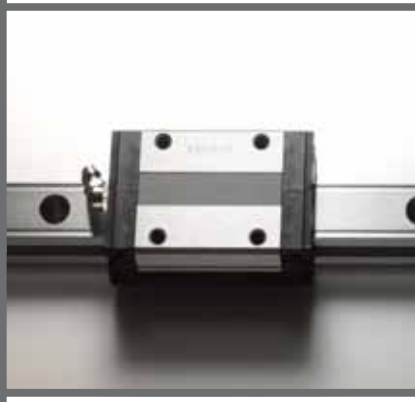
Harmony with the environment

Amid mounting calls for global-scale efforts to address environmental challenges, businesses are now expected to pursue constructive initiatives to help protect the environment.

THK practices energy conservation to the maximum extent possible in its business activities. While striving to conserve energy and resources, THK also focuses on making environment-friendly products, in order to help preserve the natural environment for the benefit of the community at large.



Topics in 2010

Integrated ISO 14001 Certification

Having been individually certified in the past, THK's five major plants in Japan (YAMAGATA, KOFU, MIE, GIFU, and YAMAGUCHI) acquired integrated ISO 14001 certification for their environmental management systems in 2010.

Wastewater treatment at DALIAN THK Plant

In December 2010 a wastewater treatment facility was installed at the DALIAN Plant to prevent sewage from being discharged into rivers, lakes, and the sea.

Promoting energy conservation

A message
from managing director

Boosting efficiency is an important prerequisite for saving resources and energy.

Amid calls for measures against the depletion of resources and global warming, our nation, industry, households, and the global community are applying themselves in various ways. THK is focused on:

(1) Energy conservation and preventing global warming,
(2) Material conservation and zero emissions, and
(3) Harmful substance controls,

as the most pressing issues for environmental preservation.

THK has devoted itself to developing a broad range of linear motion systems, such as LM Guides and Ball Screws, and supplying these to various industries, in keeping with its corporate philosophy: “providing innovative products to the world and generating new trends to contribute to the creation of an affluent society.” These products, as basic machine components, significantly contribute to the energy-saving operation of various machines.

Production of these linear motion systems requires the use of raw materials like steel and plastic resin and the consumption of large amounts of energy in the form of electricity and heavy fuel oil. We manufacturers, therefore, must not only consider the contribution a product makes to society, but also exert every effort to conserve resources and energy when designing a product and in the production processes.

It is important when using natural resources, therefore, to introduce a system for minimizing mill ends and processing loss, and achieving 100% recycling of any generated waste. Another vital issue involving the manufacturing process is the development of energy-saving production equipment and conversion to the use of energy-saving air conditioning and lighting equipment.

Furthermore, in order for these practices to become firmly established, not only the company but each single employee must be keenly aware at all times of the necessity for achieving utmost efficiency. Concern for the environment, therefore, means our generation must not deplete our finite resources; rather, we must conserve them for future generations. With this in mind, we have established a Committee for the Promotion of Energy Conservation at THK Headquarters and have held energy conservation meetings at our plants in an effort to reduce greenhouse gas emissions. The Committee for the Promotion of Energy Conservation is composed of management, with the CEO as its chairman. It makes decisions on company-wide issues, determines the course of action for solving problems, and issues instructions to all Group companies. Energy conservation meetings are conducted by the plant head and plant management, who are charged with promoting energy conservation in the production divisions of their respective plants, which account for 95% of total energy use.

I was asked by the Committee for the Promotion of Energy Conservation to serve as Energy Management Control Officer for the entire company. In this capacity, I will be striving to raise energy efficiency as instructed by the committee and request the cooperation of all of you in this endeavor.

Toshihiro Teramachi
Managing Director
THK CO., LTD.

Promoting environmental management

Q Please describe the basic philosophy underlying THK's promotion of environmental activities.

A **The THK's philosophy is set forth in its basic environmental policy. THK sets targets and identifies specific areas where efforts are needed on the basis of this policy.**

Basic environment policy

Since the development of the LM Guide, the THK has contributed to both society and the economy through its pioneering role as a manufacturer of linear motion systems and machine components. THK believes that it is a company's social responsibility to leave the global environment in good condition for the next generation, which is why THK is undertaking the following initiatives to continually decrease environmental burdens and maintain and improve the natural environment.

