

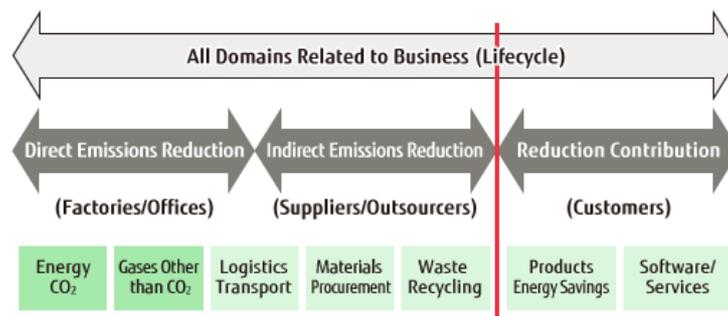
## Efforts to Prevent Global Warming

We are examining all of our business operations in an effort to reduce greenhouse gas emissions--not only factories and offices but also transportation and the products and services we provide.

### Basic Approach

We are working to reduce emissions of greenhouse gases associated with all our Group business activities. These actions include reducing emissions of CO<sub>2</sub> due to energy consumption and other greenhouse gases at our factories and offices, and reducing emissions associated with transportation.

Furthermore, we are working to prevent global warming throughout all areas of business activity by helping to cut greenhouse gas emissions from our customers and society in general by developing Green Products and Super Green Products that contribute to reducing environmental burdens and by providing ICT solutions.



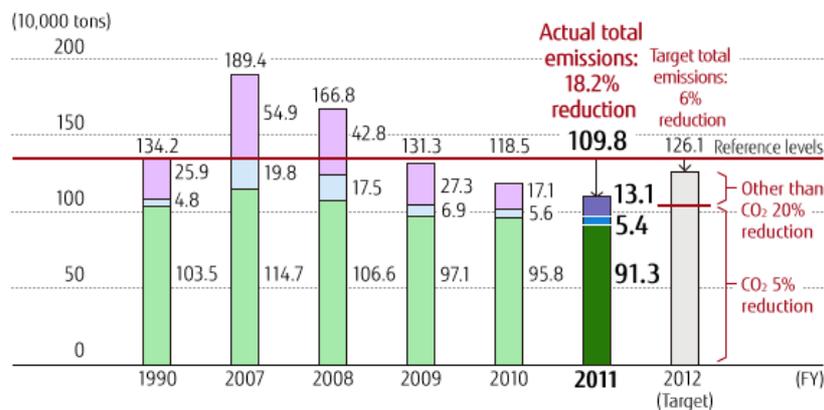
### Preventing Global Warming from the Business Site

#### Greenhouse Gas Emission Reduction Targets and Results

We have set "reducing our total greenhouse gas emissions by 6% by the end of FY 2012 compared with FY 1990 (the breakdown for total emissions is a 5% reduction in CO<sub>2</sub> due to energy consumption and a 20% reduction in gases other than CO<sub>2</sub>)" as a goal of the Fujitsu Group Environmental Protection Program (Stage VI).

Our actual total emissions for FY 2011 globally were about 1.098 million tons (per unit of actual sales: 2.458 tons/billion yen), which is a 7.3% or 87 thousand tons reduction from the previous fiscal year, and an 18.2% reduction from FY 1990.

#### Trends in Total Greenhouse Gas Emissions



■ CO<sub>2</sub> emissions in Japan\*1 ■ CO<sub>2</sub> emissions outside Japan\*1 ■ Emissions other than CO<sub>2</sub>\*2

\*1 CO<sub>2</sub> emissions in/outside Japan: CO<sub>2</sub> conversion coefficient for purchased electric power has been calculated with a fixed value of 0.407 ton of CO<sub>2</sub> per MWh since FY 2002 for performance reports in our Environmental Protection Program.

\*2 Emissions other than CO<sub>2</sub>: These are converted to equivalent amounts of CO<sub>2</sub> using the global warming potential (GWP) of each gas. Our FY 1995 performance is taken to be the emissions in FY 1990.

## Reduction of CO2 Emissions due to Energy Consumption

CO2 emissions due to energy consumption are responsible for about 88% of the Fujitsu Group's greenhouse gas emissions. Therefore, we continuously work to improve the following energy-saving measures to reduce CO2 emissions.

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

Further, we set up Low Carbon Committee at the corporate level in September 2008, establishing reduction targets for each business unit. Stronger measures to achieve these targets follow reforms to processes and equipment (in mounting, assembly and testing) and the development of new technologies. Moreover, our Capital Investment Guidelines define the economic and environmental criteria for investment as we identify and urgently implement priority measures.

As a result, our actual energy-consumption CO2 emissions for FY 2011 were about 967 thousand tons (913 thousand tons in Japan, 54 thousand tons outside Japan), which corresponds to a 46 thousand ton reduction from the previous fiscal year and a 10.7% reduction from FY 1990.

