

## For the Environment

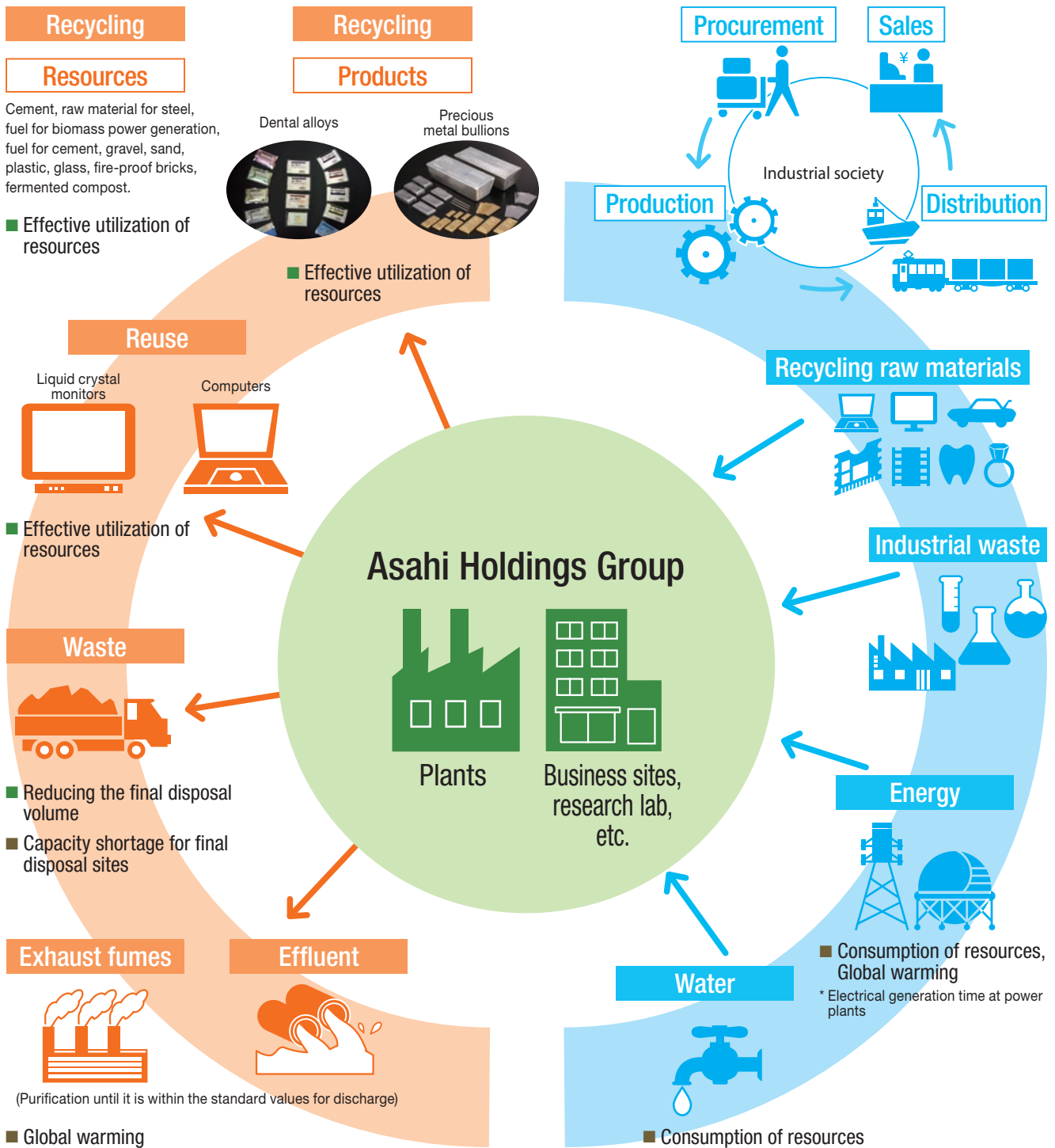
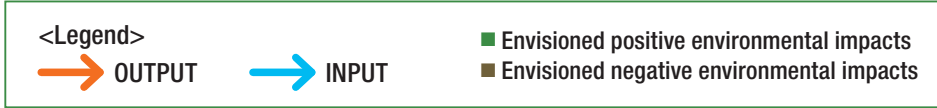
Asahi Holdings Group has formulated and implemented policies to address conservation activities for the global environment, and aims for sustainable development harmonious with the environment.