THK's basic policy regarding the environment

1. Conservation of the environment is considered a major management concern, and we are striving to accurately grasp the impact on the environment produced by the Group's business activities, products, and services. Every division participates by setting relevant environmental goals.
2. In addition to following environmental laws, we set self-imposed standards for Group companies and regularly review them to improve the efficiency and effectiveness of our environmental management.
3. We will continually promote the development of products that help reduce environmental burdens.
4. We will continually promote conservation and recycling of resources, with particular attention to reducing and recycling waste from our manufacturing divisions.
5. To promote greater unity in our environmental activities, we will provide guidance and support to our affiliates and business partners, and strive to work in cooperation and harmony with local communities.
6. This basic policy regarding the environment shall be disseminated to all divisions in the Group through education, training, and activities designed to improve awareness. We will disclose information concerning the environment to parties within and outside the Group in a timely manner.

■Environmental activities and targets

Area	Objectives and goals	Main activities
Energy conservation and preventing global warming	Cut greenhouse gas emissions	① Energy diagnostics ② Energy conservation ③ Use of clean energy
Material conservation and zero emissions	Reduce environmental impact: achieve zero emissions	① Input controls (materials, parts and by-products) to reduce usage and boost per-unit yields ② Controls on emissions and final waste disposal ③ Material reuse and recycling
Harmful substance controls	Eliminate and control harmful substances in THK Group production and distribution activities	① Substitution of PRTR-designated substances ② Investigation and substitution of chemical substances covered by the REACH regulations ③ Green procurement and purchasing
Environment-friendly products and services	Develop products and supply services using LCA (Life Cycle Assessment) methods	① Caged Ball Product series development ② Extension of service life and maintenance-free periods

Environmental management system

Q What progress have you made in achieving your targets and in acquiring ISO 14001 certification?

A **In fiscal 2010, we reached our targets for reduction of CO_2 emissions and achieving zero emissions. We also obtained integrated ISO 14001 certification for THK's five major plants in Japan.**

Environmental management system

THK is actively working to acquire environmental management (ISO 14001) certification for all its production sites in Japan and overseas. After having obtained individual certification, THK's five major plants in Japan (YAMAGATA, KOFU, MIE, GIFU, and YAMAGUCHI) obtained integrated certification in fiscal 2010. Faced with ever stricter policies against global warming, depletion of resources, and harmful chemical substances, the company opted for this integrated approach to be able to initiate the systematic collection of data that previously had been managed by each plant, consolidate it and use it to build up a system that allows taking prompt company-wide measures. Integration will also enable THK to go about environmental improvements in an organized and swift manner.

Environmental activities are carried out by all THK Group companies. The Risk Management Division's Environmental Management Department, located at THK Headquarters, coordinates activities carried out by THK's administrative, production, and distribution divisions.

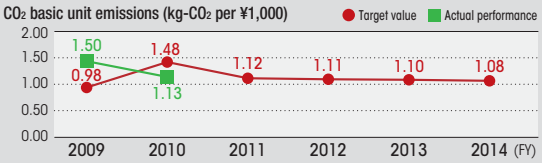
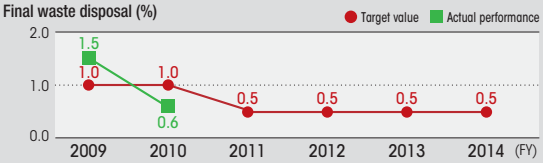
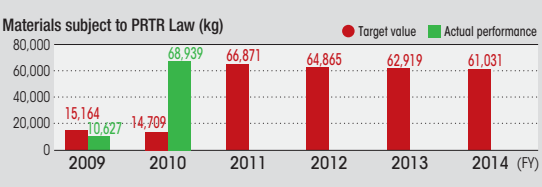
In fiscal 2010, THK met its targets for energy conservation, preventing global warming (CO_2 basic unit emissions), material conservation, and zero emissions (final waste disposal volume), but failed to meet its targets for harmful substance controls (use of PRTR-designated substances) due to the addition of another chemical (methyl naphthalene) as a result of a sudden revision of the law during that period.

ISO 14001 certified business locations

Location	(Individual certification)	Date of certification	Certifying body
YAMAGATA Plant	Sept. 10, 1999	Dec. 17, 2010 (Registration renewal date)	JQA
KOFU Plant	Dec. 28, 2000		
YAMAGUCHI Plant	Feb. 2, 2001		
MIE Plant	Sept. 6, 2002		
GIFU Plant	Dec. 24, 2004		
TRNA* (America)		Jun. 13, 2001	SQA
THK RHYTHM, Headquarters/GOKYU Plant		Dec. 20, 2001	JIA
THK RHYTHM KYUSHU		Dec. 20, 2002	JIA
TMA (America)		Jul. 14, 2003	QMI
TME (Europe)		Feb. 3, 2004	AFAQ
THK NIIGATA		Oct. 21, 2005	JQA
THK RHYTHM INASA Plant		Dec. 20, 2006	JIA
THK WUXI (China)		Jan. 7, 2008	CQC
DALIAN THK (China)		Dec. 18, 2008	TUV
THK LIAONING (China)		Jan. 12, 2010	TUV

* TRNA : THK RHYTHM NORTH AMERICA CO., LTD.

