversion calculation methods organized by the Japanese Ministry of the Environment in FY 2002. In FY 2002 and later, the conversion factor for electricity is 0.407 tons CO_2/MWh (fixed). The conversion factor for district heating and cooling is 0.061 tons CO_2/GJ. 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). Σ〔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) Third Assessment Report "Climate Change 2001."
	Percentage reduction in total greenhouse gas emissions	% reduction	(Total GHG emissions in FY 1990 – Total GHG emissions in the fiscal year) / Total GHG emissions in FY 1990 × 100

Target Item	Indicator	Unit	Calculation Method
Improve energy intensity at our business sites 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 × wt% proportion of overall energy usage〕 Target business sites: Japan (energy management plants specified under the Act on the Rational Use of Energy), UK and Australia offices
Reduce CO_2 emissions per sales from transport over 1% (on average) compared to FY 2013 .	CO_2 emissions per sales from transport	Tons/100 million yen	Transport CO_2 emissions/sales (100 million yen)
	Reduction rate of CO_2 emissions compared to FY 2013	% reduction	(FY 2013 transport CO_2 emissions per sales - FY 2014 transport CO_2 emissions per sales) / FY 2013 transport CO_2 emissions per sales × 100
Expand activities for reducing CO_2 emissions to business partners in all fields.	The proportion of business partners at or above stage 2 activities (the implementation of CO_2 reduction and minimization activities with numerical targets)	%	The proportion, with respect to all major business partners, of business partners implementing activities at or above stage 2
Increase generation capacity and procurement of renewable energy.	Adoption of solar power generation	kW	Total rated capacity of solar power generation facilities installed at business sites
	Amount of green power purchased	kWh	Among of green power purchased for exhibitions and events, such as the Fujitsu Forum, the Annual Shareholders' Meeting, etc.
Continue efforts for efficient use of water, e.g. water recycling and water saving.	Water usage	m^3	Annual use of clean water, industrial water, and groundwater (Not including groundwater extracted for purification or used 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
Reduce chemical emissions to less than the average level of FY 2009–2011. (PRTR: 21t, VOC: 258t)	Emissions of substances subject to VOC emissions restrictions	Tons	For the 20 VOCs (Volatile Organic Compounds) specified in the environmental voluntary action plans of four electrical and electronic business organizations[1], total amounts released are provided for those substances handled in quantities exceeding 100 kg annually at individual business sites.
	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 waste to less than the average level of FY 2007–2011. (Waste generated: 31,134 t)	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) × 100
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.

[1] **Four electrical and electronic business organizations:** 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)

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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 × Emissions value per unit of capital value (Source: Embodied Energy and Emission Intensity Data (3EID) published by the National Institute for Environmental Studies Center for Global Environmental Research)
	Fuel and energy – related activities 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 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 × 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 × 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 × 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 in Japan × Emissions per unit of fuel oil, gas, electricity, and heat consumed (Source: Act on Promotion of Global Warming Countermeasures - GHG Emissions Accounting, Reporting, and Disclosure System)
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) from business sites" in the Environmental Action Plan (Stage VII).
	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 (GHG emissions other than CO_2) at business sites" in the Environmental Action Plan (Stage VII).
Downstream (Scope 3)	Use of sold products	Tons	Electricity consumption during product use × Emissions per unit of electricity (Source: Daily averages for FY 2004–2008 from the Summary of Electrify Demand and Supply published by the Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy, Electricity and Gas Industry Department) 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 X Number of years used. Time used (h), number of days used per year, and number of years used are set according to Fujitsu's internal scenarios.
	End–of–life treatment of sold products	Tons	(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: Daily averages for FY 2009–2013 from the Summary of Electrify Demand and Supply published by the Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy, Electricity and Gas Industry Department)

Supplementary Data

Indicator	Unit	Calculation Method
Measured value of groundwater pollution	mg/L	The highest measurements 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.