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# ENVIRONMENTAL IMPACT RESULTING FROM BUSINESS ACTIVITIES

This indicates the INPUT of the resources and energy needed for our group's business activities, as well as OUTPUT in the form of the environmental impact produced through our business activities.



## Environmental Performance

The energy, resources (water), chemicals, and so on used in our precious metal recycling and environmental protection business activities are listed as INPUT, while the environmental burdens given off from conducting business activities with the substances in the form of INPUT are listed as OUTPUT data.

### INPUT

	Unit	FY2006	FY2007	FY2008	FY2009
Electricity	MWh	15,892	18,942	22,503	21,960
Heavy oil	kℓ	1,410	2,433	2,406	1,466
Kerosene	kℓ	574	569	541	379
Light oil	kℓ	2,823	2,746	2,804	2,965
Gasoline	kℓ	632	704	804	848
Urban gas	1,000 m <sup>3</sup>	784	700	684	527
Water	1,000 m <sup>3</sup>	206	253	366	345
Chemical, etc.	t	20,082	21,336	17,347	13,293

### OUTPUT

	Unit	FY2006	FY2007	FY2008	FY2009
CO <sub>2</sub> emissions* <sup>1</sup>	t	21,653	25,233	27,355	24,466
Effluent* <sup>2</sup>	1,000 m <sup>3</sup>	252	250	245	208
Waste	t	23,700	24,848	20,886	16,644

\*<sup>1</sup>: Calculated in accordance with the Law Concerning the Promotion of the Measures to Cope with Global Warming in 2009.

\*<sup>2</sup>: Purified until it is within the standard values for discharge.

## Environmental Accounting

For the promotion of environmental management, we have introduced environmental accounting starting in FY2005 and publicly disclose costs related to environmental protection. These are prepared in line with the Environmental Accounting Guidelines of the Ministry of the Environment.

### ● Environmental Protection Costs

(Unit: million yen)

	Category	Contents of major initiatives	Expenses	Investments
1. Costs within the business area	(1) Cost of preventing pollution	Control and maintenance of gas emission facilities, water drainage, and so on.	417.04	28.28
	(2) Cost of protecting the earth's environment	Energy saving (Decreasing electric consumption, improving fuel-efficiency for vehicles, and so on.)	8.55	9.47
	(3) Cost of recycling resources	Entrustment of industrial waste treatment	214.19	25.48
2. Upstream and downstream costs		—	0.00	0.00
3. Cost of management activities		Management activities of ISO14001 Preparation of Corporate Report	59.70	5.48
4. Research and development costs		Improving efficiency for the precious metal refining process Decreasing the landfill disposal volume	85.47	0.00
5. Cost of social activities		Clean up activities in the neighboring communities	4.42	0.00
6. Cost of handling environmental damage		—	0.00	0.00
Total		—	789.37	68.71

# GLOBAL WARMING PREVENTION EFFORTS

The Japanese government has announced the goal to reduce 25% of greenhouse gasses compared to the amount in 1990 by the year 2020. We are working proactively toward meeting that goal by establishing a “CO<sub>2</sub> Reduction Office” to promote measures of reducing greenhouse gasses.

## Cutting GHG emissions by 25% or greater by 2020 from 2008 levels.

### Major Policies

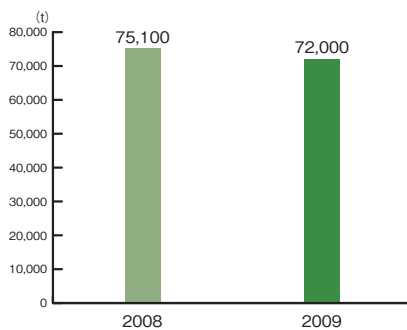
- ① Effective use of wastes (alternative use of fossil fuel).
- ② Updating energy efficient machines, facilities and buildings.
- ③ Effective use of wasted heat from incineration furnaces.
- ④ Introduction of photovoltaic generation.