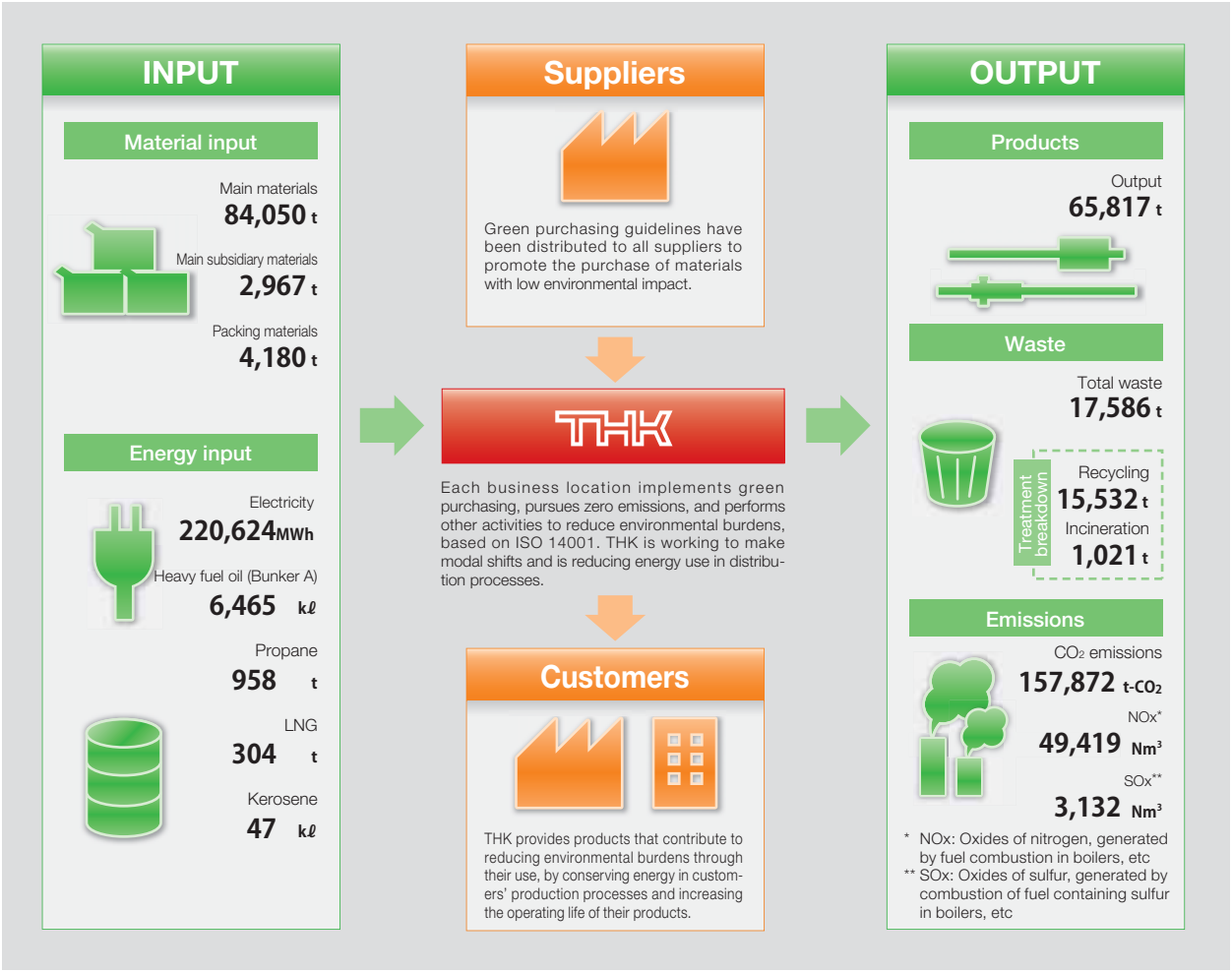
THK's environmental targets

No.	Field	Fiscal 2011 targets	Midterm targets(by fiscal 2014)
1	Energy conservation and preventing global warmning	Reduce CO_2 basic unit emissions to 1.12 kg-CO_2 per ¥1,000 (1% reduction relative to the 2010 level) Fiscal 2010 target was 1.48; 1.13 actual (target met) **Major efforts in fiscal 2011** (1) Updating and controlled usage of air-conditioners (2) Switching to ecological lighting (3) Updating of power distribution equipment	Reduce CO_2 basic unit emissions by 5% Standard value: 1.13 kg-CO_2 per ¥1,000 (relative to fiscal 2010) 
2	Material conservation and zero emissions	Reduce emissions rate to less than 0.5% Fiscal 2010 target was 1%; 0.6% actual (target met) **Major efforts in fiscal 2011** (1) Breaking down composite materials for recycling (2) Reducing the use of grindstones (3) Reducing the use of packing material	Achieve and maintain zero emissions (less than 0.5% of final waste disposal) Standard value: 1.5% (relative to fiscal 2009) 
3	Harmful substance controls	Reduced the use of PRTR-designated substances to 66,871 kg or less Fiscal 2010 target was 14,709 kg; 68,939kg actual (target not met) * Due to the addition of another chemical (methyl naphthalene) as a result of a sudden revision of the law during that period. **Major efforts in fiscal 2011** (1) Controlled usage of equipment running on heavy fuel oil (2) Updating and controlled usage of forklifts (3) Cutting back on the use of solvents, use of alternative solvents	Reduce use of materials subject to PRTR Law (3% per year) Standard value:68,939 kg (Fiscal 2010 target) 

Environmental impact: The big picture

Q What is the status of THK's management of environmental burdens?

A **Every year THK collects detailed numerical data on its energy consumption and emissions of environmental pollutants and is working hard to reduce both.**



Cost of environmental protection

(¥ million/year)

Category	Investment	Expenditures	Main measures
1) Business areas			