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Operating Activities and Environmental Load (Material Balance)

Indicator			Unit	Calculation Method
INPUT				
Design Procurement Manufacturing Development	Raw Materials		Tons	Material inputs to our major products[1] shipped in the fiscal year (raw materials per unit for each product × the number of units 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 four electrical and electronic business organizations[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		m³	* For the calculation method, see "Water use" in the Environmental Action Plan (Stage VII).
	Energy consumption (calorie basis)		GJ	$\sum$((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): Based on sources including a table of standard heating values for specific energy sources published in February 2012 by the Agency for Natural Resources and Energy. Conversion factors of 9.83 GJ/MWh for electricity, and 46.1 GJ/1,000m³ for town gas 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	m³	Annual natural gas usage (or purchases)
		Town gas	m³	Annual town gas usage (or purchases)
		LPG	Tons	Annual LPG usage (or purchases)
		LNG	Tons	Annual LNG usage (or purchases)
		District heating and cooling	GJ	Annual district heating and cooling (cold and hot water for cooling and heating) usage (or purchases)
Distribution/ Sales	Energy consumed for transport		GJ	Total value of transport energy consumption for Fujitsu[1] and Fujitsu Group companies[2] [1] Fujitsu (domestic transport): Energy consumption related to domestic transport by the Fujitsu Group, based on the Act on the Rational Use of Energy "Logistics." [2] Fujitsu Group Companies: Calculated from the transport CO_2 emissions from OUTPUT (distribution and sales) using the ratio of Fujitsu (domestic transport) transport energy consumption to transport CO_2 emissions.
Usage	Energy	Electricity	GWh	Electricity consumed in connection with major products[1] shipped during the fiscal year (Amount of electricity used for time estimated per product unit × units shipped in the fiscal year)
			GJ	
Collection/Reuse/ Recycling	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 four electrical and electronic business organizations,[2] 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 VII).
		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 VII).
		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
	Water Discharge	Wastewater discharges	m³	Annual water discharges into public waterways and sewers (Not including groundwater used for melting snow)
		BOD emissions	Tons	BOD concentration (mg/l) × Water discharges (m³/yr) × 10⁻⁶
		COD emissions	Tons	COD concentration (mg/l) × Water discharges (m³/yr) × 10⁻⁶
	Waste	Amount of Waste Generated	Tons	* For the calculation method, see "Waste generated."
		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 FY2014. For the calculation method, see "Use of sold products" in the GHG Emissions Report based on GHG Protocol Standards.

[1] **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.

[2] **Four electrical and electronic business organizations:** 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 116 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:
- Scope 1, 2, 3: Organizations that are the subject of calculations used in the GHG Emissions Report based on GHG Protocol Standards (p. 55)
- Environmental burden: Organizations for which business site environmental burden data is calculated
- 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	Scope 1, 2, 3	Environmental burden	Logistics	Environmental Accounting	EMS
1	Fujitsu Limited	✓	✓	✓	✓	✓

Fujitsu Group companies in Japan (84 companies)

