

TAKUMA

2010 Corporate Overview & CSR Report



**Value Technology,
People,
and
the Earth**



Takuma Co., Ltd.



■ Editorial Policy
This fiscal year, we have prepared this document as a combined Corporate Overview and CSR Report with both a guide to our corporation and a report on our CSR activities. Moreover, we have also extended the coverage of this report to include group companies.

■ Publisher
General Affairs Department, Corporate Service Division
CSR Department, Compliance & CSR Promotion Division
Takuma Co., Ltd.

■ Data Collection Period
From April 1, 2009 to March 31, 2010 in principle
In addition, some activities in fiscal 2010 are included.

■ Coverage
Takuma Head Office, Business institutions, Harima Factory, and some group companies
(Nippon Thermoener Co., Ltd., Takuma Technos Co., Ltd., Hokkaido Sanitary Maintenance Co., Ltd., Takuma Technos Hokkaido Co., Ltd., Sun Plant Co., Ltd., Takuma Engineering Co., Ltd., Takuma System Control Co., Ltd., Dan-Takuma Technologies Inc., Kyoritsu Setsubi Co., Ltd., Kankyo Sol-Tech Co., Ltd., Takuma Plant Service Co., Ltd., KAB Takuma GmbH, Bioener ApS, Taiden Environtech Co., Ltd., and SIAM Takuma Co., Ltd.)

■ Time of Issue:
Current issue: June 2010
Next issue: Scheduled for June 2011
Last issue: June 2009

CONTENTS

Editorial Policy / Contents	1
Message from the Top Management	3
Business Summary	5
Corporate Information	8
Group Company Overview	9
Dialogue with Stakeholders	10

Topics

Topic 1	Efforts for DBO Projects	11
Topic 2	Kyoto Biocycle Project	15
	The Demonstration Test on Gasification Methanol Synthesis	17
	High-Efficiency Methane Fermentation Technology Development	19

Management Structure

Company's Motto / Management Principles / Mid-Term Management Plan	21
Corporate Governance	22
Business Continuity Plan (BCP)	24

CSR Report

The CSR of Takuma	25
CSR Activities	27
Activities That Contribute to Society	30
Working with Our Stakeholders	32
Working with the Global Environment	33
Working with Our Customers	35
Working with Our Shareholders / Working with Our Suppliers	36
Working with Our Employees	37

Environmental Report

Basic Environmental Policy / Environmental Objectives	41
Our Approaches toward Reducing the Environmental Load	42
Environmental Management	43
Environmental Accounting / Environmental Efficiency	44

Outside Expert Opinion

Outside Expert Opinion about Takuma's 2010 CSR Report	45
Response to the Outside Expert Opinion	46



Message from the Top Management

Industrial activities in Japan began fiscal 2009 facing a severe business environment with a recession that had deepened since the Lehman Shock. In the first half of fiscal 2009, business results worsened across-the-board as private-sector equipment investment stagnated and factories operated far below capacity. The business of our group also suffered considerably. In the second half of fiscal 2009, with government economic policies taking effect and the economies of China and other emerging nations recovering, signs that the overall economy had recovered slightly began to appear.

However, the outlook for the economy is still unclear, and some fear further economic stagnation ahead due to financial instability in Europe. I believe that difficult economic conditions will continue for some time.

Our corporate business results had been worsening for a few years, and we have fallen into an extremely difficult state as a company. However, through the continued unified efforts of all our employees, we have finally reached the beginning of improved business results, and our operating income and ordinary income became positive in the consolidated statements of operations for fiscal 2008, the last fiscal year of the previous Mid-Term Management Plan.

Steady implementation of measures to achieve the goals of our Mid-Term Management Plan

As we continue to recover in fiscal 2009, which is the first year of the current 9th Mid-Term Management Plan, in addition to increasing operating income and ordinary income, our net income for the period was also positive. This was achieved due to the diligent efforts of our employees to this point, including measures to reduce costs and implement thorough risk management. The current Mid-Term Management Plan has begun well, and I believe that this is proof that our company business results are steadily recovering.

Of course, in order to achieve the final numerical targets of the current Mid-Term Management Plan, we must completely implement the measures and action plans that are currently in progress. However, I also want us to always be thinking about what we should do now and how we should prepare for the future.

In particular, orders for the construction of new waste treatment plants, which is one of the core businesses of our corporate group, is extremely important. We must thoroughly analyze bids that we lose, evaluating what the strengths of the winning bids were, and we must also establish risk management systems, which will contribute to winning future bids.

Thorough legal compliance

A Fair Trade Commission judgment determined that our waste incineration facility construction business was in violation of antitrust laws in the past. We fought to have this ruling revoked, but the Supreme Court rejected our appeals, confirming the decision in October 2009, and the Ministry of Land, Infrastructure, Transport and Tourism ordered us to stop business in February 2010.

I would like to sincerely apologize again for the great trouble and concern we have caused to the many people involved. We take this punishment very seriously and we are striving to further strengthen our systems for legal compliance to prevent activities that might violate the law from ever occurring again. Our company is united in endeavoring to restore your confidence in us as quickly as possible.

Responses to global warming and climate change

In 2009, Prime Minister Hatoyama proposed that Japan would “reduce greenhouse gas emissions 25% from the 1990 fiscal year level by 2020.” Global warming and climate change are occurring at a planetary level, and we can say that the demands for countermeasures from every country are favorable for our business.

The strengths of our company are in our environmental divisions, which are backed by a long record of results, particularly in power generation from waste and biomass enabled by our combustion technologies. By, for example, increasing the efficiency of power generation using waste and biomass, the amount of carbon dioxide emissions that can be reduced is extremely large. For this reason we can say that the products of our group truly meet the demands of society.

Moreover, equipment that contributes to the reduction of carbon dioxide emissions in the construction of new waste treatment facilities were added to the system of grants for establishing a recycling-oriented society in Japan in April 2008. Then, the same types of upgrades to existing facilities were also included in grants coverage in April 2009. As a result, plans for high-efficiency power generation from waste, which contributes to reducing carbon dioxide emissions, have accelerated. Given the number of waste treatment plants, and that we have the top share in this field in Japan, we can say that great business opportunity has arrived.

In addition, we have been participating in the Kyoto Biocycle Project.*¹ With increasing the use of local fuels as a core goal, by making the necessary raw materials more ecological and by reusing byproducts, this project seeks to improve the effectiveness of global warming countermeasures synergistically. For this purpose, we have sought to build and apply a comprehensive system of technologies to recover energy and materials from the utilized biomass, which is unique to the area, and we have established technologies necessary to realize its practical implementation.

By further advancing research to provide carbon

dioxide reduction solutions for new and existing waste treatment facilities and to identify and utilize biomass that has not been yet put to use, we are striving to contribute to the prevention of global warming and the realization of a low-carbon society.

Contributions to society

Striving to preserve the global environment through our corporate business activities is indispensable. Having established a Basic Environmental Policy for application in our business activities, we have also set quantitative environmental objectives and are working to conserve energy and resources. Based on the ideals in the founding spirit of our company, which is to provide “Service to the nation through boiler manufacturing,” we will continue to contribute to society by combining diverse technologies and business resources to provide a variety of products that are good for the environment and that meet the needs of the modern age.

Moreover, we support the principles of the UN Global Compact*², which we have been participating in since 2006. We will continue to confront issues related to human rights, labor, the environment and anticorruption as we advance our business.

For a corporation to fulfill its social responsibilities, communication with diverse stakeholders is important. I believe that this report will be one effective tool for this purpose. Since I want to give close attention to your feedback in order to prepare CSR reports that are even easier to understand in the future, I would be very grateful to receive your unreserved opinions and advice.

*¹ See page 15 of this report.

*² See page 27 of this report.

June 2010
Takuma Co., Ltd.

Hajime Tejima
President and CEO



Business Summary



Resource recycling center



Energy from Waste plant

Ordinary waste treatment plant

We support the realization of a recycling-oriented society using advanced waste treatment technologies that meet the needs of local communities.

- Energy from Waste plants
- Pyrolysis gasification and melting plants
- Resource recycling and collection plants
- Bulky garbage crushing plants
- Incineration ash and fly ash melting plants
- Waste to solid fuel conversion plants
- Transition and intermediate processing plants
- Raw fuel (biogas) recovery plants
- Various types of pollution prevention equipment



Biomass power generation boiler



Gas turbine package

Energy plants

Takuma's core technologies are utilized in various types of boilers, starting with biomass fuel boilers, as well as total systems.

- Water tube boilers
- Waste heat recovery boilers
- Biomass fuel boilers
- Monotube boilers
- Power generation plants
- Gas turbine cogeneration plants
- Fluidized bed boilers

Environmental technologies

We contribute to the effective use and recycling of resources.

Takuma technologies are contributing to the realization of a sustainable society while valuing the cycles of nature. These contributions include "material recycling," which is the effective use of waste produced by daily living and business activities, and "thermal recycling," which is power generation from heat recovered from incinerated waste, as well as "minimum emissions," which is the purification and reuse of dirty water and the volume-reduction and detoxification of remaining sludge to reduce burdens on the environment. Furthermore, new technologies convert thinned wood, livestock excretions and other matter into useful biomass fuel.

Value Technology, People, and the Earth

Supporting lifestyles and at Takuma, with combustion technologies are water treatment technologies, environmental while focusing on people's lifestyles In order to help solve environmental problems, our and energy fields, including countermeasures a planetary scale, and to contribute to the

supporting the environment— at the core of our business, we have created equipment and a variety of other technologies, and the global environment. desire is to provide new value in the environment for global warming, which is a problem on realization of a recycling-oriented society.

Energy technologies

We promote high-efficiency energy use.

Our desire is to continue creating harmony between energy plants, which are indispensable as sources of heat and power for modern society, and people's lifestyles and the global environment. As a boiler pioneer, at Takuma, we have contributed to industry through our high-efficiency energy plants, which use energy resources with great care, and our clean processing technologies. In the future, as we actively strive to prevent global warming by reducing the amount of CO₂ emissions, we will continue to support the development of a recycling-oriented society.



Industrial waste treatment plant

Industrial waste treatment plant

Using advanced incineration technologies, we can even treat toxic substances suitably and we are supporting the environmental protection efforts of industry.

- Industrial waste treatment plants
- Various types of recycling plants



Continuous up-flow sand filter

Water treatment plant

We are working to purify dirty water with a holistic perspective through a "dialogue with water."

- Sewage and wastewater processing plant
- Various types of advanced sewage processing plants
- Sludge processing plant
- Biogas plant
- Plants to process water that infiltrates final disposal sites



Purification of park pond water

General-purpose boilers

As the convergence of Takuma combustion technologies, our boilers are a reliable brand that has earned the support of a wide range of industries.

- Once-through boilers (Eqos, Super Eqos)
- Vacuum-type hot water heaters (Vacotin heater)
- Package water-tube boilers
- Smoke tube boilers (RE boiler)
- Heat-transfer oil boilers (thermoheater)
- Radiation heating equipment (strip heater)
- Various equipment for ships

Note: These products are handled by Nippon Thermoener Co., Ltd., which is one of our group companies.



Vacotin heater



Thermoheater



Super Eqos



RE boiler



Plant that generates power from industrial waste and provides heat to a plantation

Research and development system

We are advancing technologies for harmony and coexistence with nature. Our numerous development projects are realizing results.

In this age in which all humanity confronts the shared issues posed by environmental problems, the establishment of new technologies that support a recycling-oriented society is desired. At Takuma, carrying on the spirit of innovation of Tsunekichi Takuma, our founder, we have always delivered to the market technologies and products that meet the needs of society, from the energy industry to our daily lives, as well as those that respond to environmental problems on a global scale. Focusing on minimum emissions and maximum recycling, based on our original ideas and the technical prowess that we have accumulated thus far, we will continue to pursue diverse development projects and contribute to the realization of a recycling-oriented society.

Developed products

● Plant for hydrogen and methane fermentation from shochu liquor lees



We have developed a unique technology that uses microorganisms to extract gas fuel from shochu liquor lees, which had been disposed of in the ocean until now.

Note: This received the Japan Machinery Federation President Award in the 30th Energy-Conserving Machinery Awards. (Please see the related article on page 30.)

● Sewage sludge gasification power generation facilities



We have developed technologies to generate electricity from sewage sludge, which had not been used as fuel before now.

Note: This received the fiscal 2009 Japan Institute of Energy Award (Technical Session). (Please see the related article on page 30.)

● Equipment for the conversion of waste oil into light oil



This is new technology that converts waste oil into light oil, allowing it to be used as automobile fuel without further processing.

● Gasification methanol synthesis facilities



This technology creates methanol, which is a type of alcohol, from wood and similar materials that had not been used before.

Note: This is described in detail in the section on the Kyoto Biocycle Project on pages 15–18.



Production system Harima Factory

This advanced production facility focuses on the manufacture of boilers, but also functions to handle overseas procurement and is the location of a variety of test plants.

While focused on the manufacture of boilers, the Harima Factory has production facilities for continuous up-flow sand filters, stokers for waste incinerators, and large-scale machinery, as well as a plant dedicated to compact heat exchangers. This factory also functions as a base for packaging and servicing gas turbines for cogeneration and is the location of various test plants for research and development use. Furthermore, in addition to employing our extensive experience and high-level manufacturing technologies, we have also established comprehensive functions as an overseas procurement base at this factory in recent years, and it is responding to the diverse demands of our customers.

Corporate Information

Company outline

Company Name:	Takuma Co., Ltd.	Number of employees (non-consolidated):	749 (as of March 31, 2010)
Head office location:	2-2-33 Kinrakuji-cho, Amagasaki, Hyogo 660-0806 Japan	Number of employees (consolidated):	3,283 (as of March 31, 2010)
Representative Director:	Hajime Tejima, President and CEO	Business places:	Head Office (Amagasaki City, Hyogo Prefecture), Osaka Office (Osaka City), Tokyo Office (Chuo Ward, Tokyo), Hokkaido Branch (Sapporo City), Tohoku Branch (Sendai City), Chubu Branch (Nagoya City), Hokuriku Branch (Kanazawa City), Kyushu Branch (Fukuoka City), Taipei Branch (Taiwan), London Branch (United Kingdom), Energy & Environmental Research Center (Takasago City, Hyogo Prefecture), Harima Factory (Takasago City, Hyogo Prefecture)
Date Established:	June 10, 1938		
Capital:	13,367,457,968 yen (as of March 31, 2010)		
Main business areas:	Design, construction and superintendence of a wide variety of boilers, plant machineries, pollution prevention plants, environmental equipment plants, and heating and cooling equipment and feedwater/drainage sanitation equipment and facilities Design, construction and superintendence of civil, architecture and other works		

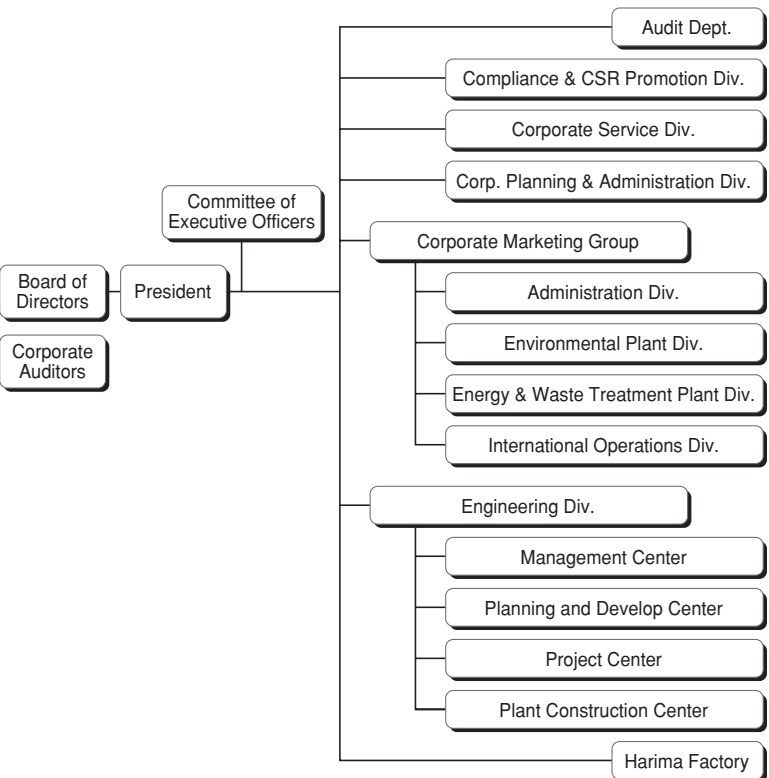
Permits and registrations

<Head office, branch offices and other business offices>
Construction license (Minister of Land, Infrastructure, Transport and Tourism license, Special 17-6129)
Construction consultant registration (Minister of Land, Infrastructure, Transport and Tourism registration, Construction 21-9335)
First-class architect office registration (Governor of Hyogo Prefecture, 201793)
ISO9001 quality management system certification

