

Energy-saving Measures (Global Warming Prevention)

Establishing strict targets for every site to combat global warming by reducing energy consumption

The reduction of energy and fuel consumption by plants and other sites is indispensable to preserving our limited energy resources and restraining CO₂ generation, which accelerates global warming. The Fujitsu Group has established exacting reduction targets for every site and is striving to curb emissions of greenhouse gases other than CO₂ as well.

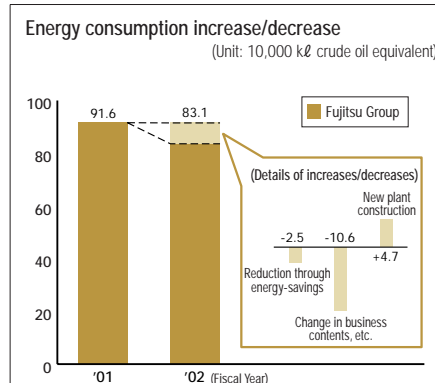
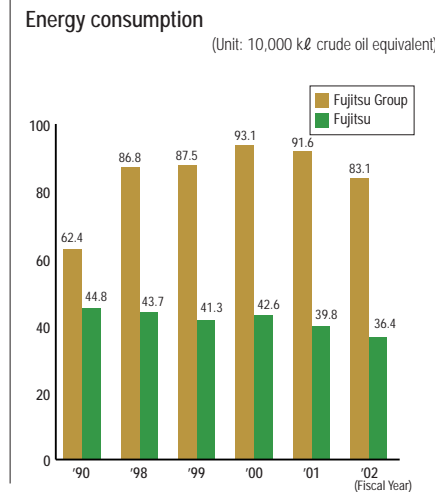
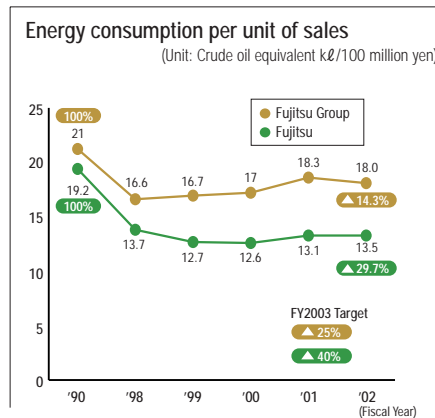
Energy-savings Results

We have established energy-savings targets calling for the reduction of total electric power consumption per unit of sales by 25% for the Fujitsu Group as a whole and by 40% for Fujitsu Japan, relative to fiscal 1990 figures, by the end of fiscal 2003. The Fujitsu Group's fiscal 2002 energy consumption measured 18.0 kℓ per 100 million yen crude oil equivalent, or a 14.3% reduction relative to fiscal 1990. The corresponding figures for Fujitsu were 13.5 kℓ per 100 million yen crude oil equivalent, or a 29.7% reduction.

* Fujitsu Group: 23 Fujitsu sites / plants, 28 domestic affiliates (manufacturing) and 19 overseas affiliates (manufacturing)
 * Targeted energy: Total of electricity, oil and gas consumed at plants/operations (crude oil equivalent kℓ)

Contents of activities/analysis for fiscal 2002

We have established a rough target of reducing the absolute value of energy consumption by about 1% a year through reduction activities conducted at plants and other sites (per unit of sales in the protection program). Accumulating various efforts focused on improving equipment operation and management during the past fiscal year enabled us to reduce energy consumption by approximately 25,000 kℓ crude oil equivalent. Additional decreases at some sites due to changes in the business structure resulted in total energy consumption of 85,000 kℓ, a year-on-year reduction of 9.2%. Energy consumption by the Group as a whole was 831,000 kℓ (31,240,000 GJ) crude oil equivalent.



Case Studies

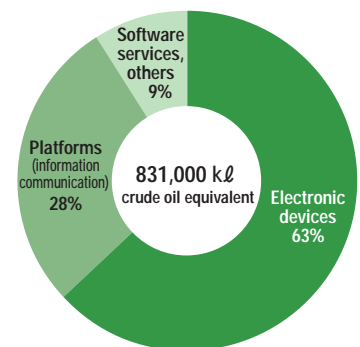
These examples show some of the latest energy-saving measures implemented at plants and other sites:

Measures to reduce energy consumption by optimizing facility operation

The graph below shows the energy usage ratios for the various businesses groups. The Electronic Devices Business Group, which engages in semiconductor manufacturing, accounts for some 60 percent of the total consumption. This business group conducted large-scale energy reduction activities at all its plants in fiscal 2002 and achieved energy savings of 8,000 kℓ crude oil equivalent. A breakdown of its energy-saving efforts shows 175 activities, including strict energy-saving diagnostic checks and optimization of equipment operating conditions without investment.