The results of this fiscal year's efforts are as follows.

### ● Transition of Greenhouse Gas Emission Volume

We calculated the volume of greenhouse gas emission from energy sources (electricity, fossil fuels) and non-energy sources (from incineration of industrial wastes).

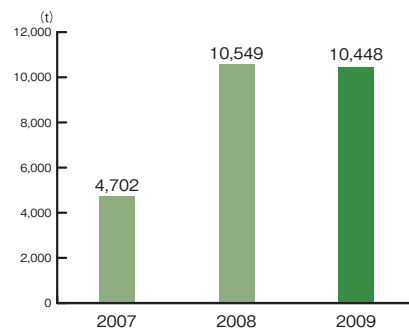
#### <Transition of greenhouse gas emission volume>



### ● Greenhouse Gas Emission Volume from Industrial Waste Furnaces

The volume of CO<sub>2</sub> created during the incineration of industrial wastes is calculated by following the Law Concerning the Promotion of the Measures to Cope with Global Warming.

#### <Transition of greenhouse gas emission volume from industrial waste furnaces>



The volume of CO<sub>2</sub> emission increased as a result of being given a large industrial waste furnace in FY 2007.

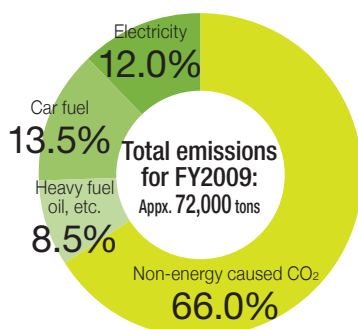
### ● Greenhouse Gas Emission Volume Details

Calculated using energy sources\*1 and non-energy sources\*2.

\*1: CO<sub>2</sub> created when use of energy such as electricity and fossil fuel takes place.

\*2: CO<sub>2</sub> created when wastes are incinerated and methane gas created during sewage treatment.

#### <Greenhouse gas emission volume by origin of cause>

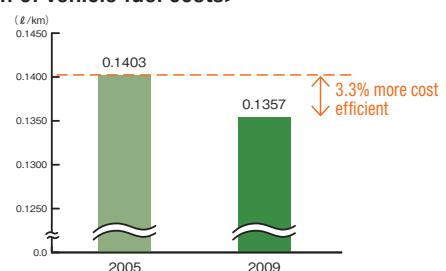


The emission coefficient given under the Law Concerning the Promotion of the Measures to Cope with Global Warming is used to calculate greenhouse gas emission volume. For CO<sub>2</sub> emission from wastes, the emission coefficient is used by calculating from the analysis value of wastes per category in the Wastes Disposal and Public Cleansing Act.

### ● Car Fuel

We have numerous vehicles in service and are making efforts to promote energy efficiency as the assigned transporter. With fuel cost reduction through the introduction of digital tachograph and better transportation efficiency through using more efficient collection routes, we continue to achieve fuel cost reduction of over 3% compared with the data yielded in FY 2005, prior to the introduction of digital tachograph.

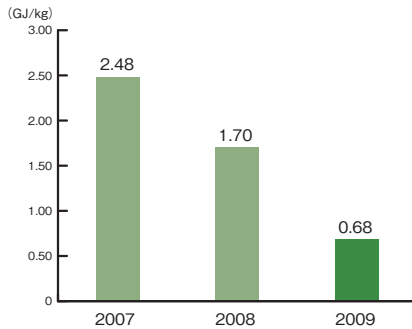
#### <Comparison of vehicle fuel costs>



## ● Basic Unit of Energy (Fossil Fuel) Consumption with Industrial Waste Furnaces

Basic unit of energy consumption per ton during industrial waste incineration has showed a substantial continued decline as a result of being given a large industrial waste furnace in November 2007 and reducing fossil fuel by separation of waste incineration.