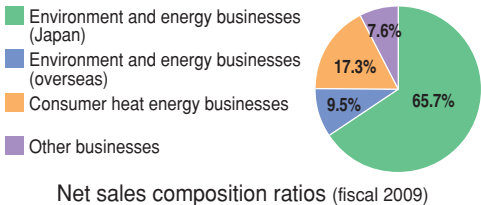
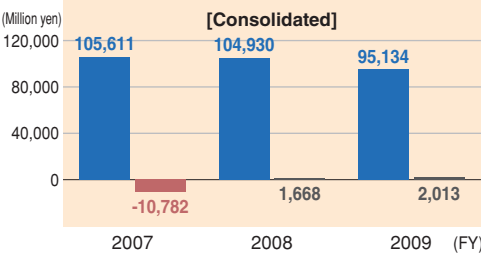
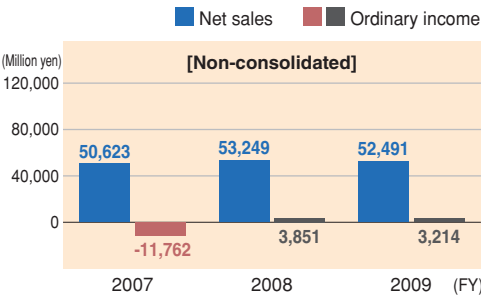
<Harima Factory>
ISO9001 quality management system certification
ISO14001 environmental management system certification
Manufacture of thermal equipment for power generation (Ministry of Economy, Trade and Industry)
Permission to manufacture boilers and pressure vessels, permission to manufacture cranes (Ministry of Health, Labour and Welfare)
Private product certification standards related to the welding of manufactured electrical goods (thermal power) certification (Japan Power Engineering and Inspection Corporation)
Certification for the manufacture of boilers and first-class pressure vessels (Nippon Kaiji Kyokai)
Manufacture of specific high-pressure gas facilities (the High Pressure Gas Safety Institute of Japan)



Corporate structure



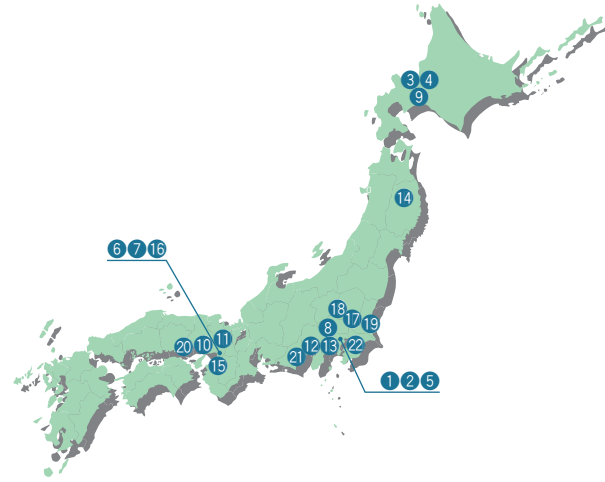
Balance sheet overview and net sales composition ratios



Group Company Overview

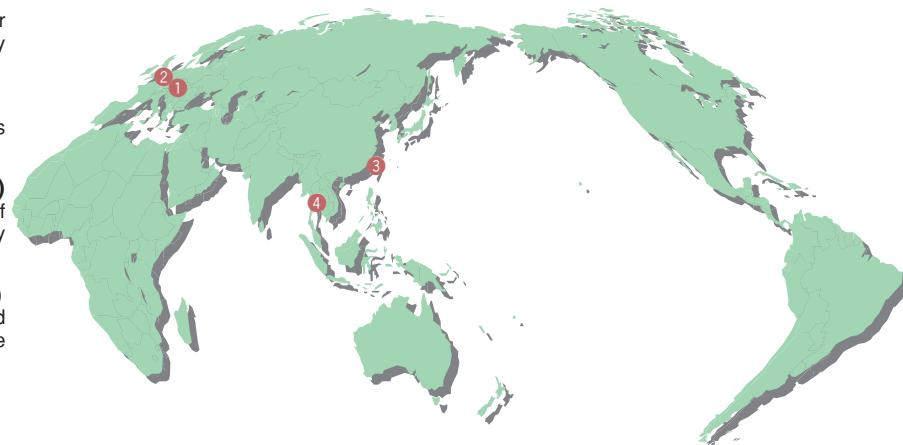
Group companies in Japan

- 1 **Nippon Thermoener Co., Ltd.**
Sale of a wide range of boilers and related equipment
- 2 **Takuma Technos Co., Ltd.**
Maintenance, management and operation of waste treatment facilities, excreta processing facilities and other facilities, as well as the design, installation and management of various types of boilers, environmental equipment and other equipment
- 3 **Hokkaido Sanitary Maintenance Co., Ltd.**
Operation and maintenance of sewage treatment facilities
- 4 **Takuma Technos Hokkaido Co., Ltd.**
Operation and maintenance of waste treatment facilities
- 5 **Sun Plant Co., Ltd.**
Design, construction and superintendence of air-conditioning equipment, feedwater/drainage sanitation equipment, electrical equipment and environmental sanitation equipment
- 6 **Takuma Engineering Co., Ltd.**
Design of environmental equipment plants and energy plants
- 7 **Takuma System Control Co., Ltd.**
Design of electrical instrumentation equipment, including environmental equipment plants and energy plants
- 8 **Dan-Takuma Technologies Inc.**
Manufacture and sale of clean equipment, cleaning equipment, chemical filters, clean rooms, drying equipment and thermal chambers
- 9 **Kyoritsu Setsubi Co., Ltd.**
Design, construction and superintendence of Energy from Waste plants, mechanical equipment of sewage treatment facilities, boiler plants for general industries
- 10 **Kankyo Sol-Tech Co., Ltd.**
Analyzing and measurement for environmental related issues, including water quality, exhaust gas and land pollution
- 11 **Campo Recycle Plaza Co., Ltd.**
General and industrial waste treatment service
- 12 **Nagaizumi High Trust Co., Ltd.**
Facility upgrading, operation and maintenance for general waste final disposal sites
- 13 **Fujisawa High Trust Co., Ltd.**
Operation and maintenance management of general waste treatment facilities
- 14 **Iwate-Kenpoku Clean Co., Ltd.**
Industrial and general waste treatment service
- 15 **Energy Mate Co., Ltd.**
Sale of cogeneration system and system for the generation equipment of the same and total service for onsite energy system for consumer use
- 16 **Takuma Plant Service Co., Ltd.**
Maintenance of a wide variety of boilers and environmental facilities
- 17 **Biopower Katsuta Co., Ltd.**
Electric power selling using biomass energy from wood fuel chips
- 18 **Tochigi High Trust Co., Ltd.**
Industrial waste treatment service
- 19 **Katsuta Co., Ltd.**
Industrial and general waste treatment service
- 20 **R.B.N. Co., Ltd.**
General waste, including waste home appliances and office automation equipment, and industrial waste treatment service
- 21 **Midac Fujinomiya Co., Ltd.**
General and industrial waste treatment service
- 22 **Ichihara New Energy Co., Ltd.**
Industrial waste treatment service



Overseas group companies

- 1 **KAB Takuma GmbH (Germany)**
Manufacture and sale of waste power plants and biomass power plants, principally involved with woodchips
- 2 **Bioener ApS (Denmark)**
Servicing and maintenance of biomass power generation plants
- 3 **Taiden Environtech Co., Ltd. (Taiwan)**
Design, installation and superintendence of waste treatment facilities and a wide variety of industrial machinery and equipment
- 4 **SIAM TAKUMA Co., Ltd. (Thailand)**
Sale of energy and environmental related plants, parts sale for plants of the same and after-sales service



Dialogue with Stakeholders



Takuma Group Coordinating Committee for Compliance & CSR Promotion

On November 6, 2009, we held a meeting of our Coordinating Committee for Compliance & CSR Promotion at which we reported on the CSR activities of every Takuma Group company and discussed issues that confront the group as a whole.

Codifying treatment methods for industrial waste that results from construction and maintenance



Executive Officer
General Manager,
General Affairs Division
Nippon Thermoener
Co., Ltd.
Kazuo Otsuka

We are codifying treatment methods for industrial waste from machinery and discarded materials, for example, that are produced during boiler installation and maintenance, and we are making efforts to protect the environment. Moreover, we are also making contributions to society by, for example, planting vegetation at our factory and cleaning the neighboring area.

Seeking to spread compliance awareness throughout our production lines



Director
General Manager,
General Affairs Division
Takuma Technos
Co., Ltd.
Shigeru Yamaguchi

In our compliance education, seeking to make every employee working on the line aware, we use materials that are specific and easy-to-understand. Our employees have responded positively, saying, "I felt the company is taking this seriously and the desire to expand compliance awareness."

We are further advancing our CSR efforts as we are spurred on by the Coordinating Committee



Director
Sun Plant Co., Ltd.
Ritsuo Kitagawa

In our history of over 60 years, all our employees have followed the rules and we have operated without problem. As we are spurred on by each company in the Coordinating Committee for Compliance & CSR Promotion, we will continue to further advance our CSR efforts.

Seeking to spread awareness throughout the company and to build risk management in the future



Director
Takuma Engineering
Co., Ltd.
Atsushi Ishihara

Our company is in charge of design and drafting work within the Takuma Group. Awareness of compliance and CSR has finally permeated, and we will seek to build risk management from now.

We undertake CSR activities regularly as the only IT software company in the group



Manager,
General Affairs Section
Takuma System
Control Co., Ltd.
Nobuhiro Takaoka

We are the only IT software company in the Takuma Group. We are regularly conducting CSR activities under the guidance of the Coordinating Committee for Compliance & CSR Promotion.

Investigation items, documents and other materials from the Coordinating Committee are also used effectively in reports to customers



Director
Manager, General
Administration Division
Dan-Takuma
Technologies Inc.
Muneo Ueda

We make use of investigation items and documents from our Coordinating Committee for Compliance & CSR Promotion when we regularly report about our CSR activities in response to the demands of our customers.

Promoting CSR and risk management also supports high-precision analysis and measurement



Department Manager
Kankyo Sol-Tech
Co., Ltd.
Satoshi Ogura

As one member of the Takuma Group, we are endeavoring to promote CSR and risk management in order to always provide measurement and analysis data with high precision.

Developing thorough awareness and undertaking daily activities are important also for relationships of mutual trust with our customers



Manager,
Technical Group
Energy Mate Co., Ltd.
Nobuo Tadokoro

Contracts with our customers are long-term, and we provide regular reports on energy use reduction, for example, to foster and maintain relationships of mutual trust. For this purpose as well, we believe that deepening awareness about compliance and CSR and conducting related daily activities are the most important tasks.

Promoting compliance with a key focus on abiding by laws and regulations as a construction company



Director
Manager, Construction
Department
Takuma Plant Service
Co., Ltd.
Kazuki Honda

Since we are a construction company, we are promoting compliance with the belief that abiding by the Construction Business Law and the Occupational Safety and Health Law are very important points.

Seeking to raise awareness of the group as a whole through regular information exchange and the provision of a place for it



Manager,
CSR Department
Takuma Co., Ltd.
Masakazu Egawa

Having established this type of regular information exchange and a place for sharing it, we are promoting system-building and policies to raise compliance awareness in the entire group, and we are endeavoring to identify and resolve problems related to compliance.

Topic 1 Efforts for DBO Projects

Seeking the development of new Energy from Waste plants for the future

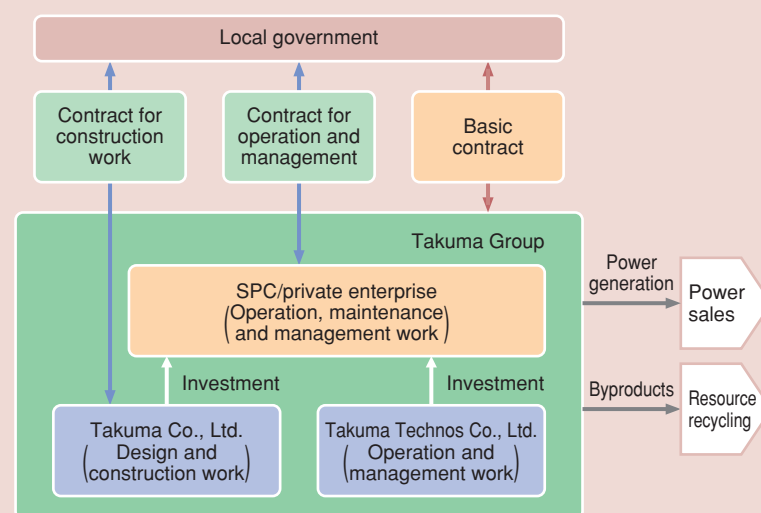
Proposing DBO projects that fit the needs of our customers



As a waste heat boiler pioneer, Takuma carries on the corporate spirit established by our founder, Tsunekichi Takuma, which is to provide “Service to the nation through boiler manufacturing.” We do this by following the principle of “contributing to society through thermal recycling” when proposing DBO projects for waste incineration plants with outstanding environmental performance and high economic efficiency.

DBO projects

Design-Build-Operate (DBO) is one project approach that is similar to the private finance initiative (PFI) project approach in that the public conducts fundraising for the construction of the facility, so the public owns the facility, and private enterprises are commissioned to conduct the design and construction. In the DBO approach, private enterprises are also commissioned to operate, maintain and manage facilities for long periods of time.



Project overview (example)

Reliability realized from an extensive record of experience and achievement

Since we completed the first continuous mechanized waste incineration plant in Japan in 1963, we have gone on to deliver over 330 plants throughout the country. We have the record for constructing the greatest number of this type of plant in Japan. Starting with a facility that has been running for over 40 years, making it the oldest such facility operating in the country, about 140 of our plants are still currently in operation. Among these, about 60 are operated by Takuma Technos Co. Ltd., which is one of our group companies.

Waste incineration technology is said to be a type of engineering that is based on experience, meaning that the accumulation of skills from experience and their utilization is important. In the business of constructing and operating Energy from Waste plants, the application of the PFI approach, which uses private management and technical capabilities, is sometimes said to have inconsistent results that differ according to the accumulation of expertise by a private enterprise based on its experience and record of results.

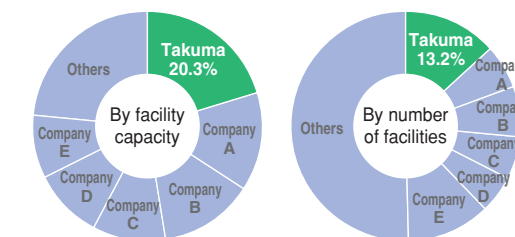
At the Takuma Group, we make use of our abundant experience gained from a record of results that is a half-century long, and we provide the construction and operation of facilities that meet the needs of our customers and inspire their confidence.

Pursuing safe and stable facility operation

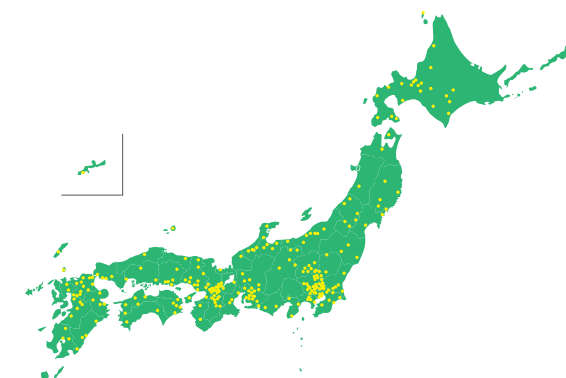
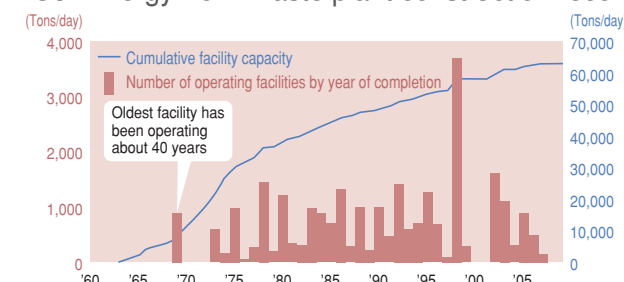
Using our unique combustion technologies, we have realized stable and continuous facility operation that is not affected by variations in waste characteristics and incineration volume.

By maintaining stable combustion, secondary pollution prevention and power generation rates can be improved, durability can be increased and service costs can be reduced.

