Developments in the JT Group Environmental Action Plans 2005-2008

Objective		Target (FY2008)	Results (FY2007)	Target Companies
Management System	**Improve environmental management of the group**	Expand the targets of group companies for environmental management	Evaluated the environmental performance of Thai Foods International	A
			Obtained ISO 14001 certification at Asahi Shokuzai	
			Began to establish an environmental management system at TS Network	
Products and Services	**Promote development of eco-products**	Continue to develop and launch eco-products	Continued to develop eco-products	B
			Promoted the use of paper trays for commercial frozen foods (Foods Business)	
Process and Supply Chain	**Reduce CO_2 emissions**	JTG Reduce total CO_2 emissions by 20% below FY2003 levels	Reduced by 24.8% below FY2003 levels	C
		JT Reduce total CO_2 emissions by 32% below 1995 levels	Reduced by 35.8% below FY1995 levels	
		JTG Increase the percentage of LEVs to the fleet of company-owned vehicles to over 50%	Switched 77.2% of company-owned vehicles to LEVs.	
		JT Maintain the modal shift rate of long distance transportation (railroad and ocean) at over 50% (Tobacco Business)	Achieved a modal shift rate of 61.6%	
	Reduce the amounts of natural resources	JTG Reduce water consumption by 40% below FY2003 levels (at factories on a unit sales basis*)	Reduced by 60.1% below FY2003 levels	B
		JT Reduce water consumption by 56% below 1995 levels (total)	Reduced by 60.5% below 1995 levels	
	Proper management of chemical substances and reducing their use amount	Manage chemical substances properly in accordance with local laws and regulations in each country, sharing chemical substance management policy	Four business sites audited by the environmental audit team, with no non-compliances identified	B
		Comply with management classification determined by JT Group chemicals management guidelines, and reduce the use amount of those substances	One business site exempted from PRTR, with the amount of chemical substances subject to PRTR reduced by 15% below 2006 levels	C
	Reduce the waste generated and promoting recycling	JTG Reduce the total amount of waste by 14% below 2003 levels (at factories)	Reduced by 18.0% below 2003 levels	C
		JTG Increase the recycling rate to over 90% (at factories)	Achieved a recycling rate of 85.0%	B
		JT Achieve zero emissions at factories and the headquarters Increase the recycling rate to over 60% (at offices)	Achieved zero emissions at factories and the headquarters Achieved a recycling rate of 88.4% at offices	
	Promote green procurement of office supplies and equipment, and green procurement of raw materials	JTG Establish green purchasing standards and systems for office supplies, etc.	Green purchasing standards and systems being established	B
		JT Increase the green purchasing rate of office supplies, etc. to over 80%	Achieved a green purchasing rate of 87.2%	
		JTG Establish green purchasing standards and goals for containers and packaging materials	Green purchasing standards for containers and packaging materials being established	B
		JT Establish green purchasing goals for containers and packaging materials		
		Require that major suppliers for raw materials establish the environmental management system	Environmental management systems adopted by 94% of raw material suppliers, as against the target of 85% (Tobacco Business)	D
Environmental Education	**Raise awareness for the environment among employees**	Develop and conduct environmental education programs for employees and management	Environmental managers: Reviewed education programs All employees: Provided environmental information through the intranet	B
Environmental Communication	**Support government and environmental organizations**	Continue to work on environmental projects of the Administration, etc. and support environmental conservation groups	Continued to support environmental conservation groups	E
	Afforestation projects	Conduct of afforestation activities for the conservation of ecosystems and forest resources	Domestic: Worked on reforestation and forest conservation at JT Forests, with their area expanded Overseas: Worked on reforestation, agricultural productivity enhancement, and living standard improvement projects in Africa	E
	Appropriate disclosure of environmental information	Improve the contents of reports from the perspective of the entire JT Group	Renewed and improved the website and issued the 2007 CSR Report	E

Definition of target companies
A: the entire JT Group, B: JT Group companies (domestic and overseas), C: JT Group companies (domestic), D: major JT Group companies, E: JT only (companies categorized as B-E are subject to environmental management)
* Sales refer to those exclusive of tobacco tax in order to eliminate the effect of changes in the tax rate