Pollution control	1.7	40.3	Air and water quality measurements, inspection and maintenance of septic tanks, etc.
Environmental protection	40.1	90.4	Introduction of energy-saving incidental equipment, related construction work
Resource recycling	1.8	121.3	Disposal and recycling of industrial waste
2) Upstream/downstream costs	0.0	1.2	Green purchasing
3) Control activities	4.0	217.0	Acquisition of ISO certification, research of environmental laws
4) R&D (including Development Dept.)	140.9	227.2	
5) Social activities	0.0	3.4	Tree planting and beautification
6) Environmental cleanup	0.0	1.8	Soil restoration
Total	**188.5**	**702.7**	

Notes: 1) Figures on overall environmental burdens and other environmental accounting data represent an aggregate based on data from the following production facilities: THK's five Plants in Japan (YAMAGATA, KOFU, GIFU, MIE, and YAMAGUCHI) : other THK Group Plants in Japan; THK NIIGATA, two THK INTECHS Plants, Nippon Slide, THK RHYTHM CO.,LTD., and THK RHYTHM KYUSHU CO.,LTD.: and five overseas THK Plants; TMA (America), TME (France), DALIAN THK (China), THK WUXI (China), THK LIAONING (China)
2) Figures on NOx and SOx emissions are for THK's five Plants in Japan only.

Material conservation and zero emissions

Q What is the current status of waste reduction and your future vision?

A **In fiscal 2010, we reached our zero-emission target of less than 1%. In fiscal 2011, we will aim for our final target of less than 0.5%.**

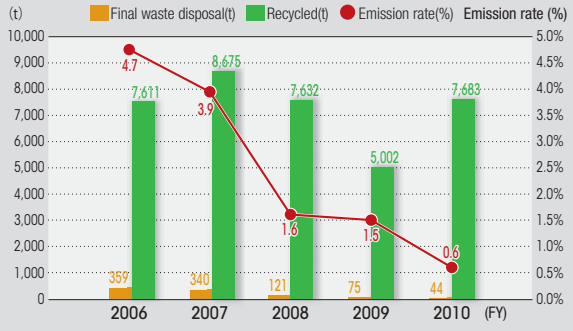
Fiscal 2010 status of material conservation and zero emissions

THK sets its waste-reduction targets based on its emission rate—the volume of waste designated for final disposal, expressed as a percentage of the total volume of waste generated. The waste-reduction target for fiscal 2010 had been set at less than 1%, and THK reached this target; the actual figure was 0.6%.This occurred mainly because recycling of grinding sludge and other materials went according to plan and the component yield was improved.