Energy from Waste plant share in Japan

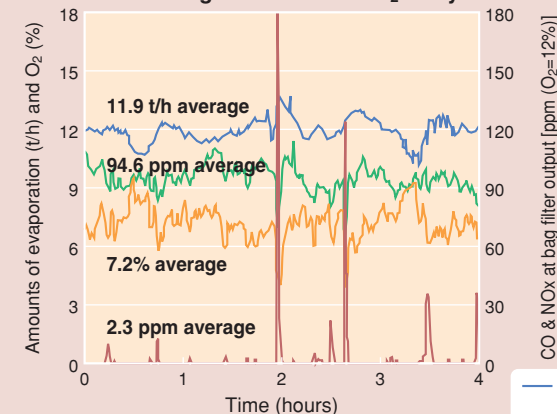


Our Energy from Waste plant construction record



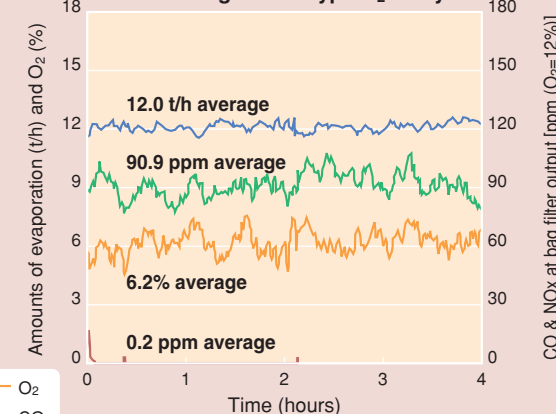
337 facilities in Japan

Control using a conventional O₂ analyzer



Standard deviation of evaporation amount: 0.58 t/h

Control using a laser type O₂ analyzer



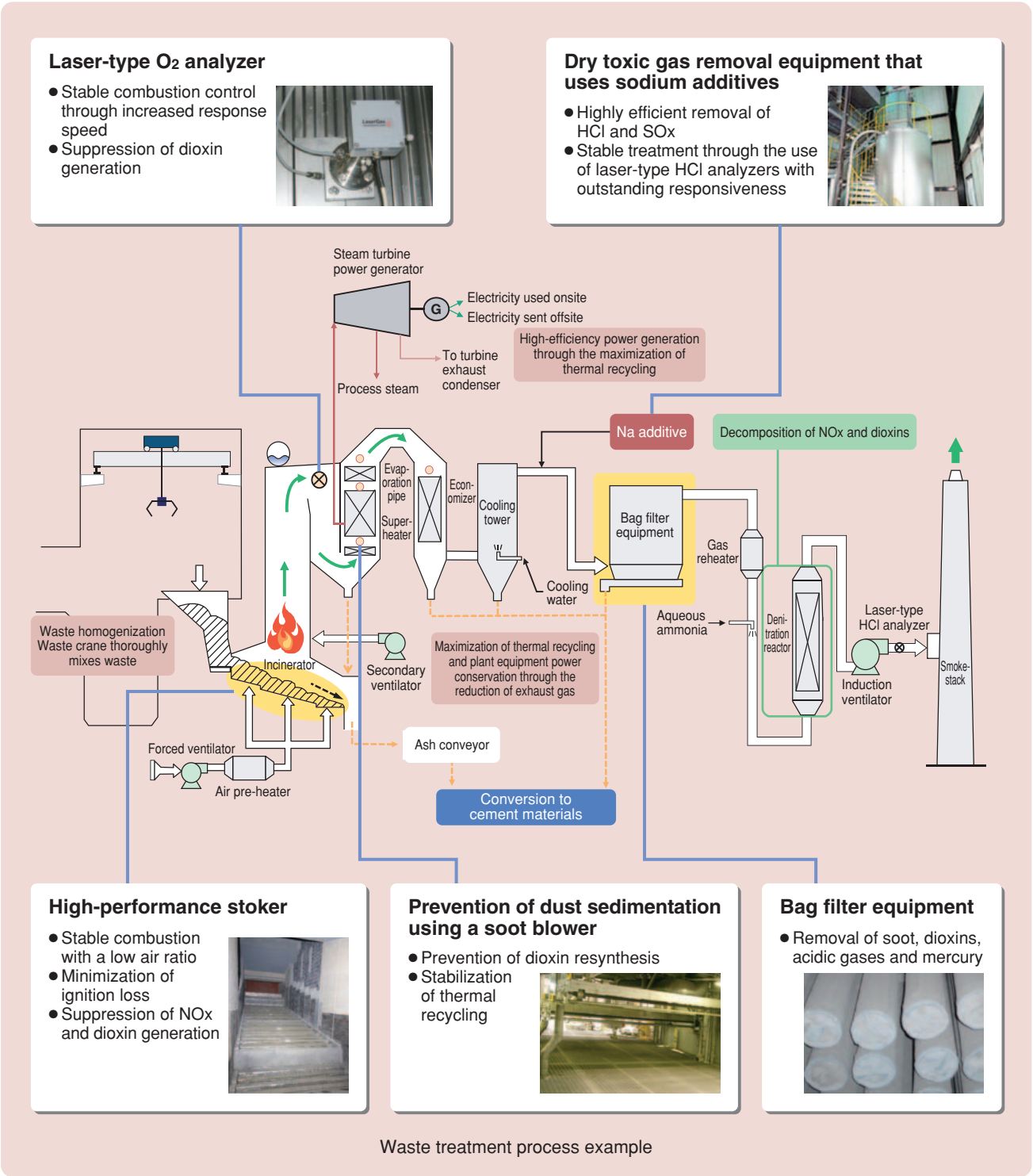
Standard deviation of evaporation amount: 0.22t/h

Stable combustion through the use of advanced combustion control

Minimizing environmental impacts and maximizing thermal recycling

By realizing stable combustion with a low air ratio through the utilization of high-performance stokers and advanced combustion control, we are easily able to achieve continuous operation that consistently meets pollution prevention standards. Moreover, low air ratio combustion reduces the volume of gas emissions, which

makes both energy conservation and high-efficiency power generation possible. As a result, we are able to provide facilities that contribute to reducing the emissions of greenhouse gases and support the creation of a society that recycles resources and uses little carbon.

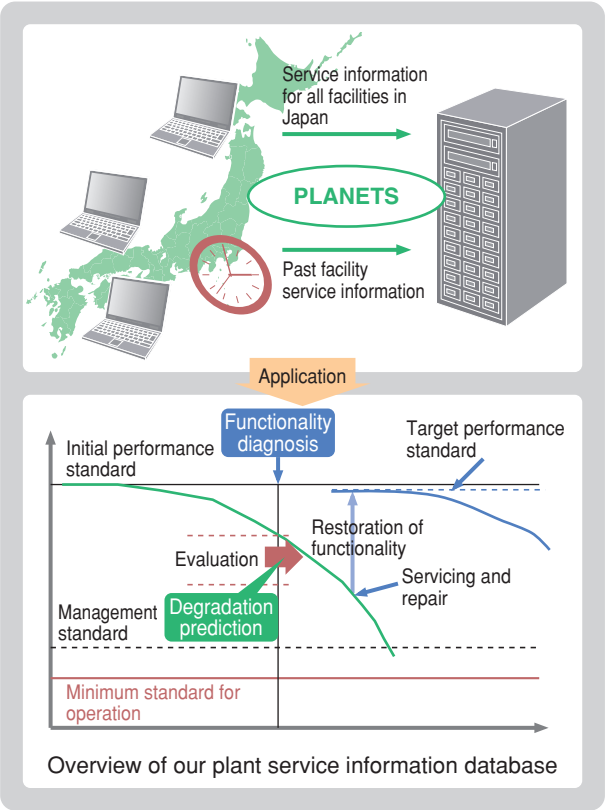
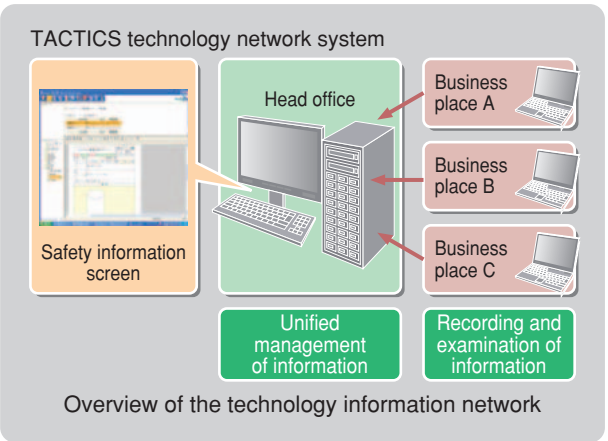


Realization of operation, maintenance and management that provide peace of mind

■ Safe and stable operation
At Takuma Technos Co., Ltd., which has a record of operating, maintaining and managing 60 waste incineration plants, we have established health and safety management practices based on our own Occupational Health and Safety Management System, and we are advancing risk assessment related to facility operation and conducting safety and health education. Moreover, by utilizing a technological information network that connects our operation sites at 60 facilities around the country, we are endeavoring to raise operation and management work standards.

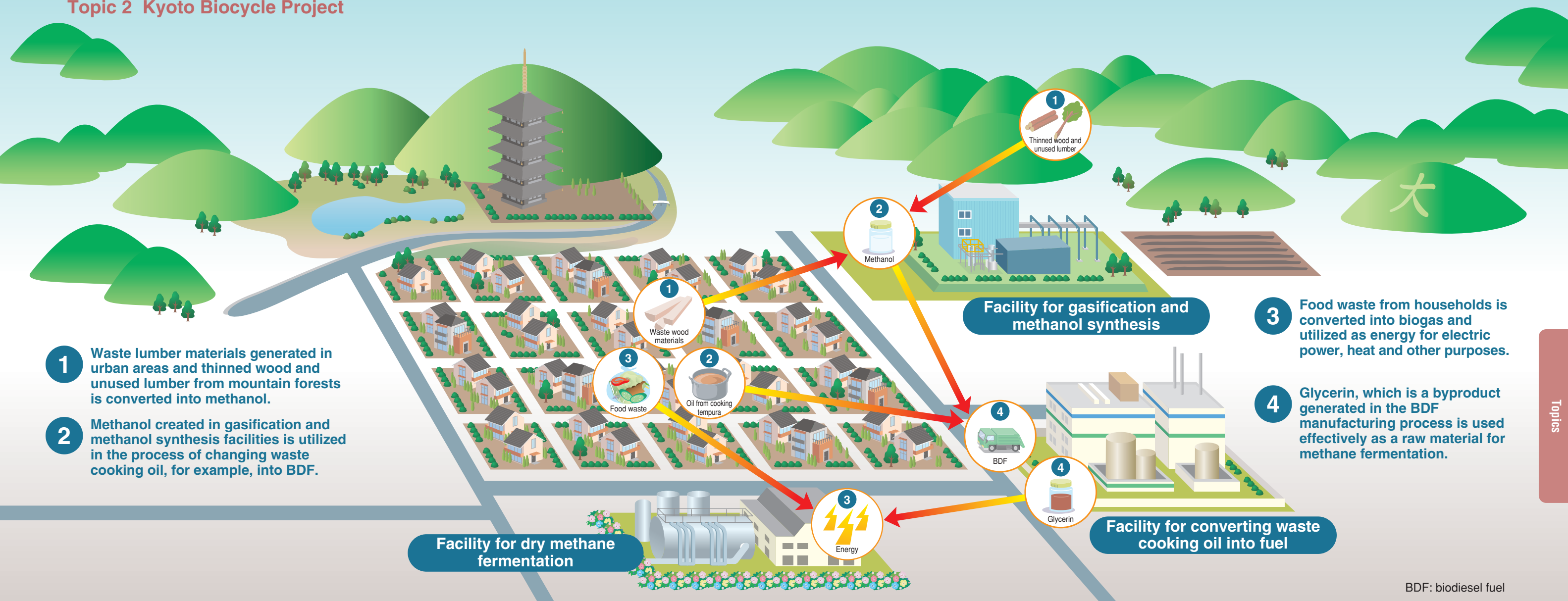
■ Extending the lifespans of facilities
We have placed divisions that are specialized in maintenance and repair throughout the country, and we are utilizing the knowledge that we have accumulated in our own plant service information database. With this, we are actively undertaking stock management that uses this centralized information about the past servicing and repair of facilities.
By diagnosing the functionality of the equipment and machinery that compose a plant, degradation trends can be predicted, and servicing and repair can be conducted in advance before such degradation progresses beyond established management standards. In this way, we seek to extend the lifespans of facilities, as well as realize stable and safe operation that is free from mechanical trouble.

■ Promoting increased quality in operation, maintenance and management
In our head office building, we have constructed a comprehensive operation support system that remotely monitors the operating conditions of facilities via the Internet. By supporting the operation, maintenance and management of facilities in real time and proposing optimal operation plans based on the collection and analysis of data, for example, we are increasing the quality of operation, maintenance and management.



Operation support center in the Takuma Head Office building

Topic 2 Kyoto Biocycle Project



Seeking the creation of a low-carbon, recycling-oriented society

The Kyoto Biocycle Project

The core purpose of the Kyoto Biocycle Project, which is a project commissioned by the Ministry of the Environment to develop technologies for global warming countermeasures, is to convert waste cooking oil from the city of Kyoto into fuel. This project simultaneously seeks to increase the effectiveness of global warming countermeasures by making materials that are necessary for the project more ecological and by reusing its byproducts. Moreover, this project, which involves cooperation among industry, government, academia and citizens, has the goal of creating a comprehensive system of technologies to recover both materials and energy that utilize the biomass specific to the region.

Goals of the project

The city of Kyoto is an international tourist destination and its numerous hotels, inns and eating and drinking establishments generate great amounts of kitchen waste. Moreover, the city has abundant wood resources, including plant trimmings from Shinto shrines and Buddhist temples as well as thinned wood from the area of the city that was formerly known as Keihoku-cho. In 1997, the 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3) was held in Kyoto. Spurred by this,

seeking to create a system for the reuse and recycling of resources in order to contribute to the prevention of global warming, the city has led the nation in a project to make biodiesel fuel and a test project for biogas generation that effectively utilizes biomass from waste cooking oil, kitchen waste and similar materials for energy.

In consideration of these circumstances and local characteristics, the core activity of this project is the conversion of waste cooking oil from Kyoto City and is undertaken in partnership with its citizens. The project

also seeks to make methanol, which is necessary for the conversion, more ecological and reuse the glycerin that is a byproduct. By advancing and making more efficient technologies for the recovery of materials and energy that utilize biomass unique to the region, as well as by building a stable, comprehensive system, the project seeks to contribute to the creation of a sustainable society.

Specifically, these goals will be achieved by developing the following five technologies, and the realization of

effective countermeasures for global warming in the treatment of urban waste will be pursued. This project is being undertaken in cooperation with the Advanced Scientific Technology & Management Research Institute of Kyoto, Kyoto City, Kyoto University and several other companies. Of these technologies, we are participating in ① the development of gasification methanol synthesis technologies in order to make carbon-free BDF and ② the development of high-efficiency methane fermentation technologies.

- ① Methanol is used as a secondary input in the biodiesel fuel production process. By developing technologies to gasify dry biomass, which has low moisture content, and synthesize methanol, methanol derived from biomass can be used to replace industrial methanol derived from natural gas. By synthesizing this "green" methanol that can be generated without the need of petroleum resources, "carbon-free BDF," which is a biodiesel fuel that causes no CO₂ emissions, can be manufactured.
- ② In addition to decomposing glycerin waste liquid, which is a byproduct emitted as a leftover from the biodiesel fuel manufacturing process, through methane fermentation to recover energy from it, we will test the use of kitchen waste that is collected separately from ordinary households as fuel in methane fermentation. Moreover, we will develop high-efficiency methane fermentation

- technologies that incorporate hyperthermophilic solubilization technologies. We will also develop an urban biogas generation system that allows the amount of biogas to be recovered from the biomass in kitchen garbage, paper and other urban waste to be increased and that reduces the generation of residue and liquid waste from fermentation.
- ③ Use fuel cells to utilize the recovered biogas cleanly and with high-efficiency.
- ④ Develop fuel production technologies that allow the use of a greater variety of raw materials, including low-quality fats and oils, in order to expand the adoption of biodiesel fuel manufacturing projects in Japan.
- ⑤ Integrate the series of technological developments and develop systems analysis technologies to promote their further advancement.

The Demonstration Test on Gasification Methanol Synthesis
– A national first demonstration test, making liquid fuel from biomass –

By producing methanol from biomass, we contribute to the reduction of global CO₂ emissions

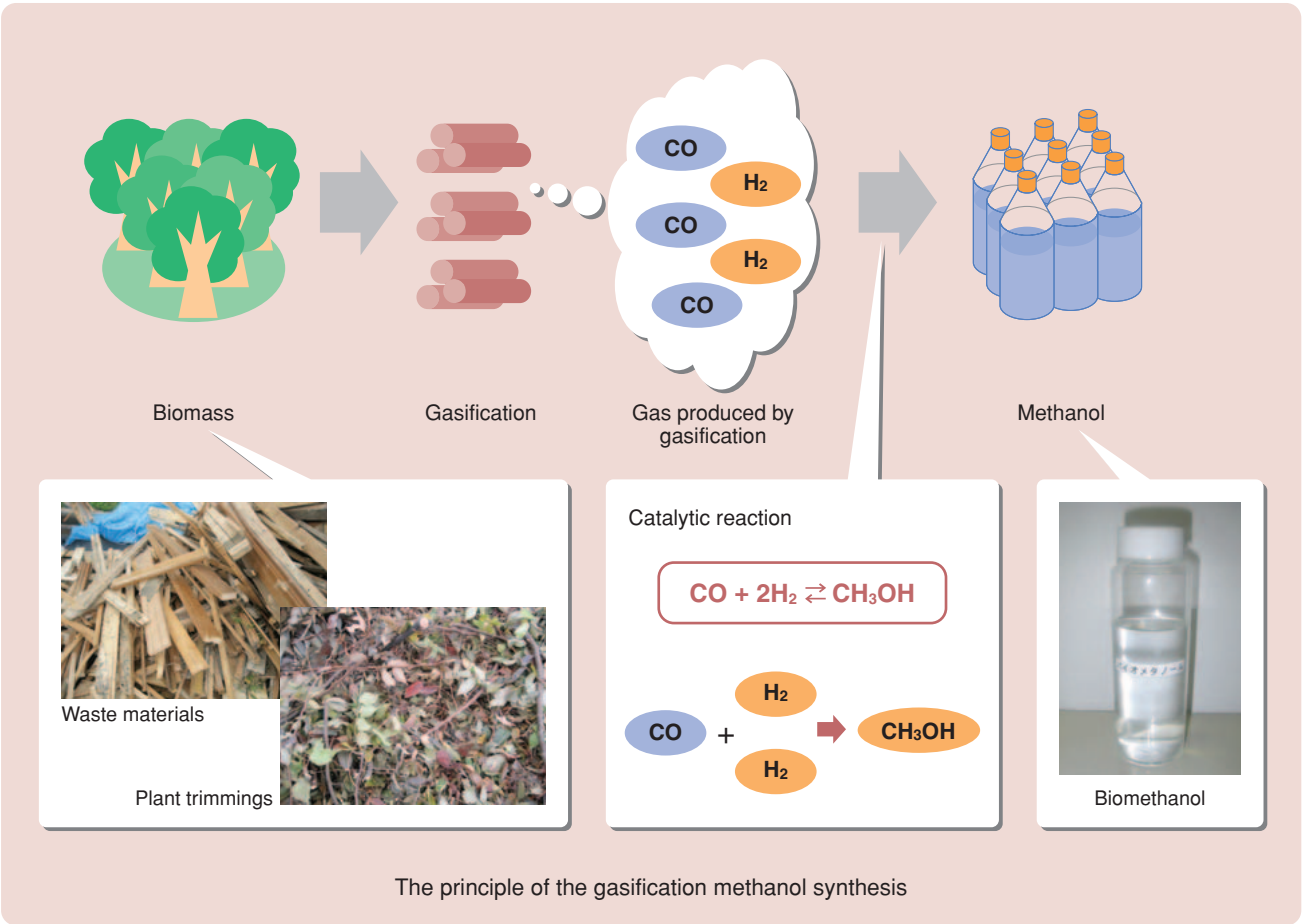
Our company has been working on technologies to convert woody biomass and sewage sludge into fuel gas and conduct high-efficiency power generation, as well as research and development on the synthesis of methanol from fuel gas. Combining these efforts, we have conducted empirical tests to synthesize methanol from woody biomass, and our results have been widely praised.