Status of the JT Group's Environmental Management

		ISO 14001 Certification	Complying with ISO14001
JT		Cigarette Factories, Printing Factories, Vending Machinery Division, regional leaf tobacco headquarters (factories)	Company Headquarters, all branches, all laboratories, regional leaf tobacco headquarters
Group Company	Tobacco Business	JT International S.A. Eastern Japan Plant Service Co., Ltd. Central Japan Plant Service Co., Ltd. Western Japan Plant Service Co., Ltd. Kyushu Plant Service Co., Ltd. JT Engineering Inc. Japan Filter Technology Co., Ltd. Fuji Flavor Co., Ltd.	JT Logistics Co., Ltd. (tentative) JTI offices TS Network Co., Ltd.
	Pharmaceutical Business	Torii Pharmaceutical Co., Ltd., Sakura Plant	
	Foods Business	Japan Beverage Inc. Nihon Shokuzai Kako Co., Ltd. Sunburg Co., Ltd. Iipingshang Foods Corporation Asahi Shokuzai Co., Ltd.	JT Foods Co., Ltd.
	Others	JT Real Estate Co., Ltd. (*1)	

JT A-Star Co., Ltd. and TS Network Co., Ltd. adopted a simplified environmental management system.

*1: JT Real Estate Co., Ltd. withdrew form the ISO 14001 program at the end of August 2008.

Environmental Auditing

Auditees

JT audited the following business sites for environmental issues in FY2007.

Category	Business Site
Tobacco Business	Kumamoto Area Sales Headquarters Hiratsuka Factory (P, C) Kita-Kanto Factory (P, C) Tagawa Factory of Japan Filter Technology Co., Ltd. (P, C)
Foods Business	Saint-Germain Co., Ltd. (P, C)
Total	Five business sites

(P) Business sites audited for consolidated storage management of PCB

(C) Business sites audited for chemical substance management

Relevant Laws and Regulations

Environmental auditing is designed to review site status in respect of compliance with 15 specific environmental laws and related ordinances.

Air Pollution Control Law	Water Pollution Control Law	Law for Combined Household Wastewater Treatment Facility
Sewerage Law	Noise Regulation Law	Vibration Regulation Law
Offensive Odor Control Law	PRTR Law	Factory Location Act
Fire Defense Law	High Pressure Gas Safety Law	
Law Concerning Special Measures against Dioxins		
Waste Management and Public Cleaning Law		
Law Concerning the Improvement of Pollution Prevention Systems in Specified Factories		
Law Concerning the Rational Use of Energy		

Results of Environmental Manager Education Programs in FY 2007

Name of training course		Target	Contents of training course	Number of trainees
Environmental Management System	Newly-appointed environmental manager training	Newly-appointed environmental managers and staff members	Training for newly-appointed environmental staff and others	65
	Training for environmental auditors	Environmental auditors	Training of internal auditors (theory)	26
	Training for environmental auditing through the intranet	Environmental audit team leaders	Training of internal auditors (practice)	18

Reducing Environmental Impact from Containers and Packaging

In March 2002, having formulated JT's Environmental Guidelines for Designing Packaging Materials that is environmentally compliant in order to reduce the environmental impact caused by containers and packaging, JT switched to environmentally friendly packaging forms and structures.

JT's Environmental Guidelines for Designing Packaging Materials (Formulated on March 20, 2002)

1. Do not affect adversely the human and the environment.
(1) We shall discharge no substance which would be likely to have a bad influence on the human, the ecosystem and the natural environment, through the life cycles of the packaging.
(2) The constituents of the package shall not contain the harmful chemical substance stipulated by the national laws and industry voluntary standards.
2. Efficiently utilize energy and resource.
(1) Energy saving
We shall use materials which necessitate small amount of energy through their life cycles.
(2) Resources saving: reduction
While ensuring required strength and functions, we shall commit ourselves to simplify packaging and omit outside packaging, as well as to reduce the weights of the packaging as much as possible.
(3) Resources saving: reuse
We shall utilize the packaging for transports, the form and the structure of which could be reusable as much as possible.
(4) Resources saving: use of the recycled materials.
We shall consider safety, functionality and economical efficiency, and shall utilize recycled materials and those which highly contain recycled goods as much as possible.
3. Ensure the recyclability after consumption.
(1) Usage of the easily recyclable materials.
We shall consider safety, functionality and economical efficiency, and shall utilize the easily recyclable materials, including auxiliary materials such as adhesives.
(2) Designs enabling recycling easier
We shall decrease the varieties of materials used, and when we would utilize more than two types, we shall adopt the forms and the structure that every material is easily separated, disassembled and separately disposed.
(3) Provision of recycle-related information
By indicating methods to separate, disassemble and separately dispose, and other information such as material names, we shall provide information to support consumers for recycling.
4. Ensure treatability and disposability when discarding.
(1) Usage of materials being considered environmental impact when discarded
We shall utilize materials being considered the degradability after discarded, and the environmental impact at incineration facilities and landfill sites.
(2) Design being considered volume reduction
We shall adopt the forms and the structures that the volume when discarded becomes as small as possible by folding or squashing.
5. Implement environmental impact assessment.
When using packaging with the new specifications, we shall establish evaluation items and standards which are concerned with its environment conformity and implement environmental impact assessment in advance.