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

No.	Company name	Scope 1, 2, 3	Environmental burden	Logistics	Environmental Accounting	EMS
24	FUJITSU KAGOSHIMA INFORNET LIMITED	✓				✓
25	FUJITSU FIP CORPORATION	✓	✓			✓
26	NIFTY Corporation	✓				✓
27	G-Search Limited	✓				✓
28	FUJITSU FSAS INC.	✓		✓		✓
29	FUJITSU COMMUNICATION SERVICES LIMITED	✓				✓
30	FUJITSU NETWORK SOLUTIONS LIMITED	✓				✓
31	Fujitsu Frontech Limited	✓	✓	✓	✓	✓
32	FUJITSU SYSTEM INTEGRATION LABORATORIES LIMITED	✓				✓
33	FUJITSU TOKKI SYSTEMS LIMITED	✓				✓
34	FUJITSU DEFENSE SYSTEMS ENGINEERING LIMITED	✓				✓
35	Fujitsu Applications, Ltd.	✓				✓
36	FUJITSU LEARNING MEDIA LIMITED	✓				✓
37	FUJITSU RESEARCH INSTITUTE	✓				✓
38	FUJITSU Marketing LIMITED	✓		✓		✓
39	FUJITSU FOM LIMITED	✓		✓		✓
40	FUJITSU CoWorCo LIMITED	✓		✓		✓
41	TWO-ONE LIMITED	✓				✓
42	FUJITSU I-NETWORK SYSTEMS LIMITED	✓	✓	✓	✓	✓
43	ECOLITY SERVICE LIMITED	✓			✓	✓
44	FUJITSU ADVANCED ENGINEERING LIMITED	✓				✓
45	Fujitsu Software Technologies Limited	✓				✓
46	FUJITSU MIDDLEWARE LIMITED	✓				✓
47	Fujitsu Kyushu Network Technologies Limited	✓				✓
48	FUJITSU TELECOM NETWORKS LIMITED	✓	✓	✓	✓	✓
49	FUJITSU WIRELESS SYSTEMS LIMITED	✓	✓	✓	✓	✓
50	FUJITSU COMPUTER TECHNOLOGIES LIMITED	✓				✓
51	FUJITSU IT PRODUCTS LIMITED	✓	✓	✓	✓	✓
52	Fujitsu Isotec Limited	✓	✓	✓	✓	✓
53	FUJITSU PERIPHERALS LIMITED	✓	✓	✓	✓	✓
54	FUJITSU PERSONAL SYSTEM LIMITED	✓				✓
55	Shimane Fujitsu Limited	✓	✓	✓	✓	✓
56	FUJITSU KASEI LIMIED	✓	✓	✓	✓	✓
57	Fujitsu Integrated Microtechnologies Limited	✓	✓	✓	✓	✓

No.	Company name	Scope 1, 2, 3	Environmental burden	Logistics	Environmental Accounting	EMS
58	FUJITSU QUALITY LABORATORY LIMITED	✓				✓
59	Fujitsu Optical Components Limited	✓	✓	✓	✓	✓
60	FUJITSU KANSAI-CHUBU NET-TECH LIMITED	✓				✓
61	Fujitsu Mission Critical Software LTD.	✓				✓
62	FDK CORPORATION	✓	✓	✓	✓	✓
63	FUJITSU COMPONENT LIMITED	✓				✓
64	Transtron Inc.	✓		✓	✓	✓
65	FUJITSU ELECTRONICS INC.	✓		✓		✓
66	FUJITSU VLSI LIMITED	✓	✓			✓
67	Fujitsu Semiconductor IT Systems Ltd.	✓				✓
68	FUJITSU FACILITIES ENGINEERING LIMITED	✓				✓
69	FUJITSU SEMICONDUCTOR TECHNOLOGY INC.	✓	✓		✓	✓
70	SHINKO ELECTRIC INDUSTRIES CO. LTD.	✓	✓		✓	✓
71	FUJITSU TEN LIMITED	✓	✓	✓	✓	✓
72	FUJITSU TEN MANUFACTURING LIMITED	✓				✓
73	FUJITSU LABORATORIES LTD	✓	✓		✓	✓
74	FUJITSU SEMICONDUCTOR LIMITED	✓	✓	✓	✓	✓
75	Fujitsu Design Limited	✓				✓
76	Fujitsu Advanced Technologies Limited	✓				✓
77	FUJITSU MOBILE COMMUNICATIONS LIMITED	✓				✓
78	Fujitsu Systems West Limited	✓				✓
79	Fujitsu Systems East Limited	✓				✓
80	FUJITSU CAPITAL LIMITED	✓				✓
81	MIE FUJITSU SEMICONDUCTOR LIMITED	✓	✓		✓	✓
82	Aizu Fujitsu Semiconductor Limited	✓	✓			✓
83	Aizu Fujitsu Semiconductor Wafer Solution Limited	✓	✓		✓	✓
84	Aizu Fujitsu Semiconductor Manufacturing Limited	✓	✓		✓	✓