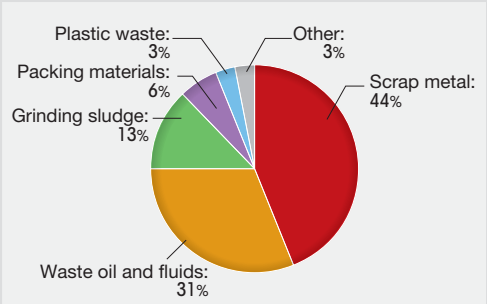
The total amount of waste generated in fiscal 2010 was 7,683 tons, which was 2,681 tons, or approximately 53%, more than in fiscal 2009. Some 44 tons of waste was designated for final disposal (in landfills or by incineration), which was 31 tons, or 41%, less than in fiscal 2009. The total amount of waste reflects an increase in production, and the amount of waste sent to final disposal is an indication of more thorough recycling of grinding sludge, scrap metal, grindstones, plastic waste, and waste oil and fluid.

In fiscal 2011, THK will be forging ahead to achieve its final target of zero emissions of 0.5% by (1) breaking down composite materials (materials made from two or more constituent materials) for recycling, (2) reducing the use of grindstones, and (3) reducing the use of packing materials.

■Trends in waste generation



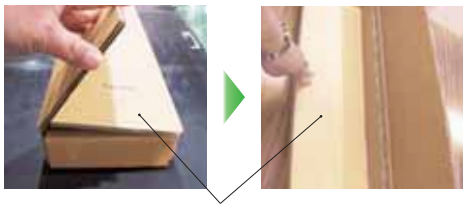
■Waste



Packing materials

The GIFU and YAMAGUCHI Plants worked on making shipping boxes returnable, changing the shape of packing cartons, and reducing the amount of packing materials and packing film used. Changing the shape of shipping boxes involved cutting off excess portions of carton, without compromising the original strength of the boxes. By these measures, the plants reduced the amount of cardboard used by approximately 41 tons/year, and the amount of packaging film by approximately 6 tons/year.

The next steps designed to achieve further reductions in packing materials will be to encourage the sales offices to use returnable shipping boxes and making improvements to the packing materials.



These portions were reduced by half

Water conservation in plants

DALIAN THK has taken water conservation measures that include: (1) Posting signs at water taps, showers and wash basins advising people to save water, (2) Collecting the runoff from air-conditioners for use as an emergency water supply (for flushing toilets), (3) Installing pressure control devices on showers in the company dormitory, (4) Providing periodic instruction on water conservation, and (5) Posting notices on the plant bulletin boards.

Water use at the DALIAN THK dormitory, which depends on the level of activity but roughly accounts for 80% of water used (including water used in the cafeteria) at DALIAN THK, was 25.4 tons per person in 2009 in the three-month period from July to September, but declined to 23.4 tons in 2010, which represents an 8% reduction.

The plant plans to maintain these measures in the future, and at the same time change the negative connotation of “not being able to use water” to a positive one of “conserving water for future use.” The entire workforce is devising to be innovative and take positive action to ensure that the precious water resources passed down from their forefathers will be there to be enjoyed by future generations.

Sign advising people to save water

Energy conservation and preventing global warming

Q What efforts has THK made to reduce CO_2 emissions and curtail energy use?

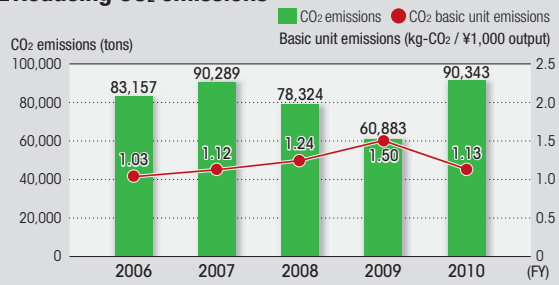
A **Besides replacing various equipment with more environment-friendly types, we are analyzing our power consumption, and are engaged in all-out energy-saving activities.**

CO_2 emissions in fiscal 2010

THK sets targets for reducing CO_2 emissions, using basic units (CO_2 emissions divided by production value). In fiscal 2010 the target basic unit was set at 1.48, and the actual result was 1.13, reflecting an across-the-board improvement of roughly 24%. But as a result of a drastic increase in production, CO_2 emissions increased in absolute terms by approximately 29,460 tons, from 60,883 tons of CO_2 in fiscal 2009 to 90,343 tons in 2010, for a roughly 48% increase compared to the previous year.