Changes in Environmental Impact Associated with Business Operations

For JT

Base Year

FY		1995	2003	2004	2005	2006	2007	Unit
Amount of energy used		7,280	6,408	6,248	5,367	5,114	4,947	TJ
	Heavy oils, etc.	1,646	1,008	1,047	812	575	543	
	Gas	524	969	1,048	1,010	1,055	852	
	Purchased electricity	4,864	4,220	3,948	3,362	3,309	3,378	
	Vehicle fuel	221	187	180	164	155	153	
	Others (*1)	26	23	25	19	19	21	
CO_2 (*2)		449	381	370	315	297	288	1,000 tons-CO_2
Waste, etc.	Amount of waste generated	28.6	31.3	35.2	31.1	28.1	27.1	1,000 tons
	Recycling rate	33.7	83.5	89.5	95.0	97.6	97.6	%
Amount of water used (*3)		5,827	4,014	3,611	2,725	2,472	2,303	1,000 m^3
Amount of copy and OA paper		618	451	407	309	295	290	t

Domestic JT Group Companies (Total)

Base Year

FY		1995	2003	2004	2005	2006	2007	Unit
Amount of energy used		—	8,539	8,357	7,133	6,735	6,578	TJ
CO_2 (*2)		—	519	508	428	399	391	1,000 tons-CO_2
Waste, etc	Amount of waste generated	—	41.0	45.5	39.8	36.3	35.1	1,000 tons
	Recycling rate	—	84.3	89.5	94.8	97.6	97.7	%
Amount of water used (*3)		—	11,121	10,594	6,163	5,153	4,728	1,000 m^3

*1 Figures indicate total heat supplied by thermal providers, use of solar heat and heat recovered from incinerators.
*2 CO_2 emissions, in this report, refer to energy-related emissions unless otherwise specified.
*3 The amount of recycled water is not included.

Calculation of Environmental Load

●Energy Each energy consumption is converted into joule heat, based on the conversion factor.

- Conversion into TJ: The value in the General Energy Statistics of Japan (FY 2000) (The Agency for Natural Resources and Energy) is used (38.7MJ/L) (1TJ $=1\times10^{12}$ J)
- Conversion factor: Table 1 of the regulations of the Law Concerning the Rational Use of Energy (FY 1999) is referred to.
- Town gas: An oil equivalent factor is set for each gas.
- Cold and hot water: Based on the actual heat supply from a heat supply company

●Amount of water used The total consumption of tap water, well water, river water and industrial water, excluding that of recycled water

●CO_2 Emissions are calculated based on the Environmental Activity Evaluation Program (issued by the Environment Agency in September 1999)

- Purchased electricity: A factor of 0.55kg-CO_2/kWh is used for thermal power generation
- Town gas: An emission factor is set for each gas.
- Cold and hot water: Based on the actual heat supply from a heat supply company

The factor of the GHG Protocol is used for the international tobacco business

●NOx (nitrogen oxides) Emissions are calculated based on the Environmental Activity Evaluation Program (issued by the Environment Agency in September 1999)

●SOx (sulfur oxides) Emissions are calculated, with the amount converted into SOx, based on the sulfur content and density of the fuel used as well as on the efficiency of desulphurization equipment. A factor of 0.00024kg/kWh (the results in 1999, the Federation of Electric Power Companies of Japan) is used for purchased electricity.

●Greenhouse gases Based on the Manual for the Calculation and Report on Greenhouse Gas Emissions (issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in June 2007).

JT Group Definitions

●Zero Emissions

The JT Group's "zero emission" refers to a recycling rate of over 99.5%.

●Recycling

The JT Group's "recycling" refers to "recycling use," which is stipulated in the Basic Law for Establishing the Recycling-Based Society, and "recycling use" refers to "re-use, recycling and heat recovery."

"Re-use" is to use recyclable resources as they are (including the use of repaired products), or to use all or part of recyclable resources as parts or in the form of other products.