Fujitsu Group companies worldwide (31 companies)

No.	Company name	Scope 1, 2, 3	Environmental burden	Logistics	Environmental Accounting	EMS
1	FUJITSU COMPUTER PRODUCTS OF VIETNAM	✓	✓		✓	✓
2	Jiangsu Fujitsu Telecommunications Technology Co., Ltd.					✓

No.	Company name	Scope 1, 2, 3	Environmental burden	Logistics	Environmental Accounting	EMS
3	Fujitsu Semiconductor Pacific Asia Limited					✓
4	Fujitsu Semiconductor (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 Systems Business (Thailand) Ltd.					✓
11	Fujitsu PC Asia Pacific Pte Ltd.	✓			✓	✓
12	FUJITSU AUSTRALIA LTD.	✓			✓	✓
13	Fujitsu Technology Solutions	✓	✓		✓	✓
14	Fujitsu Semiconductor Europe GmbH					✓
15	Nanjing Fujitsu Nanda Software Technology Co., Ltd.					✓
16	FUJITSU SERVICES HOLDINGS PLC	✓			✓	✓
17	FUJITSU KOREA LTD.					✓
18	FUJITSU TAIWAN LIMITED					✓
19	Fujitsu Telecomunication Asia Sdn. Bhd.					✓
20	FUJITSU (CHINA) HOLDINGS CO., LTD.					✓
21	Fujitsu Management Services of America, Inc.					✓
22	FUJITSU (XI'AN) SYSTEM ENGINEERING CO., LTD.					✓
23	Beijing Fujitsu System Engineering Co., LTD.					✓
24	GLOVIA International, Inc.					✓
25	FUJITSU AUSTRALIA SOFTWARE TECHNOLOGY PTY. LTD.					✓
26	FUJITSU Enabling Software Technology GmbH					✓
27	Fujitsu Semiconductor America, Inc.					✓
28	Fujitsu Semiconductor Korea Limited					✓
29	Fujitsu Research and Development Center Co., LTD.					✓
30	Fujitsu Computer Products of America	✓		✓		✓
31	Fujitsu Frontec North America	✓		✓		✓

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Third Party Verification

In order to ensure the reliability of the content of the Fujitsu Group Environmental Report 2015 and the Fujitsu Group CSR Report 2015, we ask a third party, Bureau Veritas Japan, to examine and post a review of the reports.

GREENHOUSE GAS EMISSIONS VERIFICATION STATEMENT

To: Fujitsu Limited

June 30, 2015

Bureau Veritas Japan Co., Ltd.
System Certification Services Headquarters

Bureau Veritas Japan Co., Ltd. (Bureau Veritas) was engaged by Fujitsu Limited (Fujitsu) to conduct independent verification of the greenhouse gas (GHG) emissions reported in the Fujitsu Group Environmental Report 2015 for FY2014.

1. Scope of Verification
Fujitsu requested Bureau Veritas to verify, to a limited level of assurance, the accuracy of the following GHG information:

1) Scope 1 and Scope 2 emissions:
·CO_2 emissions from energy use through business operations of Fujitsu, Fujitsu Group's 27 companies within Japan and three companies outside Japan for the period of April 1, 2014 through March 31, 2015
·HFCs, PFCs, SF_6 and NF_3 emissions through business operations of Fujitsu Group's four semiconductor manufacturing sites within Japan for the period of April 1, 2014 through March 31, 2015

2) Category 4 of Scope 3 emissions accounted and reported in line with the GHG Protocol's 'Corporate Value Chain (Scope 3) Accounting and Reporting Standard':
·CO_2 emissions from distribution activities outsourced by Fujitsu and Fujitsu Group's 25 companies within Japan to third parties for the period of April 1, 2014 through March 31, 2015

2. Methodology
Bureau Veritas conducted the verification in accordance with the requirements of the international standard 'ISO 14064-3(2006): Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions'.