### <Basic unit of energy consumption in industrial waste furnaces>



## ● Basic Unit of Energy Consumption in Precious and Rare Metals Recycling Business

Basic unit of energy consumption increasingly reduced due to a change in the composition of the production volume of precious and rare metals in FY2009.

### <Basic unit of energy (electricity, fossil fuel) consumption with precious and rare metals recycling>



## ● Participaing in “CO<sub>2</sub> Minus Project”

We have participated in “CO<sub>2</sub> Minus Project” since 2009, which National Federation of Industrial Waste Management Associations has advocated the independent guidelines. Members control emissions of greenhouse gasses in the year 2010 at the same level as the year 2000.



## ● Actual Examples of Energy-Saving Efforts at Each Plant

### <Actual examples of energy-saving efforts in FY 2009>

Plant	Details	Volume of greenhouse gas reduction*
Kita-Kyushu	Reduction of Class-A heavy fuel oil by 15% and electricity by 20% through better sorting of wastes and energy efficient incineration	2,090 t/year
Fukuoka	Reduction of 48,000kWh through cycling of water discharged from the chiller and concentrated operation.	27 t/year
Kita-Kyushu Hibiki	Class-A heavy fuel oil basic unit reduced by 20% through adequate management of the amount of air conditioning.	41t/year

\*: Conversion of energy (electricity and fossil fuel) reduction volume into CO<sub>2</sub> emission volume.

## ● Trial Introduction of LED Lighting

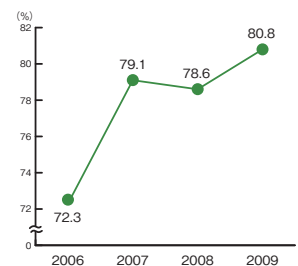
LED fluorescent lights were introduced at the Techno Center office as a trial. The practicality of LED lighting is evaluated in regard to the brightness, effects on working conditions and other aspects.



## ● Efforts to Improve Recycling Rate

We have achieved 80% of recycling rate in FY 2009 as a result of our efforts in recycling various types of wastes.

### <Recycling rate>



## ● Accessible Energy Saving

A useful energy saving guide (published by the Energy Conservation Center, Japan) for use at a plant, in the office and at home is made available to everyone via our in-house information network, supporting the efforts being made at each of our business centers.



# REDUCTION OF ENVIRONMENTAL BURDEN THROUGH BUSINESS ACTIVITIES

## Results of Our Group's Environmental Burden Reduction (FY2009)

We evaluated the major businesses and tasks of the company group to see how much of the environmental burden in the society as a whole has been reduced through our business activities. The subjects of the evaluation were the two business divisions for precious metals recycling and environmental protection, implementing at our plants and offices activities to save resources and make calculations in regard to (1) the reduction volume of natural resources, (2) the volume of recycling, (3) the volume of controlled greenhouse gas emissions, (4) the effects of reduction of final disposal, and (5) the effects of fossil fuel reduction.

Business process	Precious metal recycling	IT equipment recycling	Construction waste recycling	Treatment of effluent	Treatment by incineration	Freon detoxification treatment	Fermenting and composting	Photovoltaic power generation	Fuel production for energy generation	Recycling of glass and bricks	Reducing of external burdens on the environment	Volume (thousand tons / year)
Reduction of environmental burden												
Saving exhaustible natural resources	●		●							●	●	3,092
Recycling			●	●			●		●	●		340.8
Reduction of greenhouse gases	●					●		●			●	91.5
Minimization of the final disposal volume	◆	◆	◆		●		●		●	●		86.1
Saving fossil fuels					●			◆	◆			7.0

Results of reducing the final disposal volume: Covers the quantity by which the volume of waste brought to us (excluding waste oil, waste acids, and waste alkalis) is reduced (the quantity that could avoid controlled landfill disposal) as a result of going through our waste treatment process.