"Heat recovery" (thermal recycling) is to use all or part of recyclable resources, and can be or could be used as fuel to produce heat. The JT Group's "heat recovery" includes waste heat recovery from incinerators, processing into solid fuel, and gas recovery from gasification melting furnaces.

●Intermediate disposal

Intermediate disposal refers to processes for reducing the weight or volume of waste, that is, incineration, shredding, compression and neutralization.

●Amount disposed

The amount disposed refers to the total amount of intermediately disposed of (by incineration, shredding, compression and neutralization, etc.) and sent to landfills (excluding the amount recycled).

●Amount of final disposal

The amount of final disposal refers to the total amount sent directly and indirectly (through intermediate disposal) to landfills (excluding the amount of residues after recycling).

The amount of sludge refers to the amount of sludge dehydrated by JT. The amount recycled refers to the total amount recycled regardless of the presence or absence of residues after recycling.

JT's Environmental Conservation Cost

Tabulation subjects: All JT business sites (factories, branches, local business sites, laboratories, etc.)
Period Covered: FY 2006 (April 1, 2006 to March 31, 2007) and FY 2007 (April 1, 2007 to March 31, 2008)

Unit: million yen

Environmental Conservation Cost						
Category		Key Measures in FY 2007	Results in FY 2006		Results in FY 2007	
			Amount Invested	Amount of expenditure	Amount Invested	Amount of expenditure
(1) Environmental preservation costs to reduce production/service-derived environmental impact in JT' s business areas (business area cost)		—	650	1,503	1,134	1,394
Breakdown	① Pollution prevention costs	Introduction of denitrification equipment Improvement of effluent treatment facility Adoption of LEVs Facility depreciation costs Maintenance of pollution-control facilities	546	550	786	656
	② Global environmental preservation costs	Optimization of air-conditioning control systems Conversion of energy-saving equipment Facility depreciation costs Maintenance of energy-saving facilities, etc.	85	107	301	102
	③ Resource circulation costs	PCB waste management Facility depreciation costs Waste disposal and recycling Maintenance of waste disposal facilities	19	846	47	636
(2) Costs of reducing production/service-derived impact upstream or downstream during resource circulation (upstream/downstream costs)		Recycling of containers and packaging materials	—	115	—	206
(3) Environmental preservation costs in management activities (management activity costs)		Establishment of organizations responsible for environmental audits and measures Monitoring and measurement of environmental load Improvement of green space	—	541	—	486
(4) Environmental preservation costs involved in R&D (R&D costs)		—	—	18	—	—
(5) Preservation costs involved in social activities (social activity costs)		Environmental cleaning activities Reforestation and forest conservation activities Contribution to environmental bodies Preparation of the CSR report	—	4,116	—	3,438
(6) Costs of dealing with environmental damage		Pollution impact levies Soil pollution survey and remedial measure	—	764	—	1.195
(7) Other environmental costs		Asbestos survey and remedial measures	—	753	—	196
Total			650	7,810	1,134	6,915

Environmental Conservation Effect					
Actual Effects	Item		Results in FY 2006	Results in FY 2007	Year-on-year Reduction
Effect on resources invested in business activities	Amount of electricity purchased	1,000 kWh	349,023	355,705	−6,682
	Fuel consumption (crude oil equivalent)	kℓ	42,121	36,063	6,058
	Vehicle fuel consumption (crude oil equivalent)	kℓ	4,009	3,937	72
	Amount of water used	1,000 m^3	2,472	2,303	169
Effect on environmental impact and waste produced by business activities	SOx emissions*	t	110	99	11
	NOx emissions*	t	138	130	8
	Amount of CO_2 emitted	1,000 t	297,359	288,156	9,203
	Amount of wastewater*	1,000 m^3	1,494	1,421	73
	Amount of waste, etc	t	28,114	27,055	1,059

* Factory data

Guidelines for Environmental Accounting

1. Amount of Expenditure and Investment

- The amount of expenditure and investment is based on the "Environmental Accounting Guidelines 2002" of the Ministry of the Environment.
  Expenditure for and investment in environmental conservation programs are tallied in. For those partially made in environmental conservation programs (more than 50%), the total amount of investment and depreciation costs are tallied in.
- Expenditures for depreciation of facilities have been recorded under expenditure for the depreciation in the financial statement.

2. Environmental Conservation Effect

- Differences arising as a result of comparison with the total amounts for the previous fiscal year in respect of the main areas of environmental impact have been deemed to be environmental preservation effect.