A full-scale effort to provide customers with IT services helps reduce greenhouse gases in Japan.

Japan's Growing Greenhouse Gas Emissions

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Today countries around the world are taking steps to adopt clean energy sources that do not produce greenhouse gases and to conserve energy. This is because it is now clear that increased CO_2 emissions from the consumption of energy is a contributing factor to global warming.

According to a recent survey by the Ministry of the Environment, Japan's greenhouse gas emissions increased by 11.2% from 1990 to 2002. While emissions from the manufacturing sector that produces that greatest amount of CO_2 shows a slight declining trend, greenhouse gas emissions from the transportation sector, from retail stores and commercial buildings, and from homes have shown a remarkable increase. CO_2 emissions for the transportation sector alone climbed from 217 million tons in 1990 to 261 million tons in 2002, an increase of 20.4%. Increased emissions from retail stores and buildings in the commercial sector grew at an even faster rate going from 144 million tons in 1990 to 197 million tons in 2002, a staggering increase of 36.7%.

What IT can do to Prevent Global Warming

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Greater use of IT certainly has the potential to reduce the movement of people and things and thereby reduce CO_2 emissions from the transportation sector and from retail stores and buildings. Indeed, trial calculations by NTT (holding company) indicate that Japan's total energy consumption in 2010 could be reduced as much as 3.9% by promoting telework so fewer people have to commute into work, by streamlining physical distribution of goods through e-commerce , and by converting hardcopies and physical media to electronic format. This is equivalent to the amount of energy consumed over a year's time by all the households in Tokyo, Kanagawa, Chiba, and Saitama combined.

On the debit side it is of course true that more extensive use of IT would require additional network equipment that increases the consumption of energy. Additional telecom equipment and network resources to support widespread always-on broadband connections will in 2010 require about 1.5 times the energy used today, equivalent to 1.1% of Japan's total energy consumption. To offset increasing emissions from wider deployment of IT, NTT Group is taking steps to reduce the environmental load resulting from business activities. And at the same time, we are also helping reduce the environmental load of society through IT.

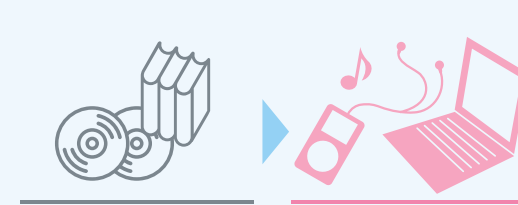### Energy reduction effect through use of IT (2010)

■E-commerce for corporations
（Online ordering system, etc.）
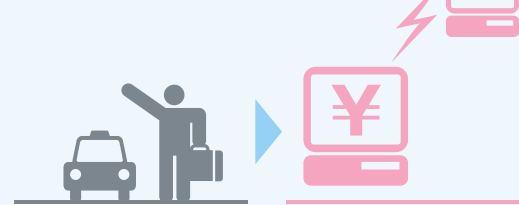
●Energy reduction factors
Efforts to minimize travel for business negotiations while also streamlining the distribution of goods.
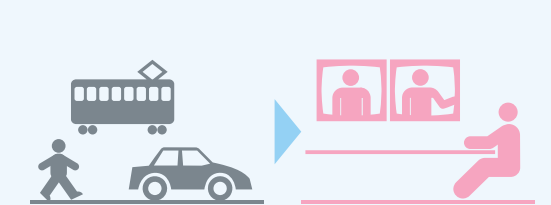
Percent reduction by 2010
2.5%

■Convert information to digital format
（Distribution of information over the Internet, etc.）

●Energy reduction factors
By distributing books, newspapers, CDs, videos and other content over networks, the production and physical distribution of such products are made much more efficient.
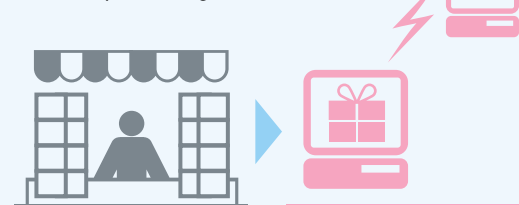
Percent reduction by 2010
0.3%

■Substitutes for physical movement of people
（TV conferencing systems, etc.）

●Energy reduction factors
Use of transportation facilities and offices is reduced. Managing vending machines remotely means fewer and more efficient deliveries.
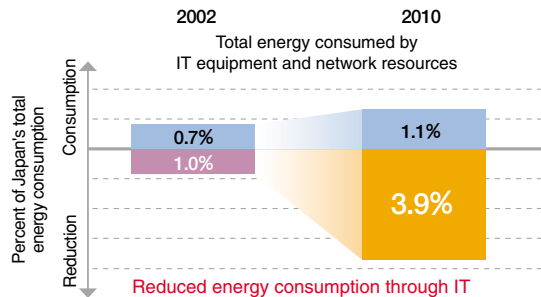
Percent reduction by 2010
0.4%

■E-commerce for individuals
（Online purchasing, etc.）

●Energy reduction factors
CO_2 emissions reduced by curbing excess production and streamlining intermediate distribution and retail stores.
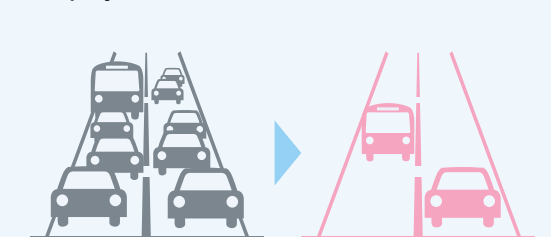
Percent reduction by 2010
0.6%

Energy consumption and reduction by using IT

2002   2010
Total energy consumed by IT equipment and network resources

Percent of Japan's total energy consumption

Consumption
0.7%   1.1%
1.0%

Reduction
3.9%

Reduced energy consumption through IT

Energy consumed by IT equipment and network resources in 2002 constituted about 0.7% of Japan's total energy consumption. At the same time, energy consumption was reduced through the use of IT by 1.0%. By 2010 it is projected that telecom equipment and network resources will constitute 1.1% of Japan's total energy consumption to support widespread deployment of always-on broadband connections, but the use of IT will reduce Japan's total energy consumption by 3.9%.

■Deployment of ITS*1

●Energy reduction factors
Traffic tie-ups will be alleviated through the use of VICS*2 and other traffic information systems.

Percent reduction by 2010
0.1%

＊1 ITS: Intelligent Transport Systems. IT-based transportation systems for helping improve traffic congestion, accidents, and other transportation issues.
＊2 VICS: Vehicle Information and Communication System. A system enabling motorists to receive continuous realtime reports about current travel times, incidents, and congested routes and display the information on a car navigation system.