As part of Bureau Veritas' assurance, the following activities were undertaken:
·Interviews with relevant personnel of Fujitsu responsible for the identification and calculation of GHG emissions;
·Review of Fujitsu's information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
·Audit of a sample of source data to check accuracy of quantified GHG emissions.

3. Conclusion
Based on the verification work and processes followed, there is no evidence to suggest that the GHG emissions assertions shown below:
·are not materially correct and are not a fair representation of the GHG emissions, as per the scope of work;
·are not prepared in accordance with the methodology for calculating GHG emissions established and implemented by Fujitsu.

Verified greenhouse gas emissions		
Scope 1 197,000 t-CO_2e	Scope 2 700,000 t-CO_2e	Scope 3 (Category 4) 48,000 t-CO_2e

【Statement of independence, impartiality and competence】
Bureau Veritas is an independent professional services company that specializes in Quality, Health, Safety, Social and Environmental management with over 180 years history in providing independent assurance services. No member of the verification team has a business relationship with Fujitsu, its Directors or Managers beyond that required of this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest. Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities. The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes.

Fujitsu Group CSR Report 2015
Fujitsu Group Environmental Report 2015
Independent Verification Report

To: Fujitsu Limited

July 17, 2015

Bureau Veritas Japan Co., Ltd.
System Certification Services Headquarters

Bureau Veritas Japan Co., Ltd. (Bureau Veritas) has been engaged by Fujitsu Limited (Fujitsu) to conduct an independent verification and review of its sustainability performance indicators selected by Fujitsu for inclusion in the Fujitsu Group CSR Report 2015 and the Fujitsu Group Environmental Report 2015 (the Reports) issued under the responsibility of Fujitsu.
The aim of the verification is to evaluate and to provide an opinion, in the form of an independent statement, on the reliability and accuracy of selected sustainability performance indicators within the Reports based on objective evidence and to a limited level of assurance. The aim of the review work is to evaluate the quality of certain other sustainability performance indicators within the Reports in the interests of reporting improvement.

1. Outline of verification and review
Verification and review of social and environmental performance indicators related to business operations in FY2014

Data verified or reviewed	Site Visited	Verification or Review Methodology
All indicators listed in Annex 1: 'The list of social performance indicators verified'	- Fujitsu Headquarters - Fujitsu Kawasaki Main Office	- Review of documentary evidence produced by Fujitsu Headquarters - Interviews with relevant personnel of Fujitsu Headquarters and Fujitsu Kawasaki Main Office - Comparison between the reported data and the supporting documentary evidence
All indicators listed on Annex 2: 'The list of environmental performance indicators verified and reviewed'	- Fujitsu Kawasaki Main Office - Fujitsu Kawasaki Plant - FUJITSU TEN LIMITED Headquarters - FUJITSU TELECOM NETWORKS LIMITED Sekijo Plant - Fujitsu Network Communications Inc.	- Review of documentary evidence produced by Fujitsu Headquarters and the sites visited - Interviews with relevant personnel of Fujitsu Kawasaki Main Office and the sites visited - Site inspection and assessment of data monitoring process - Comparison between the reported data and the supporting documentary evidence

The verification was conducted using Bureau Veritas' standard procedures and guidelines for external verification of non-financial reporting, based on current best practice. Bureau Veritas refers to the International Standard on Assurance Engagements (ISAE) 3000 in providing a limited assurance for the scope of work stated herein.

2. Findings
Verification and review of social and environmental performance indicators related to business operations in FY2014:
On the basis of our methodology and the activities described above, nothing has come to our attention to indicate that the performance indicators are not materially correct and are not reported in accordance with the criteria established and implemented by Fujitsu.

Bureau Veritas has implemented a code of ethics across its business which is intended to ensure that all our staff maintain high standards in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. Bureau Veritas activities for Fujitsu are for sustainability reporting verification only and we believe our verification assignment did not raise any conflicts of interest.