● : Calculated by weight  
◆ : Not targeted for numerical evaluation

### 1. Results of Saving Exhaustible Natural Resources

**3,092.0** thousand tons / year

Through recycling all kinds of raw materials, we are cutting back on the amount of natural resources (precious metals, non-ferrous metal ores, gravel, sand, agalmatolite, quartz sand, plaster, forests, etc.) that are being mined or felled, thus contributing to the protection of the global environment.

#### ● Precious Metal Ores (Precious Metal Recycling)



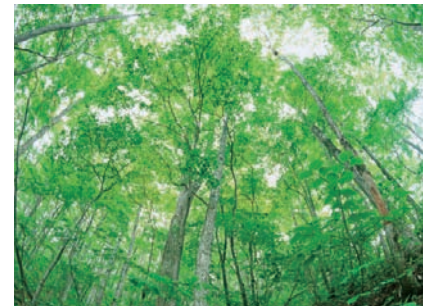
Recycling materials containing a lot of precious and rare metals contributes to saving mineral resources, such as precious metal ores.

#### ● Gravel (Construction Waste Recycling)



Materials such as sand, gravel and backfill soil are recycled from construction wastes like concrete waste.

#### ● Timber (Construction Waste Recycling)



Wood chips made from wooden construction waste are used as a carbon-neutral fuel in place of fossil fuels.

## 2. Recycling (Including Reused Products)

**340.8 thousand tons**

Various industrial wastes are treated for reuse as raw materials, with the following major recycled/reusable products being manufactured.

\*: Raw materials in parenthesis.

### ● Fermented Compost (Food Waste)



**11.9 thousand tons/year**

### ● Gravel, Sand (Construction Waste)



**69.0 thousand tons/year**

### ● Wood Chips (Construction Waste)



**1.7 thousand tons/year**

### ● Fire-Proof Bricks (High-Temperature Furnace Waste)



**3.1 thousand tons/year**

### ● Fuel for Cement (Plastic Waste)



**3.5 thousand tons/year**

### ● Metal Scraps (Construction Waste, OA Equipment)



**2.1 thousand tons/year**

### ● Rivers\* (Waste Liquid, Food Waste)



**209.0 thousand tons/year**

### ● Glass Cullet (Bottles, Waste Sheet Glass)



**40.5 thousand tons/year**

\*: Water discharged from waste treatment facilities

## 3. Results of Reducing Greenhouse Gases

**91.5 thousand tons**

We are making contributions to help reduce greenhouse gas emission through business activities such as the collection of precious metals, glass, fire-proof bricks and CFCs.

\*: Subject of evaluation: gold, silver, palladium, platinum, indium, glass and fire-proof bricks.

### ● Gold

Amount of CO<sub>2</sub> emitted from mine production 100%

Amount of CO<sub>2</sub> emitted from our company's recycling production 14.3%

## 5. Results of Saving Fossil Fuels

**7.0 thousand tons/year**

By effectively utilizing the thermal energy retained by waste (waste oil, waste plastics, etc.) for the incinerator we are able to reduce the fuel (heavy oil) needed for incineration.



Kitakyushu Hibiki Plant

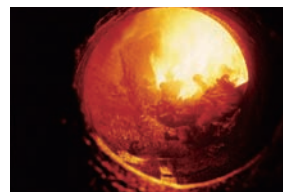


Kitakyushu Plant

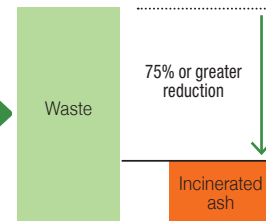
## 4. Results of Minimizing the Final Disposal Volume

**Waste reduction volume: 27.1 thousand tons**

The final disposal volume (landfill disposal) can be reduced by incinerating waste.



Treatment by incineration



## 6. Reduction of External Environmental Burdens

**665.3 tons/year**

We are making efforts to reduce environmental burdens created outside of the company, such as by cutting back on the amount of materials purchased (chemicals, printing paper, etc.) and changing the route for outsourced transportation of wastes. The effects are converted into the volume of CO<sub>2</sub>.