Development background

Methanol is used extensively as a raw material in the chemical industry, and it is also used for environmental purposes, including in the denitrification process at sewage treatment plants and as a reaction aid in the manufacturing of biodiesel fuel. Moreover, recently it has also come to be used as a fuel in the compact fuel cells used in mobile devices, for example. While it is an industrial material that is indispensable for our lifestyles, currently more than 90% of it is manufactured from natural gas, which is a fossil fuel.

Our company has been promoting the development of

gasification technology, which involves the effective production of gas fuel from biomass, as well as effectively producing methanol from this gas fuel. In fiscal 2007, we launched a demonstration test for gasification methanol synthesis as part of the technology development project on global warming countermeasure by the Ministry of the Environment, with the aim of verifying the effectiveness of this technology and considerable achievements have been made for the latter, such as the utilization of produced methanol as a processing aid for biodiesel fuel (BDF).

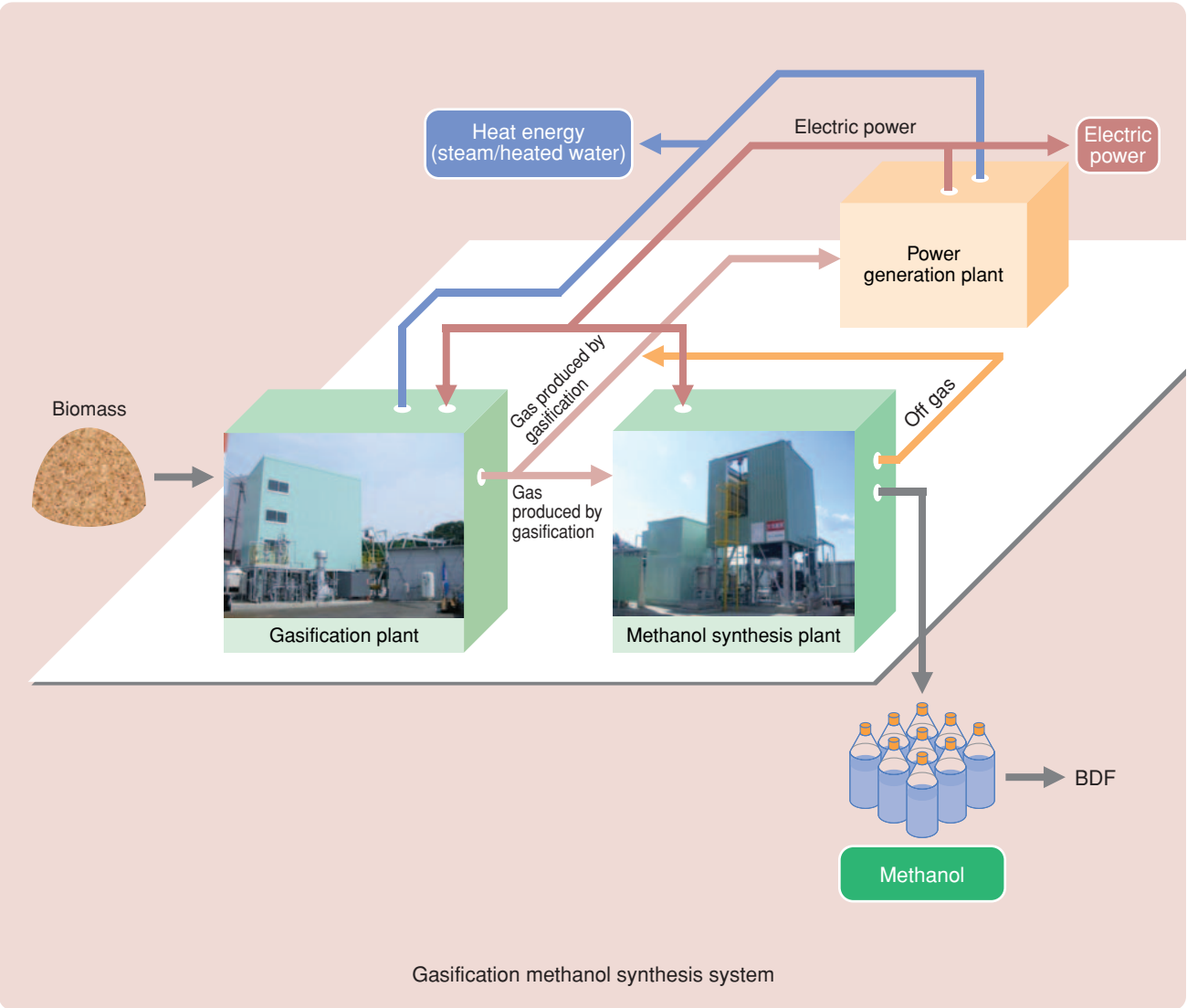


System features

To produce methanol, biomass must first be transformed into gas fuel. Methanol is synthesized from carbon monoxide and hydrogen, which are included in this gas fuel due to the catalytic reaction. Moreover, generating electric power, using gas fuel, which is not used for methanol synthesis, as well as unreacted gas (off gas) after the methanol synthesis reaction, enables plant motive energy to be covered, while supplying electricity to the neighborhood. In addition, since thermal energy for steam and heated water is available from exhaust gas after power generation, we can call this a trigeneration plant—producing the three elements of “methanol”, “electricity” and “heat”. In this system, the

production volume of methanol can be adjusted based on demand, thus significantly enhancing convenience. As well as obtaining three products, trigeneration is a system that can be effectively operated for users.

In our empirical tests, we operated the system for a total of 2,500 hours, including one month of continuous operation, and it produced about 5,000 L of methanol stably. As a result, we have been able to establish gasification methanol synthesis technologies that have been praised highly by diverse evaluators.



High-Efficiency Methane Fermentation Technology Development

– Efficiently recovering energy from diverse organic materials –

Contributing to CO₂ reduction by extracting methane gas from wastes and using it as fuel for power generation

Methane fermentation technologies allow the efficient recovery of energy from kitchen waste and other biomass with high moisture content that is not suitable for thermal recycling. In particular, our Dry-type Methane Fermentation technologies, which are used in the Kompogas process, feature the ability to be applied to raw materials that contain plastics and other materials that are not suitable for fermentation, which are inevitably mixed into urban waste, in a simple preprocessing during urban waste treatment. Moreover, in addition to kitchen wastes, paper materials and plant trimmings can also be used as inputs for methane fermentation, for example, allowing its application to a wide range of materials.

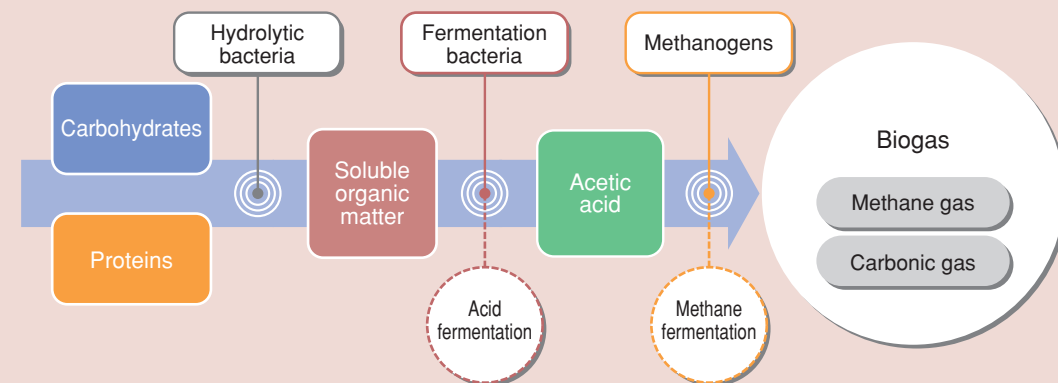
Development background

For one year starting October 1, 2008, the city of Kyoto conducted a “model experiment on the separation and collection of kitchen waste and similar materials” on model areas with about 2,200 households. Each model area was comprised of a neighborhood association with 100 to 200 households, and these areas were selected from every administrative district in the city. This pioneering effort included the collection of not only kitchen waste, but also mixed waste (biowaste) comprised of both kitchen waste and paper scraps, which generates large amounts of biogas. This effort to determine the composition of biowaste actually produced by households and verify that it could be processed stably in our Kompogas process has been extremely valuable for maximizing the effective use of waste as energy in the future.

In addition, Kyoto is manufacturing biodiesel fuel (BDF) from tempura cooking oil and similar substances. Glycerin, which is a byproduct of the manufacturing process for BDF can be used as a raw material in methane fermentation. As a result, we are able to predict

that this will have the effect of improving the effective use of byproducts from BDF production facilities and the biogas collection rate from the methane fermentation process. However, the byproduct glycerin contains large amounts of volatile substances, has a low flash point and can solidify at a low temperature, so it is a material that requires caution in handling.

Taking the above into account in the development of these technologies, we made our main goal to construct and empirically test a high-efficiency biogasification system for urban use. This included safe and stable methane fermentation using various organic materials, including kitchen waste, paper waste and the byproduct glycerin and increasing the amount of biogas generation using high-temperature, dry methane fermentation technologies. Moreover, it incorporated hyperthermophilic solubilization technologies, which increase the efficiency of biogasification by adding a solubilization process at 80°C to methane fermentation that occurs at 55°C, in order to improve the biogas generation rate from the substrate.



Methane fermentation principles

Development results

Separated kitchen waste and biowaste from each household were converted to biogas in the Kompogas process test plant, the composition of the waste collected as biowaste was determined, and continuous operation for one year was demonstrated satisfactorily.

Moreover, we verified that the byproduct glycerin could be stably processed without solidification by managing the storage temperature. We also determined that there was no danger of explosion from flammable elements within the volatile gas during storage. Furthermore, we verified that from each ton of glycerin byproduct about 1,000 m³ of biogas could be derived and used as energy.

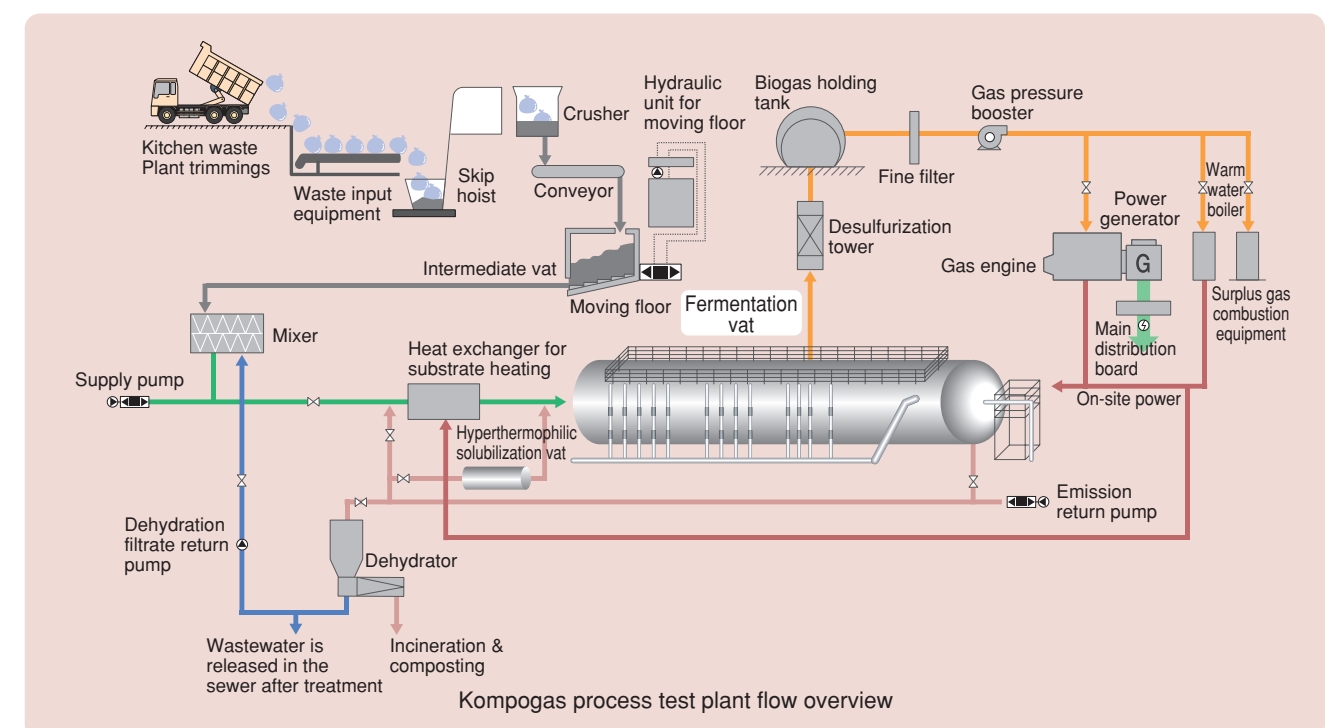
We also achieved higher efficiency in biogas generation with dry methane fermentation that incorporates hyperthermophilic solubilization. We confirmed, for example, increased amounts of biogas generation and achieved three months of stable long-term continuous operation.



Methane fermentation tank



Kompogas process test plant



Kompogas process test plant flow overview

Management Structure

Company's Motto

Value Technology, People, and the Earth

Management Principles

Takuma will strive for social contribution, corporate value enhancement, long-term corporate development and all stakeholders' satisfaction by yielding goods and services needed and recognized as valuables in society.

The founding spirit of Takuma was “Service to the nation through boiler manufacturing”* which in present-day language means “contribution to society by supplying goods and services that we yield”. This spirit can also be applied to the concept of Corporate Social Responsibility (CSR) that in recent years has become a vital issue for corporate management. The management principles of the Takuma group companies are all based on the said founding spirit.

* Service to the nation through boiler manufacturing

It was the mission statement of Takuma, then Takuma Boiler Manufacturing Co., Ltd., founded by Mr. Tsunekichi Takuma, one of the ten great inventors of Japan during the period of Meiji and Taisho (1868–1926).

Mid-Term Management Plan

In April 2009, we instituted the 9th Mid-Term Management Plan (FY2009–2011) and have been implementing the strategies since then.