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Annex 1

The list of social performance indicators verified

Performance indicators verified	Page
Number of attendees to Female Leadership Development Program	14
Number of holding Career Formation Support Seminar for female employees	14
Rate of woman managers	14·50·73
Employment rate of people with disabilities	14·52·73
Number of employees using the care leave support system	15·61·74
Foster global business leaders Number of attendees to Next-generation business leaders development programs	15
The number of periodic dialogue with residents in regions with major business sites	16
The number of internal database records of social contribution activities	17
CSR activities with use of ISO26000 Number of group companies which performed survey based on ISO26000	20
Number of Directors	27·109
Frequency of industrial accidents	66·74
Numbers and average ages of employees	73·111
Hiring of recent college graduates	74
Employees by region	73·110
Average years of service	74
Promoting socially responsible procurement (the number of written surveys to suppliers)	90

Annex 2

The list of environmental performance indicators verified and reviewed

Performance indicators verified		Page
Rate of newly developed products that are top-level energy efficient		22
Improvement rate of resource efficiency in newly developed products		24
Amount of greenhouse gas emissions in our business facilities		31
Improving rate of energy intensity in our business facilities		31
CO$_2$ emission from transport (Fujitsu and group companies in Japan)		35
Water usage		39
PRTR Substance and VOC Emissions		40
Amount of waste generated		41
Effective utilization ratio		41
Resource reuse rate of business ICT equipment		43
INPUT (design, procurement, manufacturing, development)	Water	54
	Energy	
INPUT (recycling)	Resource recycling rate	
	Chemical substances	
OUTPUT (design, procurement, manufacturing, development)	Atmospheric release Greenhouse gases total	
	Atmospheric release CO$_2$	
	Atmospheric release Greenhouse gases other than CO$_2$	
	Volume of waste generated	
	Volume of thermal and material recycling	
	Volume of waste disposal	
OUTPUT (distribution) Atmospheric release CO$_2$ (Fujitsu and group companies in Japan)		
Scope3 (upstream) Transportation and distribution (Fujitsu and group companies in Japan)		
Scope1 (reporting company) Direct emissions		55
Scope2 (reporting company) Indirect emissions from energy sources		
Energy usage in Scope1 and Scope2		56

Performance indicators reviewed		Page
Amount of contribution to reducing emissions of greenhouse gases (GHG) through the provision of ICT		19
Percentage of reduced CO$_2$ emission per sales from transport		35
CO$_2$ emission from transport (group companies in worldwide)		35
Environmental accounting		53
INPUT (design, procurement, manufacturing, development)	Chemical substances	54
INPUT (distribution) Energy		
OUTPUT (distribution) Atmospheric release CO$_2$ (group companies in worldwide)		
Scope3 (upstream) Transportation and distribution (group companies in worldwide)		55
Scope3 (upstream) Purchased goods and services		
Scope3 (downstream) Use of sold products		

GRI Guidelines Reference Table (G4)

General Standard Disclosures

Indicator		Relevant page / topic	
Strategy and Analysis			
G4-1	Statement from the most senior decision-maker	4	Top Message
G4-2	Key impacts, risks, and opportunities	5	Interview
		48	Initiatives to Minimize Environmental Risk
Organizational Profile			
G4-3	Name of the organization	56	Fujitsu Group Profile
G4-4	Primary brands, products, and services	56	Fujitsu Group Profile
G4-5	Location of the organization's headquarters	56	Fujitsu Group Profile
G4-6	Number, and names, of countries where the organization operates	60	List of Organizations Covered by the Report on Environmental Activities
G4-7	Nature of ownership and legal form	—	
G4-8	Markets served	—	
G4-9	Scale of the organization: employees, operations, net sales	56	Fujitsu Group Profile
G4-10	Number of employees by employment contract and gender	—	
G4-11	Percentage of employees covered by collective bargaining agreements	—	
G4-12	Organization's supply chain	—	
G4-13	Significant organizational changes during the reporting period	2	Significant Changes in Coverage
Commitments to External Initiatives			
G4-14	The precautionary approach or principle addressed by the organization	48	Initiatives to Minimize Environmental Risk
G4-15	Initiatives which the organization endorses	51	Tie-ups with External Organizations in order to Spread Green ICT and a Sustainable Society
G4-16	Membership in external associations	47	Acquiring Information on Chemical Substances Contained in Products
		51	Tie-ups with External Organizations in order to Spread Green ICT and a Sustainable Society
Identified Material Aspects and Boundaries			
G4-17	List of entities included in the organization	—	
G4-18	Process for defining the report content and the aspect boundaries	2	Editorial Policy
G4-19	List of specified material aspects	5	Interview
		17	Fujitsu Group Environmental Action Plan Stage VII