Subject	Content	Amount Reduced
Raw chemicals	Reducing chemicals by 571t.	249t/year
PPC paper	Managing copying and PC printing via software; reducing 854,000 sheets of A4 paper.	1.36t/year (forest resource: 0.85t)
Transportation route	Altering final disposal site and changing the transportation route from Tokyo » Kita-Kyushu to Tokyo » Chiba and Fukushima.	415t/year (ship/car fuel: 160kl)

# ENVIRONMENTAL MANAGEMENT

## Environmental Policies

We will contribute to the environmental protection of the earth and establish a sound material-cycle society through the company's businesses on recycling of precious and rare metals and industrial waste treatment.

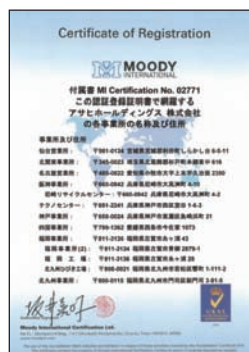
- (1) In all business activities we will strive to conserve resources and energy and reduce, reuse, and recycle waste to minimize the environmental burden.
- (2) We will promote the recycling of resources of precious and rare metals to achieve a more effective use of the limited resources of the earth.
- (3) We will adequately and safely perform our operations for the collection, transportation, and treatment of industrial waste to prevent environmental pollution.
- (4) We will prioritize a harmonious coexistence with nature and regional communities. We will strictly follow the relevant environmental laws and regulations and other requirements which we recognize.
- (5) We will establish environmental objectives and targets and periodically review them to continue improving our activities.
- (6) We will educate all our employees and increase their environmental awareness as members of the community, promote their understanding of environmental protection activities, and participate in such activities.

These environmental policies shall be conveyed to all of our employees and all those working for the company and announced to the public as our commitment.

## ISO14001 Approval

The Asahi Holdings Group has obtained comprehensive ISO approval for the 10 centers including the 6 large centers of Asahi Pretec.

In addition, 4 companies and 7 centers related to Japan Waste have also individually obtained the approval.

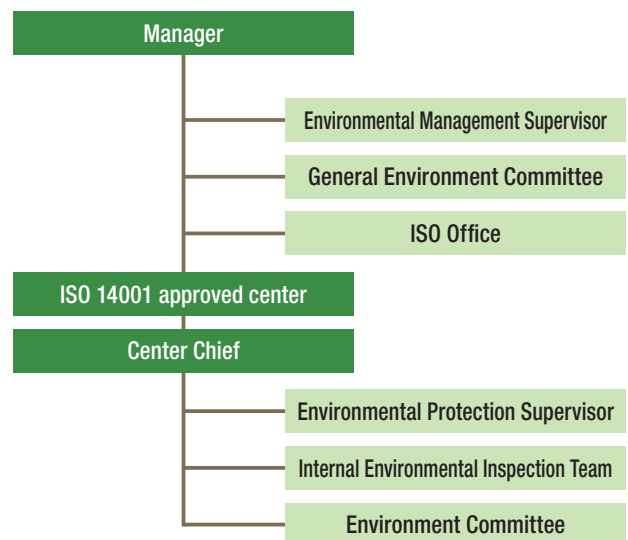


ISO14001 Authentication Certificate

## Environmental Management Promotion System

Our “Company-wide Environmental Purpose/Goal (annual plan)” is devised based on the Environmental Policy that establishes our environmental protection philosophy.

With this established, the business offices which have acquired ISO 14001 approval, set the “Center Environmental Purpose/Goal (annual plan)” and implement environmental protection activities closely related to their business tasks. Furthermore, the Environment Committee of each center abides by the regulations set by the environmental law, revises plans and examines environmental education, etc. and provides reports to the management. While the ISO Office controls the environmental management system (EMS), an environmental protection supervisor is assigned for each business office as an aim to implement thorough promotion of environmental activities.



## ISO14001 Environmental Audits

Regular inspections are carried out on the state of compliance with specifications by an external examining authority for ISO14001 activities. Moreover, internal environmental audits are conducted at least once a year at business sites in order to ensure that EMS is being properly administered.



An internal environmental audit