Energy-saving initiatives carried out by THK in fiscal 2010 included conversion to energy-saving lighting, air-conditioning and compressors, and in fiscal 2011, it is planned to extend these measures to other incidental equipment. THK also plans to re-analyze energy usage to be able to pinpoint how much energy is used where, and how much of this is fixed consumption. The result will then be tied in with all-out energy conservation activities, introduction or development of energy-saving equipment, and similar measures.

Reducing CO_2 emissions



Initiatives aimed at light fixtures

In fiscal 2009, TMA started a gradual conversion of light fixtures inside the plant from mercury lights to fluorescent lights. By now, roughly 40% of lights have been converted. These measures helped the plant to control its power consumption and at the same time reduced its CO_2 emissions.

Reductions achieved

Reduction in power consumption: 17,676 kWh/month
Reduction in CO_2 emissions: 13,870 kg/month
(AFP standard*: 0.78 kg/1 kWh)

In the U.S. one automobile is said to emit approximately 5,440 kg of CO_2 per year. Using this measure, the switch to fluorescent lights will bring about a reduction in CO_2 emissions equivalent to the emissions of roughly 30 automobiles per year. Fluorescent lights also provided better lighting in the rooms than mercury lights.

In fiscal 2011, the plan is to convert 60 to 70% of all lighting inside the plant to fluorescent lights.

* AFP standard : Carbon emission coefficient used by U.S. power companies

Use of window film

In order to improve indoor cooling efficiency, THK NIIGATA installed window film on the outside of windows on the west and south sides of the office building's first and second floors, which are exposed to intense sunlight. This prevents a rise in power consumption due to increased air-conditioning use every year as summer temperatures rise. The window temperature was as much as 5 degrees lower after applying the film than before, and the power savings is estimated at 1,600 kWh per year.

Next, an appropriate type of film will also be applied to the windows of the external wall of the production plants in an effort to further reduce power consumption.

Introduction of LED lighting

In April, Plant 1 at the KOFU Plant replaced the ordinary fluorescent lights used up to now (40W) where an external cylindrical grinding machine is installed with 118 LED fluorescent lights (20W). As a result, power consumption was reduced by 50% and CO_2 emissions by 2 tons. The new light fixtures have also improved lighting conditions in the workplace and boosted working efficiency and safety management. Plans are to convert more of the plant's lighting to LED lamps.

In May, DALIAN THK installed an LED lighting system equipped with solar panels for outdoor lighting on the plant premises. This system converts sunlight to electric energy that is stored in a battery. When the battery is charged, optical sensors automatically turn the LED lights on and off as needed. The system is maintenance-free and is good for approximately 9 years of continuous use.

The plant also installed 50 sets of LED units for indoor lighting, and hopes to introduce more LED lighting inside and outside the plant buildings to reduce its power consumption and CO_2 emissions.

LED light fixture with solar panel

Air-condition systems

The KOFU Plant replaced its water-cooled air-conditioning system package (integrated air conditioner with built-in chiller and blower) with an air-cooled system.

This system consumes 57% less electricity than the previous one, and helps reduce CO_2 emissions by 17,084 kg/year. This system saves 600 m^3/year of water since it is a non-water-cooled system.

The system also helps to save man-hours as it can be changed over between cooling and heating by simply pushing a button instead of having to open and close valves and drain coolant, and its simple maintenance translates to power savings. It also maintains a constant room temperature, creating a more agreeable atmosphere in the workplace.

An air-cooled air conditioner

In an effort to reduce energy consumption, the air-conditioning inside the THK LIAONING Plant was changed over from mechanical control (constant rate operation) to inverter operation (thermo sensor control). The shift to inverter control has also made the change-over between summer and winter mode easier and prevented operational errors.

The next step that is planned for achieving still greater energy savings is to remodel the temperature and humidity controlled areas within the plant.

Effective utilization of boilers

The YAMAGUCHI Plant has taken measures to reduce its use of heavy fuel oil. The plant's air conditioners were run on waste heat produced by cogeneration, but the operating hours of the private power generator, which uses heavy fuel oil, were shortened in line with the above measures. To make up for the power deficit, the decision was made to harness waste heat from boilers that generate less CO_2. This brought about a 25% reduction in CO_2 emissions and contributed significantly to energy conservation, while keeping the air conditioners running at the same rate.

Periodic boiler inspection

Plans are to review the contract with the power company and to further shorten the operating hours of the private power generators while safeguarding a stable power supply to the plant, and concurrently, to raise the operating ratio of the boilers to reduce CO_2 emissions by another 20%.