Indicator		Relevant page / topic	
G4-20	Aspect boundary for each material aspect (within the organization)	54	Material Balance
		57	Environmental Performance Data Calculation Standards
		60	List of Organizations Covered by the Report on Environmental Activities
G4-21	Aspect boundary for each material aspect (outside the organization)	—	
G4-22	Reasons for any restatements of information provided in previous reports	19	GHG Emission Reduction through the Provision of ICT
		35	Reduce CO_2 Emissions from Logistics and Transportation
G4-23	Changes to scope and aspect boundaries	2	Significant Changes in Coverage
Stakeholder Engagement			
G4-24	List of stakeholder groups engaged by the organization	51	Tie-ups with External Organizations in order to Spread Green ICT and a Sustainable Society
G4-25	Basis for identification and selection of stakeholders	50	Environmental Dialogues with Experts
G4-26	Engagement frequency and numerical totals	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
		49	In-House Environmental Educational and Enlightenment Activities
		50	Environmental Dialogues with Experts
G4-27	Key topics and concerns raised through stakeholder engagement	50	Environmental Dialogues with Experts
Report Profile			
G4-28	Reporting period	2	Reporting Period
G4-29	Date of most recent previous report	2	Published
G4-30	Reporting cycle	2	Published
G4-31	Contact point for questions regarding the report	2	Editorial Policy
GRI Content Index			
G4-32	The 'in accordance' option the organization has chosen	—	
Assurance			
G4-33	Policy and practice regarding external assurance for the report	62	Third Party Inspection
Governance			
*G4-51 to G4-55 do not apply.			
G4-34	Governance structure	45	Environmental Management
G4-35	Process for delegating authority for economic, environmental and social topics	45	Environmental Management

Indicator		Relevant page / topic	
G4-36	Appointees with responsibility for reporting economic, environmental and social topics	45	Environmental Management
G4-37	Processes for consultation between stakeholders and the highest governance body	45	Environmental Management
G4-38	Composition of the highest governance body	45	Environmental Management
G4-39	Whether the Chair of the highest governance body is also an executive officer	45	Environmental Management
G4-40	Nomination and selection processes	—	
G4-41	Processes for avoiding conflicts of interest	—	
G4-42	Roles in the development of purpose, policies, and strategies	45	Environmental Management
G4-43	Enhancing knowledge of economic, environmental and social topics	—	
G4-44	Evaluation with respect to governance of economic, environmental and social topics	45	Environmental Management
G4-45	Identification of economic, environmental and social impacts, risks, and opportunities	45	Environmental Management
G4-46	Roles in risk management processes for economic, environmental and social topics	45	Environmental Management
G4-47	Review of economic, environmental and social impacts, risks, and opportunities	45	Environmental Management
G4-48	Highest committee or position that approves the report	—	
G4-49	Process for communicating critical concerns	45	Environmental Management
G4-50	Nature and number of critical concerns that were communicated	—	

Ethics and Integrity

*G4-56 to G4-58 do not apply.

Specific Standard Disclosures: Economic

*G4-EC3 to G4-EC6, G4-EC9 do not apply.

