Environmental Performance Data Calculation Standards

■Subject Period： April 1, 2012 – March 31, 2013
■Scope ： Fujitsu and Fujitsu Group (For details, refer to the List of Companies Covered by the Report on Environmental Activities (123 companies).)

Operating Activities and Environmental Load (FY2012)

Indicator			Unit	Calculation Method
INPUT				
Development & Design/ Planning & Design Procurement Manufacturing Development	Raw Materials		Tons	Material inputs to our major products*1 shipped in FY 2012 (raw materials per unit for each product × the number of units shipped in FY 2012)
	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 (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]), total amounts handled are provided for those substances handled in quantities exceeding 100kg annually at individual business 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 100kg annually per business site.
	Water use		1,000 ㎥	Annual use of clean water, industrial water, and groundwater (Not including groundwater for melting snow and groundwater extracted for purification)
	Energy consumption (calorie basis)		10,000 GJ	∑〔（Electricity, fuel oil, gas, and district heating and cooling annual usage）× Thermal conversion factor for each type of energy*1 〕 *1 Thermal conversion factor (Heating value unit): 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 46.1GJ/1,000 ㎥ for town gas were used.
		Purchased electricity	MWh	Annual electricity usage
		Bunker A, fuel oil, light oil, benzin, gasoline	Kl	Annual fuel oil usage (or purchases)
		Natural gas	1,000 ㎥	Annual natural gas usage (or purchases)
		Town gas	1,000 ㎥	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 consumption for transportation of goods in Japan		10,000 GJ	Energy consumption related to transportation of goods by the Fujitsu Group within Japan as a part of logistics activities defined under the Act on the Rational Use of Energy (the Energy Conservation Law)
Usage	Energy	Electricity	MWh 10,000 GJ	Electricity consumed in connection with major products*1 shipped during FY 2012 (Amount of electricity used for time estimated per product unit ×units shipped in FY 2012)

Collection / Reuse / Recycling Operation and Maintenance	Resource recycling rate		%	Based on the calculation method provided by the 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	
OUTPT				
Development & Design/ Planning & Design Procurement Manufacturing Development	Raw Materials	CO_2 emissions	Tons	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 FY 2012) for the raw materials used in major products*1 shipped in FY 2012.
	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 (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]), total amounts released are provided for those substances handled in quantities exceeding 100kg annually at individual business 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 100kg annually per business site.
	Atmospheric Release	CO_2 emissions	10,000 tons	∑〔 (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: In FY 2002 and later, the conversion factor for electricity is 0.407 tons CO_2/MWh (fixed), 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. The conversion factor for district heating and cooling is 0.061 tons CO_2/GJ.
		GHG emissions other than CO_2	10,000 tons CO_2	Annual emissions of HFCs, PFCs, and sulfur hexafluoride by four semiconductor plants (Fujitsu Semiconductor Limited's Iwate, Aizuwakamatsu, Mie Plants, and a plant owned by Fujitsu Semiconductor Technology, Inc.) ∑〔 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."
		NOx emissions	Tons	NOx concentration (ppm) ×10^{-6}× Dry gas emissions (m^3N/hr) × Operating time (hr/yr) ×46/22.4×10^{-3}
		SOx emissions	Tons	SOx concentration (ppm) ×10^{-6}× Dry gas emissions (m^3N/hr) × Operating time (hr/yr) ×64/22.4×10^{-3}

	Water Discharge	Wastewater discharges	1,000 ㎥	Annual water discharges into public waterways and sewers (Not including groundwater used for melting snow)
		BOD emissions	Tons	BOD concentration （mg/l）× Water discharges（㎥/yr）×10^{-6}
		COD emissions	Tons	COD concentration（mg/l）× Water discharges（㎥/yr）×10^{-6}
	Waste	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）
		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	CO_2 emission s from domestic transport		1,000 tons CO_2	CO_2 emissions related to transportation of goods by the Fujitsu Group within Japan as a part of logistics activities defined under the Act on the Rational Use of Energy (the Energy Conservation Law). Fuel economy method (for some vehicles) and the improved ton-kilometer method (road vehicles, rail, air, ocean transport).
Usage	Atmospheric Release		Tons CO_2	Electricity consumption by major products*1 shipped in FY 2012 (Electricity consumed for the assumed hours of use per product x Number of units shipped in FY 2012)

*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.