Energy conservation patrols

The GIFU Plant carries out the following energy conservation patrols: (1) Air-conditioning patrols (to check the temperature settings of air conditioners, cleanliness of filters, etc.), (2) Lighting patrols (to check for unnecessary fluorescent lights, turn off lighting in unmanned areas, etc.), and (3) Oil/air/machinery patrols (to check for oil and air contamination, main power supply of unused or rarely used machinery, etc.). The results of the patrol are checked against those of the previous patrol, and if there are unresolved or new problems, improvements will be initiated through a member of the energy conservation patrol or the department manager. Starting in fiscal 2011, the checks will be intensified, and members of energy conservation patrols will not only conduct inspections, but will also be involved in promoting the actual remedial measures.

Inspecting air conditioner filters in the assembly bay

Raising compressor efficiency

The THK LIAONING Plant succeeded in raising the operating efficiency of its compressors by taking a number of measures, including:

(1) Regular inspections of air hoses and compressors and correcting air leakages,
(2) Reduction in the pressure setting of compressors from 0.63 MPa to 0.59 MPa to save energy, and
(3) Regular cleanings of the inside of cylinders to improve the lubrication effect.

These measures brought energy savings of approximately 50% compared to prior usage.

Periodic compressor inspection

Harmful substance controls

Q What measures has THK taken to reduce the use of chemical substances impacting the environment?

A **THK is both reducing its use of harmful substances in products through green purchasing and by decreasing the use of PRTR-designated substances in production processes.**

Reduced use of PRTR-designated substances

As part of its framework for controlling harmful substances—substances that could adversely affect human health and damage ecosystems—THK is working to reduce its Production Division's use of chemical substances that are subject to the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., also known as the PRTR Law,* and has set an annual target of reducing such use by 3% in comparison to the previous year. Due to the addition of methyl naphthalene contained in heavy fuel oil as a result of a sudden mid-term revision of the PRTR law, total harmful substances handled in fiscal 2010 amounted to 68,939 kg, 6.4 times the figure for fiscal 2009 (10,627 kg). Without methyl naphthalene, however, the total volume handled added up to 13,599 kg, which was less than the targeted 14,709 kg.

* PRTR : Pollutant Release and Transfer Register. The PRTR Law was enacted to facilitate better control over and reporting of emissions of designated chemical substances.

■Substances subject to the PRTR Law (kg)

Type	Amount handled	Amount emitted into the atmosphere
Xylene	2,208	34
Toluene	3,592	107
Ethyl benzene	606	17
Benzene	234	38
Methyl naphthalene	55,788	-
Other	6,510	-
Total	**68,939**	**197**

Reduction in a PRTR-designated substance

As a result of revisions to the PRTR Law, three new chemical substances at THK RHYTHM were subject to the law. The plant handled 2 tons of one of these, N,N-dicyclohexylamine, on a regular basis and learned that a notice had to be filed with the authorities. N,N-dicyclohexylamine is contained in four types of water-soluble cutting oils used in the plant, but efforts began to find replacements that do not contain PRTR-designated harmful substances. The plant discussed the matter with several manufacturers under the condition that the products have an equal or longer life span than the currently used types and are capable of maintaining the life of cutting tools. After conducting trials, the plant was able to replace 3 out of the 4 water-soluble cutting oils currently used.

In this way, the plant succeeded in reducing its use of N,N-dicyclohexylamine from 2,000 kg to 200 kg.

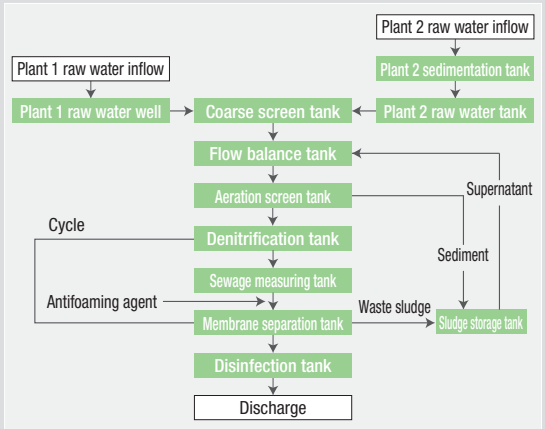
Adoption of wastewater treatment equipment

In December, DALIAN THK installed a wastewater treatment unit to fulfill its commitment to manufacturing products that contribute to reduce the burden of the environment, to reduce waste, to recycle, and to abide by environmental protection laws.