### Case Study

#### Reducing Air Conditioning Load with Total Heat Exchangers for Clean Room Air

Fujitsu Facilities Ltd. renovated its Building No. 7 in conjunction with relocation of the Nagano Plant of Fujitsu Advanced Technologies Ltd. The renovation included installing total heat exchangers for processing clean room outside air. The project was started immediately after the Great East Japan Earthquake of March 2011, and the system was built with power shortages taken into account from the implementation design stage. The system reduces the air conditioning load. In addition, the total heat exchangers are equipped with humidification functionality for stability from a humidity control standpoint as well.

As a result of this initiative, power use was reduced by 17,000 kWh during the summer (from June to September) and steam was reduced by 55 tons in the winter (December to March) and in the interim periods (April, May, October, and November). This translates to an annual reduction in CO2 emissions of 16 tons.

- [Reducing Greenhouse Gas Emissions Associated with Manufacturing : Case Study Archives](#)

## Reducing Emissions of Greenhouse Gases Other than CO2

Other than CO2, the Fujitsu Group mainly uses perfluorocarbon (PFC), hydrofluorocarbon (HFC) and sulfur hexafluoride (SF6) in its semiconductor divisions. Following the semiconductor industry's action plan\*1, we have set a target of a 20% reduction by the end of FY 2012 for the Fujitsu Group Environmental Protection Program (Stage VI). To this end, we have changed to gases with a lower global warming potential (GWP) and continue to install equipment to remove harmful materials in new and existing fabrication lines.

In FY 2011, we reduced the amount of these emissions measured in GWP equivalent by 41 thousand tons, to about 131 thousand tons. This corresponds to a 49.6% reduction compared to FY 1995.

\*1 Semiconductor industry's action plan :

Semiconductor industry target (voluntary action plan) of "reducing emissions by 10% relative to FY 1995 levels by the end of FY 2010."

## Promoting the Use of Renewable Energy

Although we have adopted renewable energy sources such as solar power generation at our business sites, in the Fujitsu Group Environmental Protection Program (Stage VI), we have set increased use of renewable energy as a new goal, and introduced the target of installing ten times as much capacity by the end of FY 2012 as we had in FY 2007.

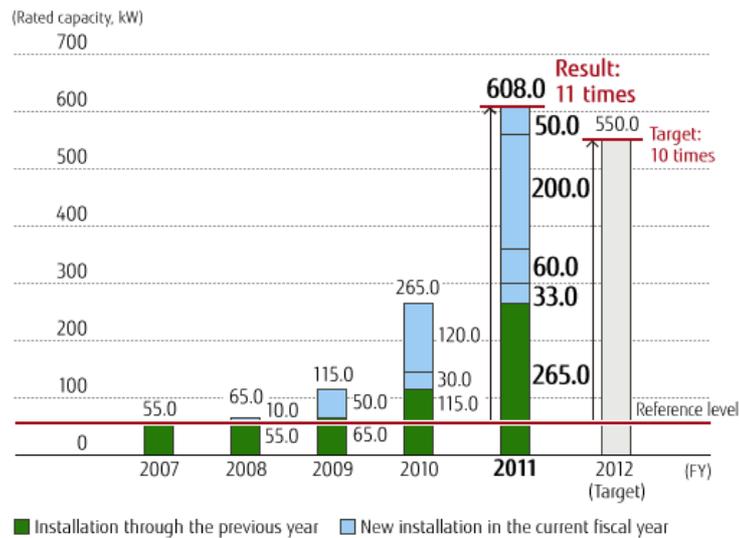
In FY 2011, we installed 343 kW of solar generating capacity at four business sites in total, including 200 kW at the Sekijyo Plant of Fujitsu Telecom Networks Limited, and 50 kW at Fujitsu I-Network Systems Limited. This resulted in a total installed capacity of solar generating equipment of 608 kW at the end of FY 2011, which is 11 times that of FY 2007.

Solar power generating equipment was initially installed at the Sekijyo Plant to cope with electric power usage restrictions mandated by the Japanese government in the summer of 2011. The plant achieved a reduction in peak hour electricity demand of 33%, exceeding the mandated reduction target of 15%.



Solar panels at the Sekijyo Plant of Fujitsu Telecom Networks Limited

### Cumulative Total Installed Solar Power Generation (renewable energy\*)



\*Renewable energy utilization ratio: Calculated based on the rated capacity of solar power generation equipment installed at Fujitsu business sites.

## Responding to the Japanese Revised Energy Conservation Law

As a result of the revisions to and enforcement of the Japanese Energy Conservation Law<sup>\*2</sup>, business operators are now required to grasp their annual energy usage at all their business sites in Japan.