Green ICT Achievements in Reducing CO_2 Emissions

Indicator	Unit	Calculation Method
ICT infrastructure	10,000 tons	For total products shipped, the difference between new and prior platform products in terms of CO_2 emitted for a level of functionality similar to that of FY 2008 products (Using eco-efficiency factors in Fujitsu has worked to improve with FY 2012 as its target year.)
ICT solutions	10,000 tons	CO_2 emissions before and after adoption of environmental solutions and data center outsourcing services by customers, calculated using sales figures and CO_2 conversion factors. Cumulative results for FY 2009 through FY 2012.

Efforts to Prevent Global Warming and initiatives of reducing CO2 emisions

Indicator			Unit	Calculation Method
Percentage reduction in total greenhouse gas emissions			%reduction	(Total GHG emissions in FY 1990 – Total GHG emissions in FY 2012) / Total GHG emissions in FY 1990 × 100
Adoption of solar power generation			kW	Total rated capacity of solar power generation facilities installed at business sites
Usage based on the Revised Act on the Rational Use of Energy			10,000 kl	Usage of electricity, fuel, etc. in terms of crude oil equivalents, based on the Act on the Rational Use of Energy (the Energy Conservation Law)
GHG Emissions Report based on GHG Protocol Standards	Upstream (Scope3)	Purchased goods and services	Tons	Components purchased during the fiscal year × Emissions per unit of purchases (Source: Embodied Energy and Emission Intensity Data (3EID) published by the National Institute for Environmental Studies Center for Global Environmental Research)
		Capital goods	Tons	Monetary value of capital X Emissions value per unit of capital value (Source: 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)
		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)
		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 information on calculation methods, refer to the items on OUTPUT Atmospheric Release "CO_2 emissions" and "GHG emissions other than CO_2".
		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 information on calculation methods, refer to the item on OUTPUT Atmospheric Release "CO_2 emissions".
	Downstream (Scope 3)	Transportation and distribution (Downstream)	Tons	Transportation of goods within Japan: CO_2 emissions related to the transportation of goods within Japan by the Fujitsu Group. * For information on calculation methods, refer to the item on "CO_2 emissions from domestic transport".

				International Transportation of Goods: Cargo ton-kilometers of international transportation of goods to or from Japan; or, fuel consumption of transportation mode × Ton-kilometers (road vehicles, rail, air, ocean transport); or, emissions coefficient per unit of fuel consumption (road vehicles) (Source: Calculation Guidelines for Logistics Sector CO2 Emissions published by the Ministry of Economy, Trade and Industry and Ministry of Land, Infrastructure, Transport and Tourism in connection with the Act on the Rational Use of Energy; and the GHG Protocol Emissions Coefficient Database GHG)
		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) X Time used (h) / Days X Number of days used / Year X Number of years used. Time used (h), number of days used per year, and number of years used are set according to Fujitsu's internal scenarios.
		End-of-life treatment of sold products	Tons	(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: Electric Power Enterprise (FY 2002 average for 10 electric power companies in Japan, receiving end)
% Reduction in CO_2 emissions from domestic transport			% reduction	(FY 2008 CO_2 emissions from transportation of goods inside Japan - FY 2012 CO_2 emissions from transportation of goods inside Japan) / FY 2008 CO_2 emissions from transportation of goods inside Japan × 100

Environmental Activities in Factories

Indicator		Unit	Calculation Method
Indicators Related to Waste	% Reduction in the amount of waste generated	% reduction	(Amount of waste generated in FY 2007– Amount of waste generated in FY 2012) / Amount of waste generated in FY 2007 × 100
	Effective utilization ratio (Japan only)	%	(Amount of effective utilization(Thermal recycling volume and Material recycling volume) / Amount of Waste generated) × 100
Indicators Related to Water-Resources	Amount of recycled water	1,000 ㎥	Annual amount of water used for manufacturing and other purposes, then recovered, processed, and used again for manufacturing and other processes
Indicators Related to Chemical Substances	Emissions of specific chemical substances	Tons	Of the substances subject to VOC emission controls and PRTR-targeted substances handled in amounts exceeding 100kg annually at individual Japanese business sites included in the FY 2007 data collection scope, total emissions of 1 of the top 3 emitted chemical substances for the baseline year (FY 2007)
	% reduction in specific chemical substance emissions	% reduction	(Specific chemical substance emissions in FY 2007 – specific chemical substance emissions in FY 2012) / specific chemical substance emissions in FY 2007 × 100

Cost for Environmental liabilities	100 million 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)
Measured value of Groundwater pollution	mg/l	The highest FY 2012 measurements 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.