Basic Policy of the 9th Mid-Term Management Plan

1. Repositioning of Business Units
2. Project Risk and Cost Management Systems
3. Restructuring of European Operations
4. Human Resources Policy Reform
5. Financial Stability
6. Compliance and Risk Management

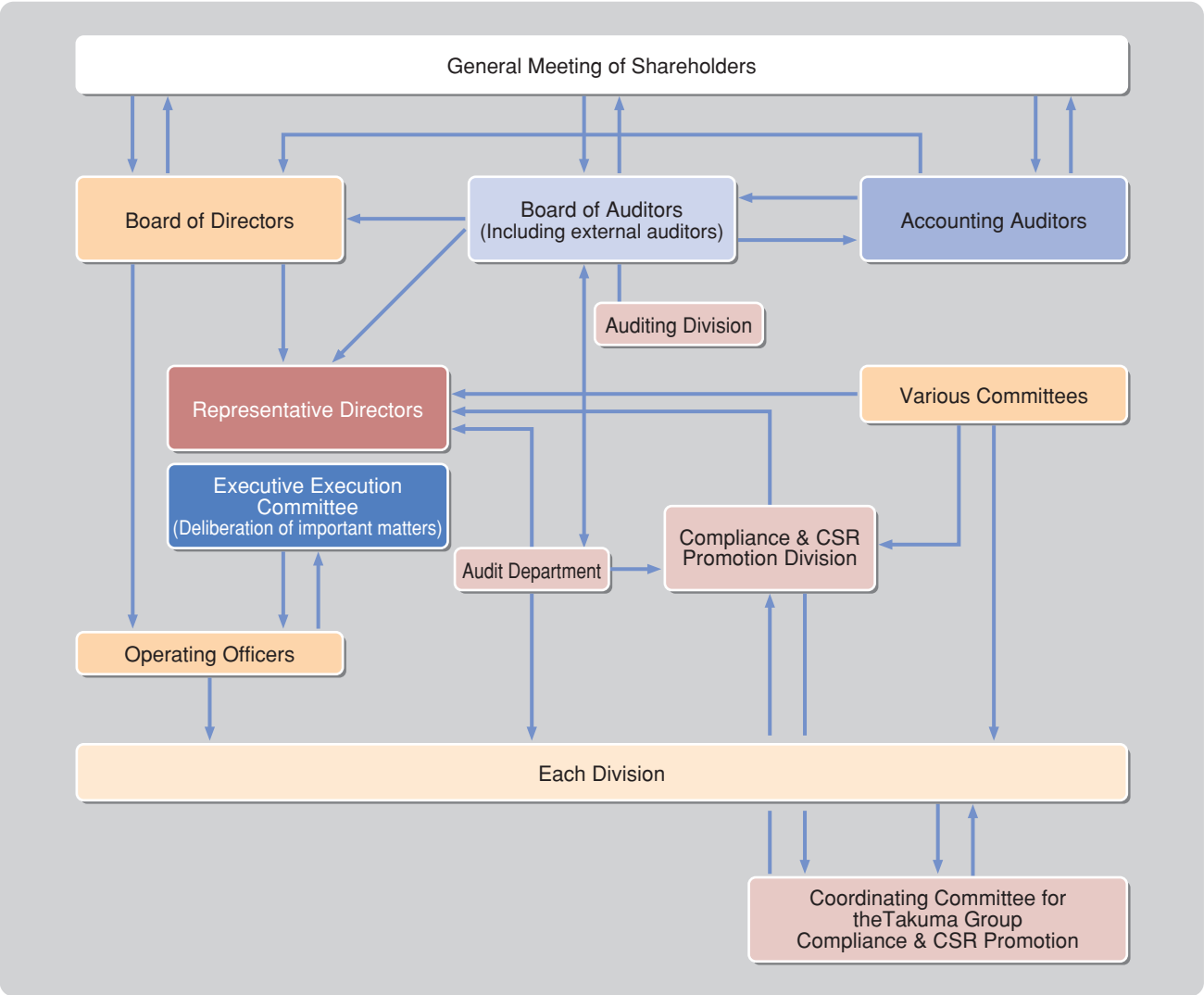
Corporate Governance

In order to accelerate management decision-making and clarify where management responsibilities are placed, we have adopted an operating officer system in which we appoint operating officers who are entrusted with the responsibility to execute our business activities. The Board of Directors meets regularly once a month as a rule and whenever else it is necessary to make decisions about important issues related to business management and issues established by law, as well as to oversee the execution of the directors' duties.

Moreover, we have also established an Executive Execution Committee, which is chaired by the president/ chief operating officer, as an organization that deliberates matters that are brought up at meetings of the Board of Directors and other important issues related to the execution of our business activities. This committee communicates and provides direction about items decided by the Board of Directors and other important items related to the execution of our business activities appropriately to the divisions that are to execute them. As of March 31, 2010, the Board of Directors was comprised of 6 members, and 15 operating officers (including some

who are also directors) had also been appointed.

For corporate auditing, we have adopted an auditor system, and our Board of Auditors, which is comprised of four auditors, including two auditors from outside the company, is in charge of it. Auditors attend important meetings, including those of the Board of Directors and the Executive Execution Committee, and they strive to understand and observe the status of business execution in a timely and appropriate manner. They express their opinions as necessary, and they conduct strict auditing of the business execution performed by the directors. This includes conducting self-assessments and evaluations related to the internal control system by operating officers at the end of each term. Furthermore, they receive reports from accounting auditors and the Audit Department about auditing plans, the status of auditing and other issues and otherwise conduct regular information exchanges. They cooperate together as they do this and undertake auditing of every business place, division and subsidiary company in accordance with the auditing policies, divisions of work and other stipulations established by the Board of Auditors.



The CSR of Takuma

We instituted the Takuma Group Ethics Charter, Takuma Group Code of Conduct and Personal Information Protection Policy and are striving toward the promotion of CSR management.

The Takuma Group Ethics Charter

Takuma and the Takuma group companies believe that it is essential for the sound development of the group that all of the directors and employees remain aware of our social responsibilities and the circumstances surrounding us as well as act in response to social ethics complying with applicable related laws and ordinances. Bearing the above in mind, we have established and will promote this ethics charter as our code of conduct, aiming to realize our management principles.

- 1. We shall strive for a proactive social contribution while establishing a harmonious coexistence with the global environment as good corporate citizens.
- 2. We shall act in good faith in accordance with sound business custom, while complying with applicable laws and regulations and committing ourselves to fair, transparent and free competition, as well as conducting lawful business activities.
- 3. We shall never have any relationship with antisocial forces or such organizations, which may pose a threat to the social order and security of civil society.
- 4. We shall respect fundamental human rights and never practice discrimination.
- 5. We shall strive to provide high quality products and services, based on our advanced technologies, to attain high acclaim and confidence by our customers.
- 6. We shall strive to disclose corporate information to shareholders and investors through investor relations (IR) and other activities on a timely and equitable basis.
- 7. We shall strive to protect corporate properties as well as information, while never using either for improprieties or any unjustifiable purpose other than business operation.

Takuma Group Code of Conduct

- [Harmony with society]

 - 1. Coexistence with the global environment
 - 2. Coexistence with international society
 - 3. Practice of social contribution activities

[Practice of compliance with laws and ordinances as well as sound economic activities]

 - 4. Free competition and fair trade
 - 5. Relationship with politics and public administration
 - 6. Policies concerning business entertaining and gift-giving
 - 7. Prohibition of involvement in anti-social activities
 - 8. Appropriate export and import transaction

[Respect for basic human rights]

 - 9. Prohibition of discriminatory actions
 - 10. Respect of individuality, personal quality and privacy
 - 11. Safe work environment
- [Practice of customer satisfaction]

 - 12. Safety of products and services as well as ensuring reliability
 - 13. Policies concerning advertising

[Making appropriate disclosure of information]

 - 14. Transmission of corporate information
 - 15. Ensuring reliability of financial report
 - 16. Prohibition of insider trading

[Protection of corporate properties and information]

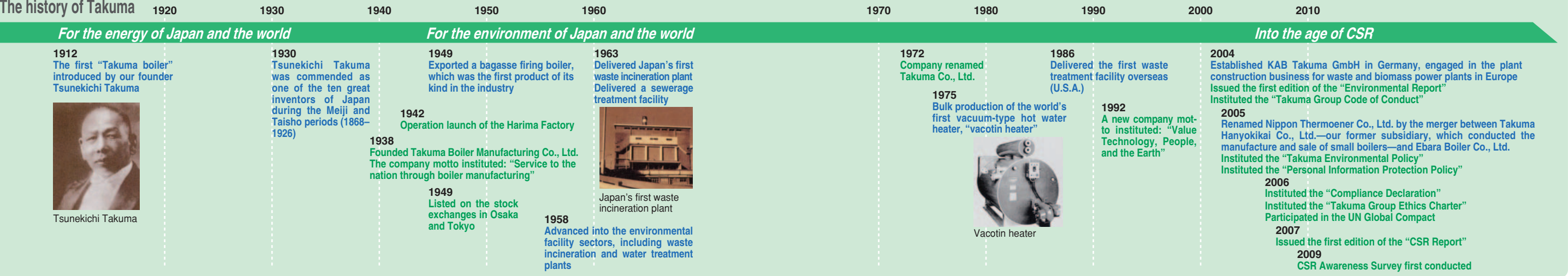
 - 17. Management and proper use of corporate properties
 - 18. Handling of confidential information
 - 19. Intellectual property protection

Personal Information Protection Policy

Takuma Co., Ltd. (hereinafter referred to as Takuma) understands the importance of effectively safeguarding personal information and has implemented the following procedures that are applicable to all personal information handled throughout the course of business operations.

- 1. Takuma will comply with the Act for the Protection of Personal Information and other related laws and ordinances.
 - 2. Takuma will clarify all applicable rules and regulations concerning the handling of personal information, ensure that all employees are made aware of such rules and regulations, and conduct necessary and appropriate supervision of subcontractors that handle personal information supplied by Takuma.
 - 3. When obtaining personal information, Takuma will notify each individual of or publicly announce the intended use of such information. All personal information will be
- handled within the range of its intended use.
 - 4. Should any individual request that his or her personal information be disclosed, revised, supplemented, deleted, canceled, or otherwise processed, Takuma will comply with that request within a reasonable scope and period of time.
 - 5. Takuma will take all necessary measures to prevent the accidental leakage, loss, or tampering of personal information in its possession.
 - 6. Takuma will continuously review and strive to improve the contents of this policy and other internal regulations.

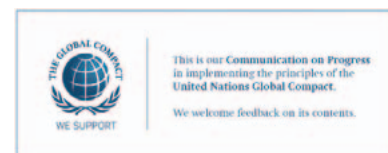
The history of Takuma



CSR Activities

Participation in the UN Global Compact

On November 10, 2006, the Takuma group joined the United Nations Global Compact, pledging to adhere to universal principles covering human right, labor right, the environment and anti-Corruption. The Global Compact is a voluntary corporate citizenship initiative proposed by U.N. Secretary-General Kofi Annan in 1999 at the world Economic Forum. Our company practices a social contribution through the active conduct of business in support of the ten principles.



The ten principals of the UN Global Compact

<Human Rights>

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

<Labour Standards>

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

<Environment>

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

<Anti-Corruption>

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Compliance & CSR promotion structure

Our structure for the promotion of compliance and CSR is used to advance education about our corporate compliance and to foster common awareness about fulfilling our corporate social responsibilities among all employees.

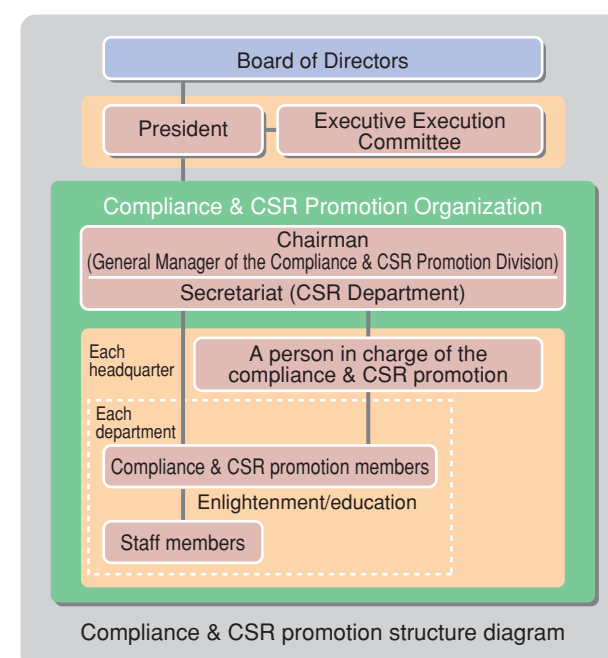
The person responsible for promoting compliance and CSR at each headquarters is the general manager, who verifies the state of education at regular meetings and establishes policies and annual plans, for example. The head of each department acts as a compliance and CSR promotion member. At the Compliance & CSR Promotion Organization Task Force, which is held four times per year, the promotion members attend lectures on educational themes. They then conduct compliance and CSR promotion education in each of their departments.

After conducting such education, they submit reports, attendance lists and the results of answers given to test problems to the Secretariat. Summaries of these are reported at the next Compliance & CSR Promotion Organization Task Force.

The Secretariat responds to questions from the promotion members and provides answers, including consulting with outside sources when necessary. The educational contents of compliance and CSR promotion education are changed each time, but explanations about laws that are particularly important are taught repeatedly as we seek to deepen knowledge of them.

Compliance and CSR promotion education is not

limited to only compliance and the understanding of laws and regulations. In order to make every employee have even higher awareness of the issues, within divisions we conduct lively discussions on important themes and encourage employees to think for themselves.



Fiscal 2009 education themes

(1) Compliance Manual second edition reading and comparison

The Takuma Group Compliance Manual, which has explanations of various regulations related to compliance, was published in 2006. Since then, the Takuma Group Code of Conduct has been revised, and there have also been numerous opinions and questions from employees. In consideration of these issues, we revised the manual in a form that provides explanations and Q&A related to 19 separate conduct standards.

We distribute this manual to every employee. In order to make the contents applicable to their work, the main focus is on problems that arise in daily situations. We also use this manual to explain compliance activities in our educational programs for new employees.

(2) Revisions to the Anti-Monopoly Law

On July 31, 2009, we invited Makoto Tanaka, who is a guest researcher at the Fair Trade Institute of Japan, to give us a lecture about the Anti-Monopoly Law that was revised in June. Executives and department heads attended and listened to his explanation about important areas of revision.



(3) Lectures on CSR from outside experts ● CSR lecture for management staff

On September 25, 2009, we invited Kenryo Hirotsuka, who is the General Manager of the Corporate Social Responsibility Planning Department at TOTO Ltd., to give a lecture on CSR management and risk management.



● Compliance & CSR Promotion Organization Task Force lecture

On October 19, 2009, we invited Toshio Shimamoto, who is the General Manager for CSR Planning in the CRS Promotion Group at Sharp Corporation, to give a lecture on CSR management and risk management.



(4) About stakeholders

Each office or workplace discussed the question, "What types of activities have you undertaken this year for the stakeholders who are important to your office or workplace?" The employees individually expressed numerous types of activities during this opportunity to recognize the close connection between daily work activities and stakeholders.

(5) Thinking about mottos for Takuma compliance

To stimulate thinking about compliance as it pertains to each individual, we called on employees to submit compliance mottos. We received 234 ideas, including many outstanding mottos. Starting in January 2010, we posted every one successively in the elevators of the head office in order to have people understand how our employees think about compliance at Takuma.

<Examples>

- Today, one day at a time – legal compliance and CSR are realized through the accumulation of efforts.
- Protecting compliance protects ourselves.
- Think you are all right? Think again about that assumption.
- Good enough? That way of thinking gets a yellow card!
- Could it be illegal? Don't fret alone. Consult with others.

(6) About intellectual property rights

We provided education about types of patent rights and copyrights and acts that can infringe on them. We explained illegal behaviors that can occur easily using familiar examples, including the Internet and e-mail.

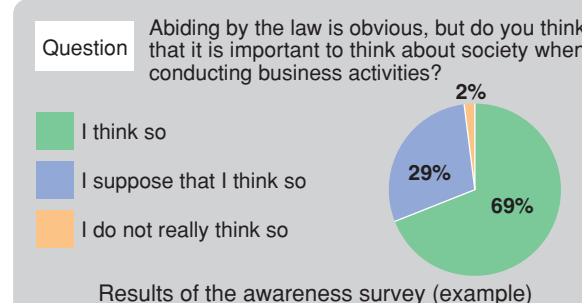
CSR Awareness Survey

We conducted our second employee CSR Awareness Survey.

<Goals>

- Determine the degree to which education to promote compliance and CSR has permeated the company.
- Determine employee levels of awareness and degrees of understanding.
- Identify indicators for future efforts.

We analyzed the responses quantitatively. By grasping trends according to workplace and position, we are applying the results toward more practical efforts that suit their various characteristics. We are providing feedback about the results to the heads of offices and workplaces. We will continue to conduct CSR Awareness Surveys every year, identify issues through comparisons with the previous year, and advance efforts to promote compliance and CSR based on the PDCA cycle.



In-house reporting system

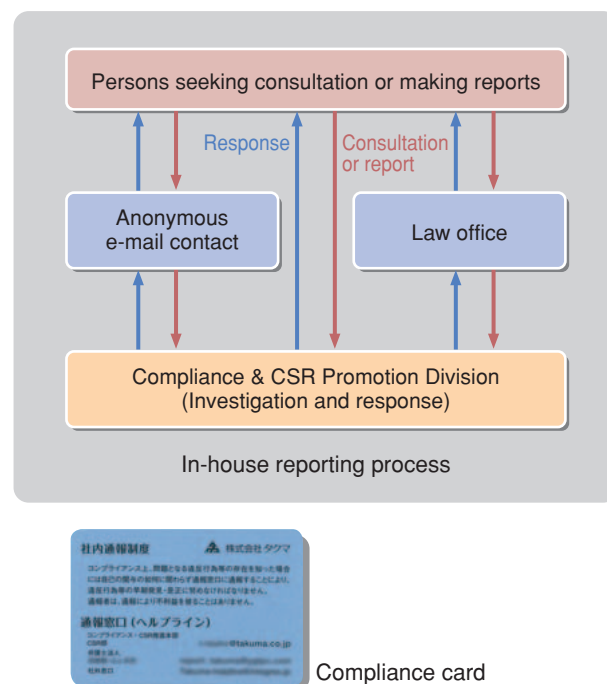
■ Establishment of a new contact system

In addition to the reporting contacts at our Compliance & CSR Promotion Division and an outside law office, we established a new dedicated contact for anonymous e-mail in September 2009.

At Takuma, we have been operating an in-house reporting system since August 2006. The goal of this system is to promote compliance management by discovering illegal or unfair acts as early as possible and undertaking corrective measures.

We have established that informants are not to be subject to disadvantageous treatment in our In-house Reporting Code and Takuma Group Code of Conduct.

To assure that our in-house reporting system is properly understood and utilized, we have distributed compliance cards with information about reporting contacts to every employee, and we are making efforts to spread awareness of it through education to promote compliance and CSR.



Implementation of a Legal Change Information System

Always being able to access the latest information about laws and regulations, including their enactment, revision and repeal, is very important in business activities.

At Takuma, we began implementation of a Legal Change Information System in September 2009. With this system, we send e-mail about the revision and abolition of 670 laws related to our business to each office and workplace responsible for compliance with them. Moreover, we have made it so that every employee can use the web service of this system to search for relevant laws and regulations and quickly check their details.