In the Fujitsu Group, we use a system (Fujitsu FIP's SLIMOFFICE) that grasps and tabulates the amount of energy we used across Japan, including for the office space we rent, and manages the amount used by each Group company. Note that the Fujitsu Group includes 26 companies that fall within the class of Specified Business Operators (businesses whose annual energy usage is in excess of 1,500 kl when converted to a crude oil equivalent value) newly stipulated in the revised law.

The amount of energy used by the Group within Japan under the Energy Conservation Law in FY 2011 was 588 thousand kl (crude oil equivalent), corresponding to CO2 emissions of about 1.026 million tons<sup>\*3</sup> based on the Act on Promotion of Global Warming Countermeasures<sup>\*4</sup>, which was also revised.

\*2 Energy Conservation Law :  
Act on the Rational Use of Energy.

\*3 about 1.026 million tons :  
There are differences in ranges for tabulation that include tenants and calculations based on CO2 conversion coefficients for each electric power company for results reporting under our Environmental Protection Program.

\*4 Act on Promotion of Global Warming Countermeasures :  
A system for calculating, reporting, and disclosing the amount of greenhouse gas emissions stipulated by Japan's Act on Promotion of Global Warming Countermeasures.

## Participating in a Trial Emission Trading Scheme

We participated from FY 2008 until FY 2010 in the Japanese government's domestic emissions trading scheme pilot project, launched in FY 2008 with the aim of examining further global warming countermeasures based on a medium- to long-term viewpoint.

Continuing in FY 2011, we were validated by an external institution in line with the pilot project<sup>\*5</sup>. Our emissions level for FY 2010 was verified, and we achieved our targets for the FY 2008 to FY 2010 period.

\*5 External institution in line with the pilot project :  
The principal framework for the trial implementation of an integrated emissions trading market in Japan. Participants voluntarily establish emission reduction targets and are allowed to supplement their own reduction efforts by trading emission allowances and credits.

## Reducing Greenhouse Gas Emissions Throughout the Supply Chain

There have been increasing discussions in recent years about how to calculate and report greenhouse gas emissions generated from a company and its supply chain. The ICT sector in particular reportedly has a major contribution to make in reducing emissions in other sectors<sup>\*6</sup>. For this reason, the Fujitsu Group is placing emphasis on calculating and reporting greenhouse gas emissions for the entire supply chain, including contributions, and is actively conducting related initiatives worldwide.

Since FY 2003 we have published figures for greenhouse gas emissions from corporate activities through the Carbon Disclosure Project (CDP)<sup>\*7</sup>, and are actively involved in greenhouse gas emission calculations, including supply chain emissions. In addition, we are also taking part in drafting the ICT sector guidelines<sup>\*8</sup> for the GHG Protocol, an international set of guidelines for calculating and reporting greenhouse gas emissions. In FY 2010 we took part in the product systems subcommittee of the Ministry of the Environment's investigative commission on methods for calculating greenhouse gas emissions in the supply chain. So-called 'Scope 3' calculations were conducted and issues identified. Based on these findings, in FY 2011 the Ministry of Economy, Trade and Industry and the Ministry of the Environment jointly sponsored an investigatory commission on calculating organizational greenhouse gas emissions through the supply chain. The electrical and electronics industry's basic approach was clarified regarding the fact that industry characteristics must be considered, specifically the many formats for Scope 3 calculations and reporting and the complexity and length of supply chains that often include overseas suppliers.

Against this backdrop, in FY 2012 Fujitsu will launch an in-house working group to closely consider the possibilities and issues inherent in Scope 3. We will be considering how to incorporate a Scope 3 perspective into contributions to environmental impact reductions for society as a whole.

\*6 :  
["2010 WHITE PAPER Information and Communications in Japan" from the Ministry of Internal Affairs and Communications \(Japanese only\)](#)

\*7 Carbon Disclosure Project (CDP) :  
Carbon Disclosure Project (CDP): A project in which institutional investors and others cooperate to request disclosure of information concerning climate change strategy and greenhouse gas emissions from the world's leading corporations.

\*8 ICT sector guidelines :  
[Greenhouse Gas Protocol ICT Sector Guidance](#)

### Case Study

#### Participation in Great Taipei World Car Free Day

Fujitsu Taiwan, which is involved in the ICT business, participated in the 2011 Great Taipei World Car Free Day held in the Taiwanese capital of Taipei in September 2011. The event is held every year to promote environmentally friendly transit options. Special lanes are established for pedestrians and bicyclists, and Taipei residents are called on to use modes of transport with low CO2 emissions and public transportation.

Fujitsu Taiwan encouraged all its employees to commute to work in environmentally friendly ways to help reduce Taipei's CO2 emissions. As a partner in the campaign to save polar bear habitats, the company ran enlightenment activities on the importance of biodiversity as well as other proactive initiatives as an official sponsor, ultimately receiving the Taipei Mayor's Award for its efforts.