Indicator		Relevant page / topic	
Aspect: Economic Performance			
G4-EC1	Direct economic value generated and distributed	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	48 53	Initiatives to Minimize Environmental Risk Environmental Accounting

Indicator		Relevant page / topic	
Aspect: Indirect Economic Impacts			
G4-EC7	Development and impact of infrastructure investments and services supported	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
G4-EC8	Significant indirect economic impacts, including the extent of impacts	5 48 53	Interview Initiatives to Minimize Environmental Risk Environmental Accounting

Specific Standard Disclosures: Environmental

Indicator		Relevant page / topic	
Aspect: Materials			
EN1	Materials used by weight or volume	54	Material Balance
EN2	Percentage of materials used that are recycled input materials	—	
Aspect: Energy			
EN3	Energy consumption within the organization	54	Material Balance
EN4	Energy consumption outside of the organization	54	Material Balance
EN5	Energy intensity	56	Energy Usage（Scope 1 and Scope 2）
EN6	Reduction of energy consumption	31	Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites
		33	Promoting Environmentally Conscious Datacenters
		35	Reduce CO_2 Emissions from Logistics and Transportation
		37	Promoting CO_2 Emission Reductions with Our Business Partners
EN7	Reductions in energy requirements of products and services	22	Development of Top-Level Energy Efficient Products
Aspect: Water			
EN8	Total water withdrawal by source	—	
EN9	Water sources significantly affected by withdrawal of water	—	
EN10	Percentage and total volume of water recycled and reused	39	Efficient Use of Water Resources
Aspect: Biodiversity			
EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	—	

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Indicator		Relevant page / topic	
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
EN13	Habitats protected or restored	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
EN14	Total number of iucn red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	—	

Aspect: Emissions

EN15	Direct greenhouse gas (GHG) emissions (scope 1)	55	GHG Emissions Report based on GHG Protocol Standards
EN16	Energy indirect greenhouse gas (GHG) emissions (scope 2)	55	GHG Emissions Report based on GHG Protocol Standards
EN17	Other indirect greenhouse gas (GHG) emissions (scope 3)	55	GHG Emissions Report based on GHG Protocol Standards
EN18	Greenhouse gas (GHG) emissions intensity	31	Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites
EN19	Reduction of greenhouse gas (GHG) emissions	31	Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites
EN20	Emissions of ozone-depleting substances (ODS)	—	
EN21	NOx, SOx, and other significant air emissions	54	Material Balance

Aspect: Effluents and Waste

EN22	Total water discharge by quality and destination	54	Material Balance
EN23	Total weight of waste by type and disposal method	41 / 54	Limiting Amounts of Waste Generated / Material Balance
EN24	Total number and volume of significant spills	—	
EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	—	
EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	—	

Aspect: Products and Services

EN27	Extent of impact mitigation of environmental impacts of products and services	22 / 24	Development of Top-Level Energy Efficient Products / Improving the resource efficiency of products

Indicator		Relevant page / topic	
EN28	Percentage of products sold and their packaging materials that are reclaimed by category	43 / 54	Product Recycling / Material Balance

Aspect: Compliance

EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	46	Status of Environmental Compliance

Aspect: Transport

EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	35 / 54	Reduce CO$_2$ Emissions from Logistics and Transportation / Material Balance

Aspect: Overall

EN31	Total environmental protection expenditures and investments by type	53	Environmental Accounting / Environmental Liabilities

Aspect: Supplier Environmental Assessment

EN32	Percentage of new suppliers that were screened using environmental criteria	—	
EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	—	

Aspect: Environmental Grievance Mechanisms

EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	56	Response to Environmental Complaints (FY 2014)

Specific Standard Disclosures: Environmental
*Labor Practices and Decent Work, Human Rights ,Product Responsibility do not apply.

Indicator		Relevant page / topic	
Society			

*G4-SO3 to G4-SO11 do not apply.

G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	28	Collaborating with Communities and Taking Action as a Good Corporate Citizen
G4-SO2	Operations with significant actual and potential negative impacts on local communities	48 / 56	Preventing Pollution of Soil and Groundwater / Business Sites Where Soil or Groundwater Contamination Has Been Found