About violations of the Anti-Monopoly Law

As a result of acts we committed related to the construction of waste incineration facilities that violated the Anti-Monopoly Law, we were punished by the Ministry of Land Infrastructure, Transport and Tourism and forced to stop work for 15 days from January 20, 2010. We take this issue very seriously, and we will continue to make efforts for thorough legal compliance and strive to restore confidence through the diligence of the entire company.

Activities That Contribute to Society

Awards received from outside organizations

■ Japan Society of Industrial Machinery Manufacturers Chairperson's Prize for our "system for recovering energy from shochu liquor lees"

Japan Machinery Federation President Award for our "system for processing shochu liquor lees to recover energy using two-stage hydrogen and methane fermentation"

In addition to winning the Chairperson's Prize at the Japan Society of Industrial Machinery Manufacturers' 35th Outstanding Environmental Equipment Awards, our "system for processing shochu liquor lees to recover energy using two-stage hydrogen and methane fermentation" also received the President Award in the Energy-Conserving Machinery Awards sponsored by the Japan Machinery Federation.



■ Japan Institute of Energy award for "the development of a sewage sludge gasification power generation system"

We received the fiscal 2009 Japan Institute of Energy Award (Technical Session) jointly with the Tokyo Gas Company, Limited for "the development of a sewage sludge gasification power generation system." This revolutionary technology allows the conversion from conventional sewage processing systems that consume great amounts of energy to systems that use recovered energy.



■ Our employee received the fiscal 2009 paper prize from the Waste Treatment Facility Technology Management Association

Shigeo Fujii of our Technology Planning & Administration Department (Tokyo) received this award for his paper on "facility maintenance and management and the role of technology managers." This paper was highly evaluated for its contribution to the understanding and skill of waste treatment facility managers.

■ We received a certificate of appreciation at the Japan Society of Material Cycles and Waste Management 20th anniversary ceremony

The activities of our company were highly evaluated by this society and President Tejima and Yasujiro Wakamura, who is a former Senior Managing Executive Officer, received a certificate of appreciation for our company.

■ We received a certificate of appreciation from the Japan Waste Research Foundation

We received a certificate of appreciation for our efforts over many years related to waste treatment, including technological development, investigation and research.

Exhibition

■ Panel exhibit at the 2009 International Conference on Power Engineering (ICOPE-09) held at Kobe International Conference Center

At this exhibition, which was held from November 16–19, 2009, we exhibited panels about biomass power generation plants and other topics. We sought to make the exhibition interesting and received positive responses from visitors about, for example, a DVD we showed about a rubber tree power generation plant that we delivered in Thailand.

Takuma Technical Review

We publish our Takuma Technical Review twice per year, and introduce information related to technologies that we have developed. The editorial forward in the most recent issue is on the topic of "future prospects for the manufacture of bioethanol." Other topics include reports on plant operation and introductions of new products. Please visit our website to read the abstracts.



[Takuma Website > Technical Information > Technical Review]
<http://www.takuma.co.jp/english/gijutu/gihou.html>

Participation in "Exciting Work Encyclopedia"

On October 14, 2009, Shinji Nanba of our Harima Factory gave a lecture about the work of our company at the Hyogo Prefectural Kakogawa Kita High School. Their "Exciting Work Encyclopedia" class encourages students to think about future work by listening to people from various professions. About his lecture, one student said, "I learned that everything takes effort, and it is important to use all your abilities."

Supporting the World Food Programme

We serve on the Board of Trustees of the Japanese branch of the World Food Programme (WFP), which is part of the UN Global Compact. It is said that nearly a billion people are suffering from hunger around the world. We have a campaign period once per year and place posters around the entrances of staff dormitories and dining halls, for example, to convey information about the global food problem to our employees. Together we undertake fundraising and make contributions to the WFP. For details, please see the UN Global Compact WFP website.

UN Global Compact WFP website <http://www.wfp.org/>

● Emergency aid in response to the Haiti earthquake

In order to aid victims of the January 2010 earthquake in Haiti, we sent emergency funds through the UN Global Compact WFP.

Social contribution activities by Takuma employees

■ A member of the Akashi City Environmental Council—Akira Kawashimo of Project Administration Department II

The Environmental Council, as a body that advises the mayor of Akashi City, is a committee that was established to offer advice and opinions about the city's environmental measures. Among its activities, the committee reviews the city's basic environmental plan, evaluates the achievements in the environmental reports published by the city and offers advice for the formation of environmental protection measures in cooperation with citizens. Kawashimo was selected as one of its members. According to him, "I believe that I can learn about how the government thinks and help protect the local environment, which faces various issues that we are grappling with now."



■ A lecturer for a special science class—Akira Kawashimo of Project Administration Department II

In order to expand support for science and technology, the Ministry of Education, Culture, Sports, Science and Technology and the Japan Science and Technology Agency (JST) are conducting special science classes for members of society. Kawashimo received a request through the Hyogo Prefectural Board of Education and he was put in charge of a special science class for sixth graders at Kakogawa City Higashi Kanki Minami Elementary School on January 27. About it, he said, "I have a strong impression of the students conducting their experiments with great enthusiasm and listening in the class attentively. Moreover, when I saw such students, it made me think about how I should be involved in society."



■ Volunteer activities in Nepal—Yasuaki Nagahama from Environmental Engineering Department I

Nagahama participated in an international volunteer effort with an NPO supported by JAM Hyogo (of which the Takuma labor union is a member). He spent 10 days in Nepal where his activities included helping build brick walls for an elementary school and speaking with members of the national legislature. About his experience, he said, "I want to stop just saying that poor countries are 'pitiable' because words like that just build barriers between ourselves and others. Even just realizing this was enough to make it a good experience."



Contribution to NPOs

● Purchasing UNICEF Christmas cards

Since about 50% of the cost is used to fund UNICEF activities, this helps the children of the world.

● Donations to the calendar market held by Nippon Volunteer Network Active in Disaster, which is a nonprofit organization

We donated 81 unneeded calendars. The money raised from their sale is used to support disaster victims.

● Use of carbon offset New Year's postcards

We purchased 6,600 carbon offset New Year's postcards for 2010. Compared to ordinary postcards, these have a CO₂ offset of 17.1 tons.

- Participation in the Recycling System Center
- Participation in the NPO Green Spirits Association
- Participation in the Overseas Environmental Cooperation Center, Japan

Social contribution activity by the group company

■ Tochigi High Trust Co., Ltd.

Participation in the Mooka Environmental Partnership Council
Tochigi High Trust Co., Ltd. is participating in local volunteer activities in Mooka City, Tochigi Prefecture. The government, citizens and businesses are conducting activities together to protect the natural environment of Mooka City. We helped cut grass during a July holiday. In the future, we will continue to participate in activities with goals that include protecting birds and insects and planting flowers throughout the seasons.



■ Dan-Takuma Technologies Inc.

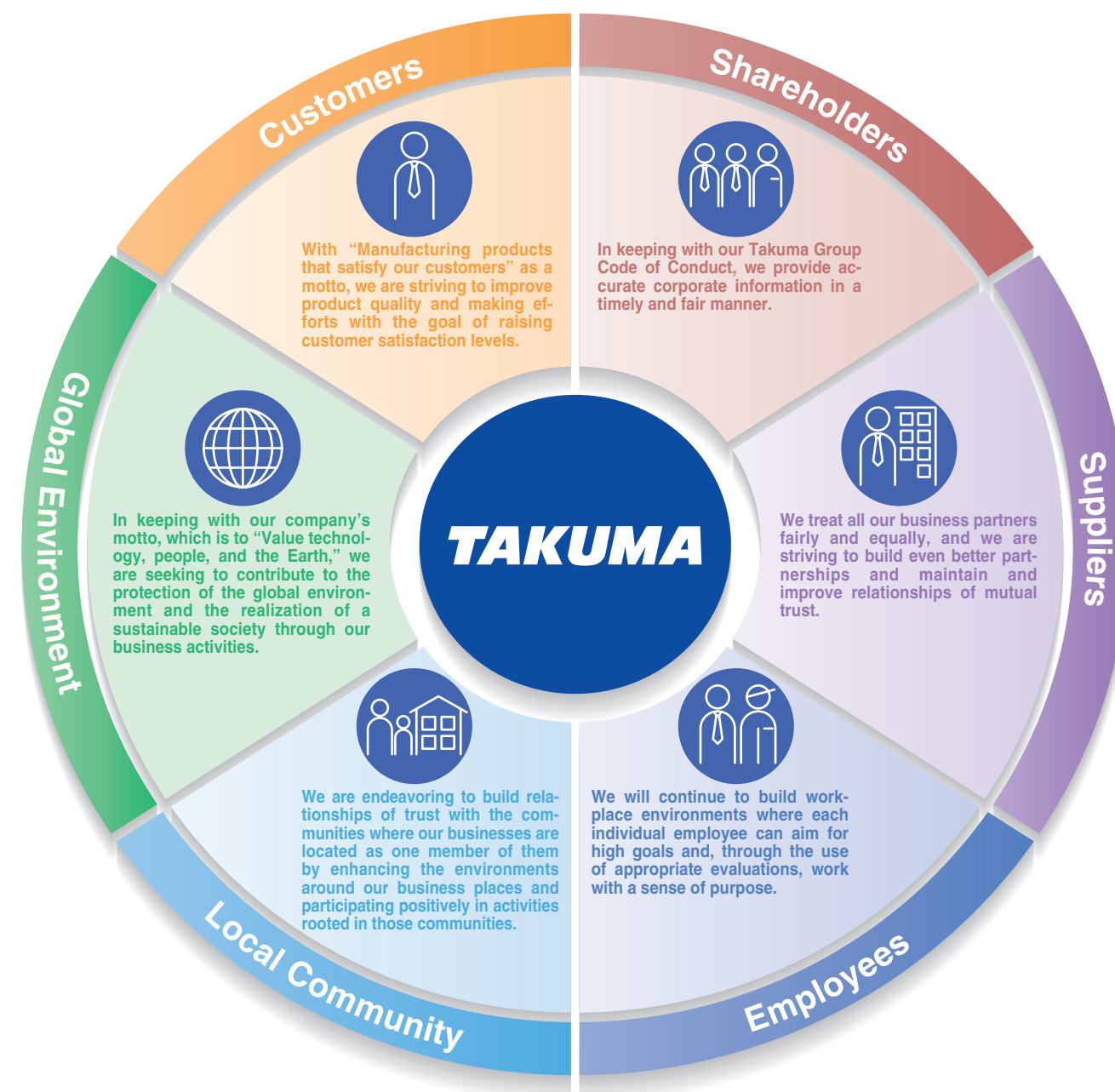
Exhibition at SEMICON Japan 2009

From December 2–4, 2009, Dan-Takuma Technologies Inc. exhibited at SEMICON Japan 2009, which is the largest trade show in the semiconductor industry, at Makuhari Messe.



Working with Our Stakeholders

Under the Management Principles: "we will strive for social contribution, corporate value enhancement, long-term corporate development and all stakeholders' satisfaction by yielding goods and services needed and recognized as valuables in society", we engage in sincere corporate activities.



Working with the Global Environment—our main business is itself a form of corporate social responsibility

Takuma products reduce CO₂ emissions by about 5 million tons per year!



What are the technologies that convert garbage and biomass into energy and reduce CO₂?

Reducing CO₂ at Energy from Waste plants and industrial waste incineration plants

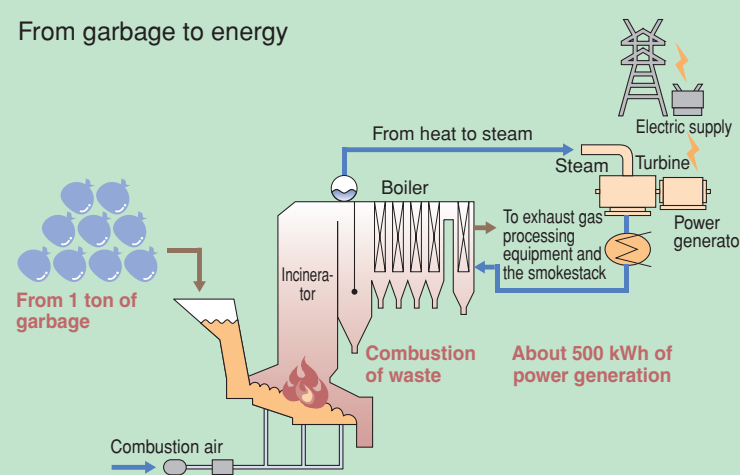
Q

Energy from garbage...?

A

Garbage is a source of energy that contains large amounts of biomass.

From garbage to energy



Garbage is not really waste. It is an important source of energy. About 500 kWh* of power can be generated from one ton of garbage. In Europe and the Americas, waste incineration plants are often called energy-from-waste (EfW) plants, and recovering energy from garbage has become the norm. Please stop thinking of garbage as "garbage." It is a "resource." We are seeking to be the best in the world with our technologies to convert waste into energy and reduce CO₂.

* Assuming the waste has a calorific value of 8,800 kJ/kg and a power generation efficiency of 20%

The actual achievement of Takuma for reducing CO₂* by Energy from Waste plants and industrial waste incineration plants

1,040,000 tons/year (as of the end of fiscal 2009)

* "Waste incineration facility ledger fiscal 2006" by the Japan Waste Research Foundation, as well as Takuma's achievements

What is biomass?

Biomass is any recyclable organic material derived from a living organism, but does not include fossil fuels. For example, even though CO₂ is emitted if vegetables and other household wastes are incinerated, when vegetables are grown again, they absorb CO₂, so there is no overall increase in CO₂ in the atmosphere. By using the heat produced by incinerating biomass to generate power, the amount of power generated using fossil fuels as fuel can be reduced, and this contributes to decreasing CO₂.

Reducing CO₂ with biomass power generation boilers

Q

So, what types of things can be used as fuel?

A

Woodchips, bagasse (sugar-cane pulp residue) and oil palm pulp residue, for example.



Woodchips



Sugarcane



Palm

A classic example of biomass power generation is in sugar refineries. At factories that make sugar, the remnants of the raw materials are produced in large quantities. Sugarcane is crushed minutely, and sugar is extracted in a compressor. The remaining fiber is called bagasse and can be used as boiler fuel. The steam produced can be used to provide electricity necessary at the plant, and then used as a heat source for refining sugar. In recent years, the amount of power generated at sugar refineries has grown greatly. There are even examples of single plants that are stably supplying electric power equivalent to 50 MW.

The actual achievement of Takuma in terms of the reduction of CO₂ by biomass power plants

4,250,000 tons/year (as of the end of fiscal 2009)

Working with Our Customers

With the motto: “manufacturing products meeting customer satisfaction,” our company implemented the registration for ISO9001: 2000 certification (Registration No.: JQA1952, registered in 1997), promoting our activities to enhance customer satisfaction, as well as product quality, based on the quality management system. Then, in fiscal 2010 we switched to ISO9001: 2008.

Customer satisfaction survey

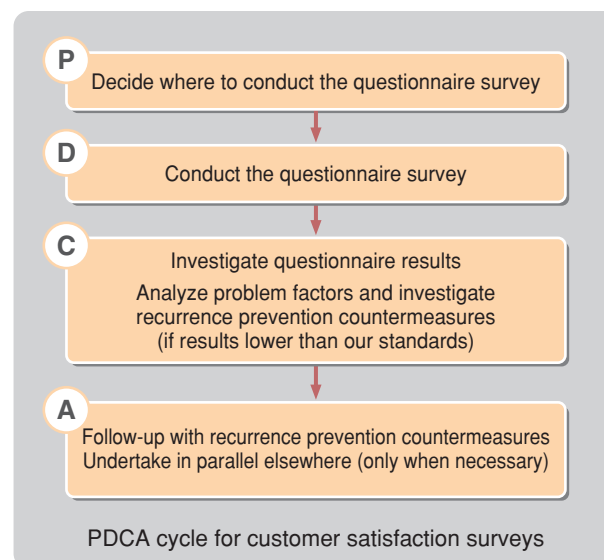
We use our customer satisfaction surveys to obtain feedback from customers when we have built new plants and delivered new equipment, for example, as well as from those to whom we provide regular servicing and upgrades for existing plants. These surveys allow us to hear the unvarnished opinions of our customers about the products that we have delivered and our staff who have been responsible for working with them.

We conduct our satisfaction questionnaire surveys for these types of customers and analyze the results. If there were problems, we analyze the factors that contribute to them and undertake countermeasures to prevent them in the future.

The questionnaire survey process is shown to the right as a PDCA flow.

We have been conducting questionnaires using this format since fiscal 2007. The average scores of the evaluations that we receive from the results of these questionnaires have been increasing year by year.

We undertook follow-up countermeasures for customers that experienced problems to prevent their recurrence. In fiscal 2008, we prepared preventative countermeasure plans, and in fiscal 2009, we conducted questionnaire surveys of customers again at four of the plants where these measures had been implemented. The results of the questionnaires showed that the evaluations provided by our customers improved, with an average increase of 17 points among the four customer locations. By advancing these types of efforts, we are seeking to further increase customer satisfaction.