- Optimization of the number of refrigerating machines operated according to fluctuations in the burden
- Optimization of air-conditioning and cooling water temperatures
- Reduction of syringing room emission volume

Fiscal 2002 usage volume by group (composition ratio details)



Introduction of an air pollution-free NAS battery system

(Fujitsu Akiruno Technology Center)

We introduced the world's first NAS battery system* with a reduced environmental burden as a countermeasure to sudden electricity pressure droppages and power failures at our Akiruno Technology Center and began operating the system in July 2002. Use of a new high-density, high-safety NAS battery realized an electrical system that does not release any polluting substances into the atmosphere. The reduction effects are expected to be approximately 14,000 tons in CO₂ emissions and approximately 18 tons in nitrogen oxide (NO_x) emissions as compared with a conventional gas-turbine system. We are committed to curbing CO₂ emissions further and to employing nighttime electric power for stable production facility operation.

* NAS battery
The sodium-sulphur battery is a secondary battery capable of storing three times as much electric power as the lead secondary batteries currently used in automobiles. Storing nighttime electricity in an NAS battery and using it during daytime hours is an effective method of evenly distributing electric power consumption.



Retarding-basin solar-power generation system (Fujitsu Numazu Plant)

We have set up a power generation system in a retarding basin for final release of sewage at our Numazu Plant. The system, which employs a solar battery module capable of double-surface power generation, is designed to generate power with reflected light from the water surface striking the lower surface as well as with sunlight striking the upper surface. The plant uses the power generated by the system to supply power to circulation pumps employed for such purposes as drainage purification and to the emergency discharge water intercept system. (Generating capacity: 5 kW or higher)



Measures Implemented to Reduce Greenhouse Gases

Results for CO₂ emission volumes

The approximate total fiscal 2002 CO₂ emissions from energy use were 1.349 million tons-CO₂ for the Fujitsu Group, a figure representing a decrease of 7.3% from fiscal 2001, and 0.554 million tons-CO₂ for Fujitsu Japan, a figure representing a decrease of 8.5% from fiscal 2001. The total volume for the Group has increased since fiscal 1990 due to business expansion.

* These calculations substitute Japanese coefficients for crude oil equivalents and CO₂ emissions volumes at overseas companies.

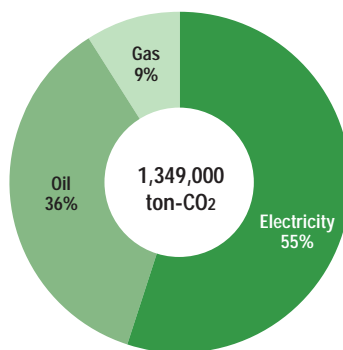
CO₂ emissions through energy consumption

(Unit: 10,000 ton-CO₂)

	'90	'98	'99	'00	'01	'02
Fujitsu Group	98.5	132.0	138.7	146.2	145.5	134.9
Fujitsu	70.9	64.4	62.6	65.4	60.6	55.4

CO₂ emissions through energy consumption

(Unit: 10,000 ton-CO₂)



Measures to reduce greenhouse gases other than CO₂

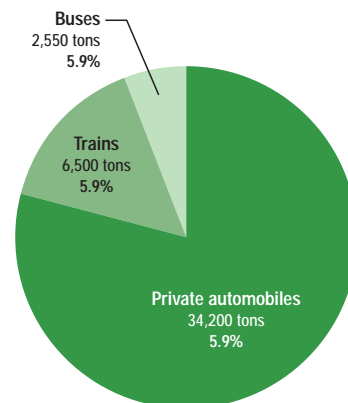
Every company in the semiconductor industry has created an independent action plan to cut emissions of greenhouse gases besides CO₂, including perfluorocompounds (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF₆). Fujitsu Japan, led by the Electronic Devices Division, has developed an in-house emissions control implementation plan in conformity with industry action plans and international targets. We are

continuously pursuing such activities as conversion to gases with a lower greenhouse coefficient and installation of specialized equipment on new production lines. Emissions related to semiconductor processing amounted to approximately 0.511 million tons in 2002.

Estimation of CO₂ emissions during commuting

In a new activity introduced for purposes of CO₂ emissions volume reduction, the Fujitsu Group is striving to determine the volume of CO₂ emissions for which our employees are indirectly responsible at the time of commuting. The following data represent the results of trial CO₂ emissions volume calculations for the employees of Fujitsu and 117 affiliated companies in Japan. We also conduct positive Group-wide activities aimed at reducing CO₂ emission levels during commuting through strict enforcement of eco-friendly driving (idle shutdown).

CO₂ emissions volumes by commuting method
Total users: Approx. 117,300
CO₂ emissions: Approx. 43,250 tons/year



(Note) Transportation distances include estimates to some extent.

Principal Plans for Fiscal 2003

- We are promoting energy savings by implementing such measures as bench marking and energy-saving diagnoses from the energy efficiency perspective and striving to enhance efficiency further by achieving targets.
- Efforts conducted to prevent global warming include measures aimed at strengthening every aspect of our business operations as well as developing emissions volume calculation techniques based on international standards.