[Average evaluation scores from questionnaire surveys]

Fiscal 2007: 73.4 points (37 plants)
Fiscal 2008: 80.2 points (18 plants)
Fiscal 2009: 83.5 points (26 plants)



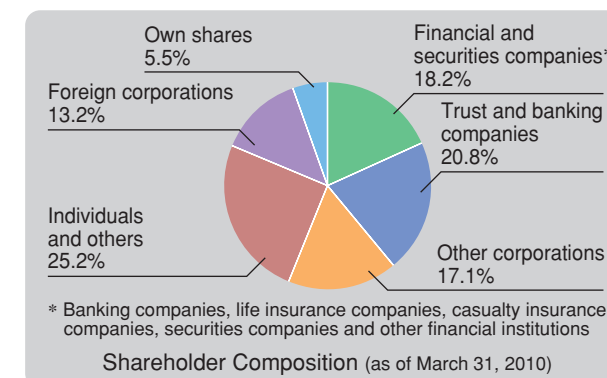
Working with Our Shareholders

IR activities

In keeping with our Takuma Group Code of Conduct, we provide our shareholders and other investors with accurate corporate information in a timely and fair manner. As one part of this, we provide notification when we call a general meeting of stockholders, balance sheet information, timely disclosure information, marketable securities reports, annual reports in English and other business information on our website.

[Takuma website – IR information]

<http://www.takuma.co.jp/english/investor/index.html>



Working with Our Suppliers

In keeping with our Takuma Group Code of Conduct, we treat all our business partners fairly and equally as we seek to build even better partnerships and maintain and increase relationships of mutual trust.

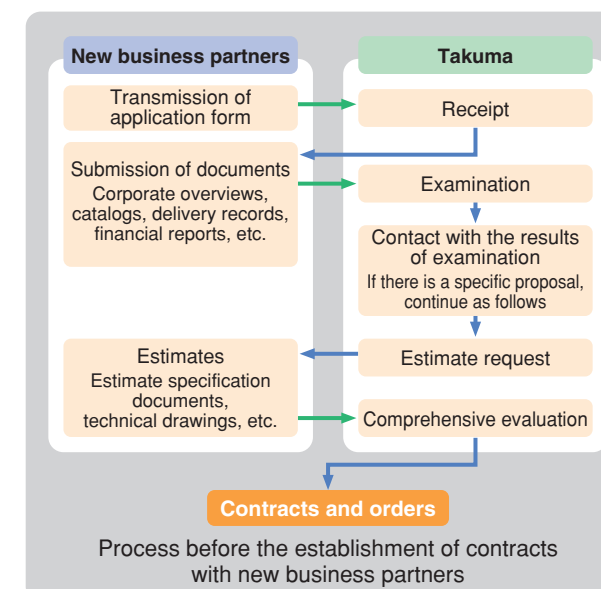
For our procurement activities, we have established our Material Procurement Policies in which we set, for example, expectations for working with businesses. In addition to the conventional requirements related to quality, cost and timely delivery, we seek business partners that emphasize consideration for legal compliance, human rights, labor standards and the environment. We are seeking cooperation on these issues from our business partners in Japan and abroad.

■ Fair and impartial evaluation and selection

We select our business partners based on the following four criteria.

- ① Reliability as a company
- ② Technical abilities
- ③ Factors related to delivered goods, including quality, price and delivery speed
- ④ Status of efforts for CSR and related matters

We do not question nationality, company scale or transaction histories. We provide open opportunities for all companies that wish to do business with us.



[Material Procurement Policies]

1. When appointing suppliers, they must be treated fairly.
2. Seek to discover new manufacturers.
3. Confidential information must be firmly controlled.
4. Seek to obtain new related information.
5. Promote green procurement.
6. Comply with laws and ordinances concerning business deals.
7. Always have VA and VE in mind.
8. Strive toward self-development.

■ Promotion of CSR-conscious procurement activities

Along with suppliers, our company is promoting CSR-conscious procurement activities, including the global environment conservation, compliance with laws and ordinances, respect for human rights, labor and health & safety, as well as ensuring the safety of products and services & quality, maintenance & promotion of information security and fair trade & corporate ethics.

■ VA/VE* activities

In product procurement, we believe the pursuit of total optimization in various situations helps maintain quality as well as reducing costs and environmental load. Based on this concept, we have been promoting VA/VE activities with suppliers.

* VA/VE: Value Analysis/Value Engineering

[Takuma website – Material Procurement]

<http://www.takuma.co.jp/procurement/index.html>
(Japanese language only)

Working with Our Employees

Approaches toward employees

Our company sets “establishing a work environment allowing each employee to challenge their goals, as well as getting on with their work through appropriate assessment” as its basic policy. Specifying the following three approaches as critical items, we introduce various systems for each:



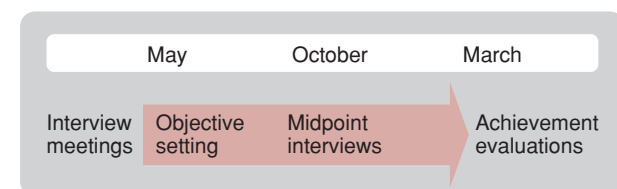
(1) Enhance the motivation of employees by ensuring transparency as well as satisfaction for assessment.

■ Objective Management System

We utilize an Objective Management System in which work objectives are set at the beginning of the fiscal year and the degree to which they are achieved are evaluated at the end of the fiscal year.

The objectives, which are based on company policies, are decided through meetings and interviews with superiors to include the work tasks that each individual is to undertake over the year and the roles they are expected to fill.

During the fiscal year, we conduct “midpoint interviews” for everyone around the same time. In addition to regular confirmation and follow-up on the progress status of objectives, these promote communication between superiors and the employees that work under them and provide opportunities to deepen mutual understanding and trust.



■ In-house commendation

- Takuma Prize*
- Invention and idea commendations
- Qualification acquisition commendations
- Takuma Technical Review Outstanding Paper Award
- Continuous service commendations

* The Takuma Prize is awarded to employees who have demonstrated outstanding achievements in their work as well as to employees who have demonstrated outstanding achievements in their efforts for society outside of work, including lifesaving, disaster prevention and volunteer service.

(2) Provide capacity building assistance to employees.

In order to promote the cultivation of employee abilities and their self-development, we hold technical presentation meetings for technical employees, offer TOEIC tests, and provide financial rewards and pay examination fees for employees that acquire new certifications, for example.

■ Technical presentation for technical employees

We set up opportunities to give technical presentations with the aim of enhancing presentation skills to promote younger engineers' technical capabilities as well as clarifying challenges and goals to enhance the technical capabilities of each one.



■ Open laboratory

We organize open laboratories with the aim of widely enlightening our technical development result within the company and providing opportunities for exchange between the development team and other employees.



■ English education support system

In order to improve the language skills of our employees, we regularly offer TOEIC examinations on site.

■ Other systems

- Support for obtaining qualifications
- Correspondence education programs
- New employee training
- General employee training
- Job rotation system
- Technical training sessions

(3) Improve the work environment, facilitating employees' efforts to address business tasks without anxiety.

■ Balancing work and private life

In order to maintain suitable working time periods, assure days off and support the diverse ways of working of our employees, we have incorporated systems for discretionary work, flextime, and half-days off. In addition to various systems for supporting employees who are giving birth and raising children, we have also created a system of time off for employees who nurse other family members that exceeds the amount of time legally required.

- Implementation of no overtime days
- Reduction of working after hours and on holidays
- Promotion of the use of compensatory holidays and paid time off
- Paid holidays in half-day units
- Childcare leave
- Nursing leave (we allow one year compared to the 93 days that are legally required)
- Discretionary work system
- Flextime system

■ Employee health management

At our head office, in cooperation with our corporate health insurance society and the staff of our cafeteria business, we held a wellness fair with the themes of “Lifestyle illness prevention—is your blood in good condition?” and “Improving the insides of our bodies—immune system strength is the deciding factor.” During this fair, panels were displayed, a registered dietitian provided individual diagnoses and special menu items were offered, for example. In addition, our corporate health insurance society is proactively conducting health management measures for our employees.

- Improvement program for lifestyle-related diseases
- Lifestyle-related diseases prevention checkups
- Mental health measures
- Health consultation
- Transmission of health information (In-house newsletter and website)



■ Other enhancements to workplace environments

- Measures to counter sexual/power harassment
- Work environment measurement
- Listening to opinions within the company*

* To enhance “ideal working conditions” for employees, our company absorbs a wide range of views from employees by placing an “opinion box”, as well as communication via e-mail and telephone concerning their working environments.

■ Labor-management relations

The labor union is an organization which conducts periodic deliberations and collective negotiations in terms of annual salary, working hour and other working conditions and establishing a stable employee-employer relationship.

Respect for human rights and the abolition of discrimination

Our company sets out its respect for basic human rights and prohibition of discriminatory acts in the Takuma Group Ethics Charter, Takuma Group Code of Conduct and labor regulations.

In addition, we also support respect for human rights, without contributing to human rights violations, elimination of forced labor/child labor and the abolition of discrimination through participation in the UN Global Compact.

● The Takuma Group Ethics Charter (excerpt)

- 4. We shall respect fundamental human rights and never practice discrimination.

● Takuma Group Code of Conduct (excerpt)

- [Respect for basic human rights]
- 9. Prohibition of discriminatory actions
- 10. Respect of individuality, personal quality and privacy
- 11. Safe work environment

Recruitment

■ Graduate recruitment

We implement the periodical recruitment of new graduates every year, from the perspective of long-range outlook and human resource cultivation. As for the recruitment for the next fiscal year, we will continue to implement fairer and more highly transparent recruitment activities via the provision of information, putting ourselves in the students' shoes.

■ Internship

We have an internship program, accepting university and technical college students during their school summer breaks.

■ Recruitment of handicapped people

Currently, 9 handicapped employees are active in the company. (As of March 31, 2010)

We will continue to strengthening our approaches toward improving the employment rate of handicapped people by proactively participating in job-interview sessions in the local community as well as implementing year-round recruitment.

■ Reemployment system for employees reached the mandatory retirement age

Since fiscal 2006, we introduced a reemployment system for those employees having reached the mandatory retirement age and have been providing employees who wish to work actively after retirement with the opportunities to continue playing active roles.

[Takuma website – Recruitment]

<http://www.takuma.co.jp/saiyou/index.html>

(Japanese language only)

Social gatherings with the President and employees new and old

At Takuma, we have held "Social Gatherings with the President and Employees New and Old" since fiscal 2006. In fiscal 2009, we held these gatherings at our Head Office, Tokyo Branch, Hokkaido Branch, Chubu Branch and Kyushu Branch a total of 10 times with 80 employees who were both young and in their middle years participating.

These gatherings, which are intended to build morale, provide opportunities for employees to hear management policies directly from the president, who is at the top of our management. In addition, the employees of different ages can speak directly with the president about the issues, problems and concerns that they currently face, for example. In addition to hearing directly about the direction of the business and management issues, employees are also able to learn about the situations in other divisions and the concerns of employees of the same generation. As a result, these meetings have been highly evaluated for not only helping employees understand the significance of their work duties and the direction of the company, but also for maintaining and increasing their motivation.



Participant comments

● At this gathering, I was able to hear about problems and concerns that arise in the work in other divisions. Moreover, we were able to listen to opinions and responses from the president about those issues. I expect that this will provide direction and other guidance when doing my work in the future. His explanation about market trends for waste incineration facilities and other products overseas and in Japan, for example, was something that I cannot learn much about in my ordinary work, so it was extremely educational. As a result of participating in this gathering, I feel that I want to try even harder than I have until now when doing my work.

● I think that among companies listed on the stock market it is extremely rare for the president himself, who is the top manager, to speak with almost every employee. I think that by providing this kind of opportunity, the feeling between management and employees is improved and that environments that are extremely easy to work in will develop. Personally, being able to hear how the president and people from other divisions think from their own perspectives made this time very meaningful for me.

● Until this point, I have only been able to do my work with the guidance of my boss and other employees who have been here longer than me. In five or ten years, however, I will need to learn to advise newer employees as I do my own work and think more about the company. At that time, if I have the opportunity to speak with the president again I expect that I will learn something more. For a while, though, I want to learn my work and focus on it passionately.

● It has been less than one year since I joined the company and I do not have opportunities to speak with the president during my ordinary work, so I am very grateful to be given this type of opportunity. In addition, I was also able to learn about concerns, doubts and other issues that the other participants have in the work that they are responsible for. The division where I am assigned receives legal consultations from people from other divisions, but people in management positions mostly come. It was good to hear the valuable opinions of people from other divisions who are relatively close in age to me. I want to utilize what I learned in today's meeting in my work from now on.

● During the conversation at the gathering this time, the issue of dealing with customers came up. In my experience, during trial operations of existing boilers that have been upgraded, I have actually learned from our customers. For this reason, I realized that sometimes it is helpful to ask customers about operating conditions and other factors and it is important to build relationships of trust for this purpose. My direct interactions with customers are still infrequent, but when making estimations and plans, I want to understand the desires of our customers and strive to provide optimal plans. Moreover, in addition to estimate and planning work, in the future I want to build up my experience and be involved in design work and deepen my understanding of plants.

Efforts for occupational health and safety

We are approaching the 5th year since we created and began operation of the Takuma Construction Occupational Health and Safety Management System (TK-COHSMS), which is based on OSHMS promoted by the Ministry of Health, Labour and Welfare. To this point, we have implemented TK-COHSMS thoroughly, and all our employees have sufficiently understood it and recognized our corporate social responsibilities related to health and safety.

With the desire to continue respecting the spirit of legal compliance and to continue making efforts sincerely as a corporation, we have made "CSR founded on our shared respect for people" our most important slogan, and we will implement safety and efforts that reflect the responsibilities of every employee, which must never be compromised.

In fiscal 2010, we set five health and safety objectives for our occupational health and safety efforts. They include (1) acting to put the "safety first" mindset into practice, (2) strengthening the utilization of our safety inspection system and our Safe Working Procedure Step Safety Assessment (SSA), (3) implementing safety patrols to strengthen "safety abilities," (4) eliminating accidents involving falling and getting caught in machinery, and (5) strengthening implementation of our danger prediction activities that utilize near miss examples. Moreover, we continue to push forward with our goal of being an even safer company within our compliance framework, which includes laws and regulations related to occupational safety and health, company rules and the Construction Business Act.

Occupational safety and health activities and their results

1. Safety inspection system

As the master contractor, when subcontractors hired by us directly prepare safety and health planning documents for construction or installation work, we have our health and safety managers conduct and continue inspections, including for strict compliance with the Construction Business Act and the Occupational Safety and Health Act.

● Fiscal 2009

Number of safety inspections implemented 98

2. Education for worksite representatives (safety and health education)

We will continue providing education to increase the levels of safety awareness of our employees and affiliated contractors.

● April 2004–March 2010

Cumulative number of students (including people who are counted more than once) 17,098

Total number of students that have passed 6,262



3. Safety patrols

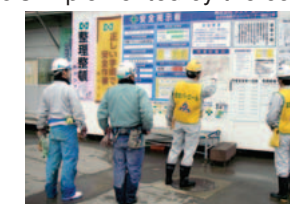
We have endeavored to assure safety in our workplaces. Based on our annual safety patrol plan, our Safety and Health Committee (including committee members, advisors and the Safety Control Department) has continued safety patrols. Our construction division has also continued independent safety patrols. In fiscal 2009, we implemented safety patrols with greater responsibility to demonstrate safety ability, which is the ability to predict and avoid danger, in particular.

● Fiscal 2009

① Number of safety patrols implemented by the Safety and Health Committee

Safety and Health Committee members and advisors: 93
Safety Control Department: 210

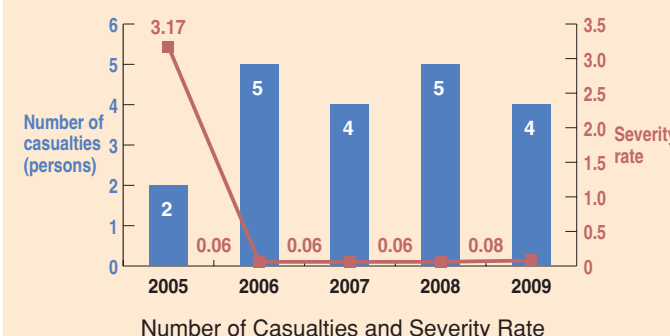
② Number of safety patrols implemented by the construction division: 454



Number of casualties and severity rate of occupational accidents that have occurred in recent years at Takuma

Our safety record for 2009 includes four people who had to miss one or more days of work due to injury, and the severity rate*, which expresses the extent of the accidents, was 0.08. Our severity rate has stayed well below the national average for the construction industry in recent years. We believe that this is the result of our safety efforts based on TK-COHSMS.

(* Cumulative lost number of labor days per 1,000 total actual labor hours)



FY2005	0.14
FY2006	0.37
FY2007	0.33
FY2008	0.41
FY2009	0.14

National Average Severity Rate of Construction Industry

Basic Environmental Policy

Our company has established the “Basic Environmental Policy” as follows; aiming to ensure employees contribute toward global environment conservation. This basic policy applies to the activities of all company departments.

Environmental Philosophy

Takuma is committed to preserving the environment and realizing an affluent society through business activities under the company motto: “Value technology, people, and the earth”.

Operational Guidelines

1. All Takuma Group companies will recognize the importance of maintaining a balance between preservation of the environment and business activities.
2. Continuously develop activities to preserve the environment that comply with applicable environmental laws and ordinances, and ensure environmental control and assessment systems conform to international environmental standards.
3. Promote development of improved technologies and products for society that preserve the environment.
4. Address resource conservation, energy efficiency, recycling, and minimization of waste generated by all business activities.
5. Improve employee awareness and understanding about the importance of preserving the environment through environmental education and internal promotional activities.
6. Provide the community with information on the activities of Takuma to preserve the environment.

Environmental Objectives

Takuma Environmental Objectives

Our company has established the following environmental objectives:

1. Takuma will reduce the amount of overall energy consumption by 30% compared to its level of fiscal 2001 by fiscal 2012.
2. Takuma will reduce the amount of CO₂ emissions by 30% compared to its level of fiscal 2001 by fiscal 2012.
3. Takuma will reduce the amount of waste generation by 30% compared to its level of fiscal 2001 by fiscal 2012.
4. Takuma will reduce the amount of final disposal of waste by 30% compared to its level of fiscal 2001 by fiscal 2012.
5. Takuma will achieve a rate of green purchase, such as office supplies, by more than 60% by fiscal 2012.
6. Takuma will take all effective and possible environmental measures by controlling expenditure on the same.

Environmental Objectives for the Group Companies

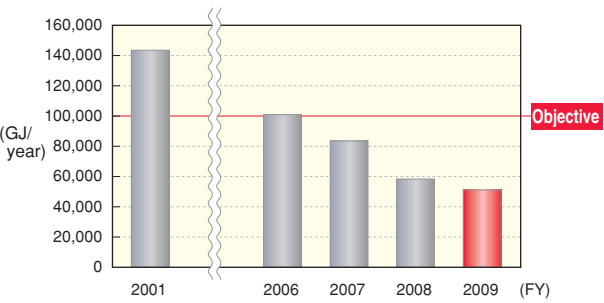
In accordance with the establishment of our “Environmental Objectives”, our domestic group companies established their own “Environmental Objectives” and are striving toward efforts to reduce the environmental load.

Our Approaches toward Reducing the Environmental Load

Objectives and achievements

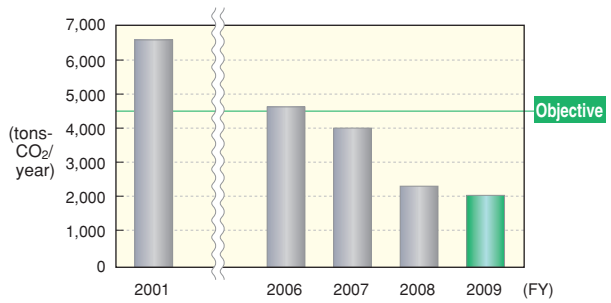
■ Total energy consumption

The total energy consumption of fuels and electricity at our company is indicated in the following graph. Thanks to the activity carried out to reduce the energy consumption, we successfully reduced it by approximately 10% over the amount in fiscal 2008, consequently, in fiscal 2009; we have successfully achieved our objectives.



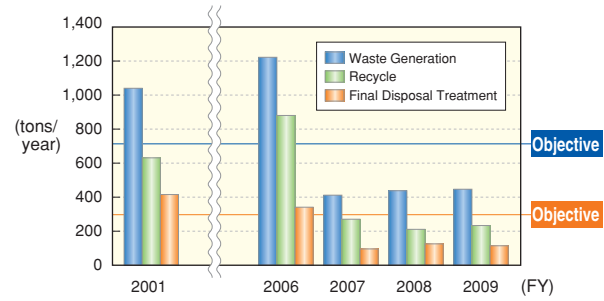
■ Greenhouse gas emissions

The greenhouse gas emissions created by our company are limited to carbon dioxide (CO₂). Thanks to the CO₂ reduction activity, we successfully reduced CO₂ emissions by 10% over the amount in fiscal 2008. As well as overall energy consumption, we have also achieved our objectives. We will continue to strive to reduce CO₂ emissions; both at offices and the factory.



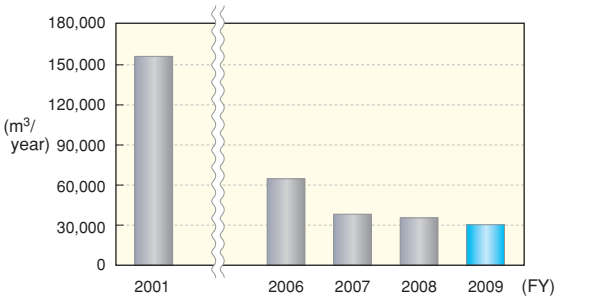
■ Waste generation

Our company sells recyclables and reusables from the waste generated through its business activities to scrap dealers, while outsourcing the treatment of the remainder of the waste—non-recyclables and non-reusables—to haulers, processors and final disposal dealers, in accordance with the Industrial Waste Control Manifest system.



■ Water usage

The applications of water are cooling and rinsing factory equipment, while being used for daily life, cooling water for air-conditioners, watering plants and makeup water for ponds at the Head Office. The water used for these applications is all tap water. At the Harima Factory, its water area is covered by the special measures law for the Seto Inland Sea environmental conservation, whereby stringent emission concentration regulations as well as total volume control are applied. The water quality is regularly checked at each registered drain outlet and the result is reported to Hyogo Prefecture.



Office activities

■ A campaign to reduce resources

Followed by the previous fiscal year, in fiscal 2009, we implemented energy conservation measures in summer and winter, aiming to prevent global warming by reducing CO₂ emissions, reducing environmental load and effectively using fuel resources.

Summer energy conservation measures (Cool Biz)

- Period: June 1, 2009–September 30, 2009
- Contents: Set the temperature of the air conditioner at 28°C
Ensure workers dress lightly
Enhancing the air-cooling effect by using blinds

Winter energy conservation measures (Warm Biz)

- Period: November 9, 2009–April 9, 2010
- Contents: Adjust air-heating to keep the room temperature, targeting at 20°C
Ensure workers dress warmly
Turn the heater on during the morning hours only

Environmental Management

The situation concerning the acquisition of ISO14001

Our Harima Factory has acquired the ISO14001 certification and has been implementing environmental management activities, based on the environmental management system established to comply with international standards.

● Harima Factory

Shinham, Arai-cho, Takasago, Hyogo

Certification No.: JQA-EM0313

(ISO14001:2004/JISQ14001:2004)

Certification Date: January 8, 1999

Renewal Date: January 8, 2008

Expiry Date: January 7, 2011

Certified Business Units: Harima Factory, Energy & Environmental Research Center and Experiment Center

Certified Activities: Design, development and manufacture of boilers and products for environmental plants and issuing of certificates of analyses and measurements

Group Company: Kankyo Sol-Tech Co., Ltd.

(issuing of certificates of analyses and measurements)



Moreover, the ISO14001 certification has been acquired by the following group companies:

- Nippon Thermoener Co., Ltd.
- Takuma Technos Co., Ltd.
- Dan-Takuma Technologies Inc.

PRTR emissions

Although our business activities do not involve a wide variety of chemical substances on a massive scale, we use a few designated chemical substances. Consequently, we report and register such chemical substances designated as PRTR, in accordance with relevant laws and ordinances, with the local government.

● Dichloromethane (CAS No. 75-09-2)

Rustproofing paint on structural steel for boilers

FY	2006	2007	2008	2009
Emissions (tons)	0	0.5	0	0.1

● Toluene (CAS No. 108-88-3)

Used for chemical analyses inside the analytical laboratory

FY	2006	2007	2008	2009
Emissions (tons)	3.4	1.1	0.4	0.1

After use, all materials are taken away by waste-solvent dealers for disposal.

● Xylene (CAS No. 1330-20-7)

Rustproofing paint on structural steel for boilers

FY	2006	2007	2008	2009
Emissions (tons)	1.8	1.5	0.2	1.2

Soil contamination countermeasures

Our company conducts the survey on soil contamination on an ongoing basis at the production site.

Group company activities

■ Nippon Thermoener Co., Ltd. and domestic CO₂ credits

As interest in domestic CO₂ credits increases throughout Japan, Nippon Thermoener Co., Ltd., which is one of our group companies, began its efforts in fiscal 2008, which was the first year. As a result, among 125 applications received from around the country, 12 that were accepted use its products, and it has received favorable evaluations from those using them. This company will consider the environment even more deeply and continue to focus on the spread of the domestic credit system.

<http://www.n-thermo.co.jp/service/credit.html>

Environmental Accounting

Since fiscal 2006, we have introduced and disclosed our own environmental accounting system; based on the "Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment". As our business activities mainly involve environmental conservation plants and its equipment, Takuma group employees have a significant awareness of the need for environmental conservation and we have been implementing approaches toward such issues within the Takuma group.

Scope of data collection

- Period: April 1, 2009–March 31, 2010

- Sites:

[12 companies within the country]

Takuma Co., Ltd. (Head Office, other offices including overseas sites and Harima Factory),

Nippon Thermoener Co., Ltd.,

Takuma Technos Co., Ltd.,

Hokkaido Sanitary Maintenance Co., Ltd.,

Takuma Technos Hokkaido Co., Ltd.,

Sun Plant Co., Ltd.,

Takuma Engineering Co., Ltd.,

Takuma System Control Co., Ltd.,

Dan-Takuma Technologies Inc.,

Kyoritsu Setsubi Co., Ltd.,

Kankyo Sol-Tech Co., Ltd.

Takuma Plant Service Co., Ltd.

[4 overseas subsidiaries]

KAB Takuma GmbH,

Bioener ApS,

Taiden Environtech Co., Ltd.,

SIAM TAKUMA Co., Ltd.

Environmental conservation cost

Item	Investment (thousand yen)	Costs (thousand yen)
Business area costs		
Pollution prevention costs	—	22,804
Global environmental conservation costs	339	9,984
Resource recycling costs	—	11,705
Management activity costs	—	31,027
Research and development costs	2,750	857,986
Social activity costs	—	3,255
Total	3,089	936,762

Environmental conservation effect

Item	FY 2008	FY 2009	Reduction volume
(1) Environmental conservation effect concerning resources input for the business activities			
Total energy input (GJ)	111,837	100,268	11,569
Water resource input (m ³)	70,515	60,583	9,932
(2) Environmental conservation effect concerning environmental loads and wastes created by the business activities			
Greenhouse gas emission volume (tons-CO ₂)	4,691	4,154	537
Waste generation (tons)	1,001	879	122
Final disposal volume (tons)	187	151	36
Total drainage volume (m ³)	66,222	53,187	13,035
BOD emissions (tons)	3,626	2,839	787
COD emissions (tons)	3,898	3,120	778
T-N emissions (tons)	992	886	106
T-P emissions (tons)	150	140	10

Environmental Efficiency

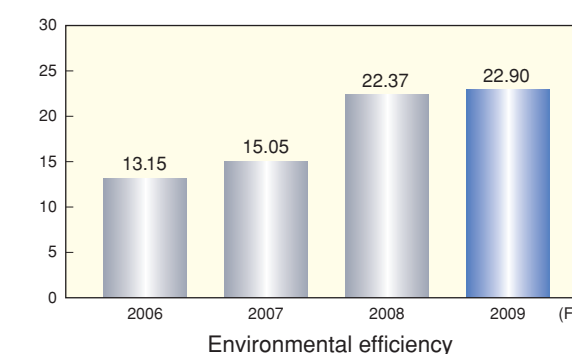
"As for environmental load, there is a need for business organizations to reduce their gross volume. However, approaches toward high economic efficiency are also required from a business management perspective. Consequently, when comprehending and evaluating environmental performance as well as approaches toward the environment implemented by business organizations, it is important to comprehend and manage an index indicating the efficiency of their approaches toward the environment, while also reflecting the economic value they produce, as well as an index indicating the total loading dose". (Environmental Performance Indicators Guideline for Organizations – Fiscal Year 2002 Version – : Ministry of the Environment)

At Takuma, we calculated our environmental efficiency in response to the demands of this age. In fiscal 2009, our environmental efficiency was almost the same compared to fiscal 2008.

Definition of our environmental efficiency

Consolidated net sales (million yen)

Greenhouse gas emissions (tons-CO₂)



Outside Expert Opinion



One Akiyama
President, Integrex, Inc.

Outside Expert Opinion about Takuma's 2010 CSR Report

A CSR report is not just a report on the status of efforts for corporate social responsibility. It can also be called an expression of commitment to a series of efforts (PDCA) for the realization of management ideas. These include planning, execution, verification, reform and reconfirmation of those ideas. I would like to express my opinions from this kind of perspective.

1. Points deserving commendation

In the "Message from the Top Management" and the following "Business Summary," the position of the company as an "environment and energy" business with the motto, "Value technology, people, and the Earth," and its strengths are presented clearly. Moreover, the message is conveyed that, based on the philosophy, "Service to the nation through boiler manufacturing," undertaking business activities sincerely is itself a contribution to society.

The contents of both "Topics" are very interesting, and they make clear that business and projects that utilize the company's strengths create new value in the environment and energy fields, and that this results in contributions to society.

In the "Dialogue with Stakeholders" section, activity reports of each company are noted at the "Group Coordinating Committee for Compliance & CSR Promotion." I believe that this is also important for advancing efforts as a group. As efforts for CSR at the group level, including overseas, become increasingly important, I expect that your activities and reports will become even more extensive.

The "Social gatherings with the President and employees new and old" in the "Working with Our Employees" section, can be called a dialogue with employees, but this type of dialogue also leads to shared understanding and awareness of the direction of the company and can be said to be an important activity.

Specific examples of efforts include education and discussions at workplaces in order to promote shared awareness, the call for slogans related to compliance from employees and other efforts with the participation of all company employees, and the identification of issues using the CSR awareness survey and making improvements for more effective activities in the "CSR

Activities" section. Moreover, the analysis of problem factors from implementing customer satisfaction surveys each year and the undertaking of reform measures, for example, in the "Working with Our Customers" section, makes me feel that the stance of the company is to advance its efforts by utilizing the PDCA cycle while receiving feedback from stakeholders.

2. Expectations for further enhancements

I believe that in order to also make PDCA in the various efforts clearer, however, for each effort, a flow that includes the objective, actual activity, results, evaluation of those results and the objective for the next year's effort should be arranged and summarized in a table or something similar. By reporting activities annually, each activity can be organized and efforts can be identified over the year. Moreover, we will be able to understand that the activities are being undertaken based on PDCA, and that they are linked to continued efforts.

Furthermore, in the "Working with Our Employees" section, various systems to enhance workplace environments are introduced. Rather than just introducing these systems, though, I want a more probing investigation into the results of these efforts, including how they are being used and how they contribute to employee work satisfaction.

In the "Environmental Report," most of the environmental objectives were achieved the year before last, and you can be highly commended for continued success in reducing environmental burdens. I hope, however, that as a company that is an environmental leader you will target even higher objectives and seek new challenges.

3. Looking to the future

The "R" in CSR has already begun to shift from "responsibility" to "respect" for how things should be or how we want them to be. Taking the fundamental "responsibility" to observe laws, regulations and rules as a given, I expect your company to utilize your pioneering technological capabilities in the fields of the environment and energy to continue to support people's lives and the global environment in order to realize "how we want things to be."

Response to the Outside Expert Opinion



Yasuyuki Moriura
Managing Executive Officer
General Manager
Compliance & CSR Promotion
Division
Corporate Service Division

This is the fourth time that we have issued a CSR Report. Moreover, fiscal 2009 is the first year of our 9th Mid-Term Management Plan, so this report on the results of efforts to strengthen CSR management was prepared with a fresh outlook.

A new experiment this time was the publication of our Corporate Overview and our CSR Report, which had been issued separately before, together in one brochure. Rather than just providing a simple guide to the company, we believe that by making our readers aware of our CSR efforts, they will be able to understand our company more deeply.

In the "Topics," we discussed our "Efforts for DBO projects," which we are also focusing on in particular in our current Mid-Term Management Plan, and the Kyoto Biocycle Project, which utilizes the environmental technologies that are one of our company's strengths. In recent years, DBO projects have been increasingly adopted, and we believe that it is a field where we can utilize our abundant record and experience to great effect. We will continue in this field to actively make proposals that will also please our customers. Moreover, we can say that our participation in the Kyoto Biocycle Project, which seeks to be one measure against global warming and to build a system for recovering materials and energy utilizing biomass, is the embodiment of our management principle, which is "Takuma will strive for social contribution, corporate value enhancement, long-term corporate development and all stakeholders' satisfaction by yielding goods and services needed and recognized as valuables in society."

Furthermore, as an effort for CSR, through the "Takuma Group Coordinating Committee for Compliance & CSR Promotion," we conducted a "Dialogue with Stakeholders" with each group company. I believe that this is also valuable for advancing our corporate group management. In addition, we expanded the participation of all our employees in compliance and CSR education.

Along with the above types of efforts, I am also very honored to receive high evaluations about the continuation of our CSR awareness surveys and customer satisfaction surveys.

On the other hand, we will take the criticisms indicated to heart. I want to apply this advice in the promotion of CSR management in the future and in the preparation of even better CSR reports starting with the next edition. I also feel that the "R" in CSR is shifting from "responsibility" to "respect," and that how society wants businesses to be is also changing as the times change. We will continue to press forward in our efforts to meet the expectations of all our stakeholders, so I hope that you will offer us your support and cooperation.



Takuma Co., Ltd.

2-2-33 Kinrakuji-cho, Amagasaki, Hyogo 660-0806 Japan

Website: <http://www.takuma.co.jp/english/>

● For further information on the CSR Report, please contact:

General Affairs Department

TEL: +81-6-6483-2609 FAX: +81-6-6483-2751

CSR Department

TEL: +81-6-6483-2673 FAX: +81-6-6483-2620

In consideration of the environment, this report was printed using a "waterless printing" process and uses paper certified by the FSC and ink derived from vegetable oil.