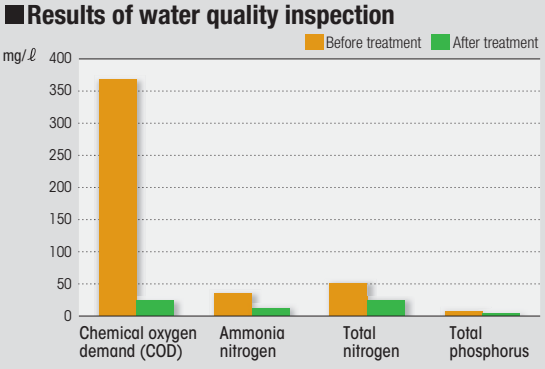
DALIAN THK was previously classified as a Class 3 wastewater emitter according to the national standard of the People's Republic of China, but was able to advance to a Class 1 emitter with installation of the wastewater treatment unit. By preventing its sewage from being discharged into rivers, lakes and the sea, the plant has reduced environmental hazards and improved the surrounding environment.

DALIAN THK will continue to remain strongly aware of the motto "共建生态文明，共享绿色未来 (Let's join in building an ecology-oriented culture, and enjoy a green future together)" based on China's theme for World Environment Day on June 5, 2011 announced by the Chinese Environment Ministry, and to adhere to the standards of the People's Republic of China in protecting the environment.

■Water treatment at DALIAN THK



■Results of water quality inspection



Green distribution

Q What measures does THK have in place to reduce CO_2 emissions in its transport of products?

A **THK is working to integrate transports, improve load ratios, and effect a modal shift to means of transportation that place less of a burden on the environment.**

Green distribution

THK's Distribution Center, operating through Distribution Centers, is engaged in green distribution activities aimed at reducing environmental burdens throughout the entire distribution process. THK is pursuing a variety of initiatives, such as promoting a modal shift and integrating truck routes, based on two key principles of green distribution: reducing CO_2 emissions and improving transport efficiency.

Green Distribution Committee members from THK's seven Distribution Centers throughout Japan have met regularly to promote green distribution by measures such as reviewing regular chartered shipping routes, improving load ratios, and promoting modal shift, integration of truck transport routes, and sharing of pallets between different Distribution Centers to do away with the need to recovering pallets. As a result of these efforts, the overall load ratio on chartered shipping routes increased by roughly 10% at the end of the fiscal year over the first of the year. In August, THK also started to review the stacking method inside containers for shipments from plants in China to Japan. While 12 containers had been previously used, this number was reduced to 8, cutting the number of containers used per year by 32.

Shared post pallets used on chartered shipping routes between group companies (CHUBU Distribution Center)

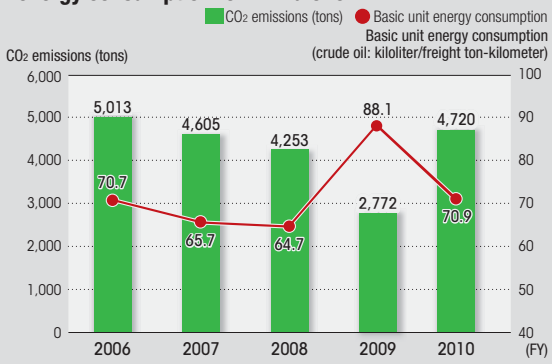
Shipping container

Transport-related CO_2 emissions

In fiscal 2010, due to an increase in transport volume, CO_2 emissions increased by 1,948 tons (approximately 70%) as compared to the previous year, totaling 4,720 tons. Basic unit energy consumption, on the other hand, improved approximately 20% from 88.1 the previous year to 70.9 this fiscal year. This was made possible by a large increase in the modal shift rate for shipments from the Distribution Centers of THK's seven major plants in Japan to customers from 1% in fiscal 2009 to 9% in fiscal 2010.

New initiatives took off in fiscal 2010, including shifting from trucks to ships some of the shipments destined for overseas locations from the YAMAGUCHI Distribution Center to Narita Airport. In fiscal 2011, the plan is to improve transport efficiency further by integrating chartered truck operations, improving load ratios, and intensifying modal shift.

Trends in transport-related CO_2 emissions and specific energy consumption for THK alone



Modal shift

While THK is pursuing modal shift* in its efforts to reduce transport-related CO_2 emissions, the company's focus in fiscal 2010 was on revising domestic distribution of shipments destined for Europe. More precisely, transport between the YAMAGUCHI Plant and Narita Airport was shifted from trucks to rail and maritime transport. Given the large size of shipments to Europe and the long transport distance of approximately 1,000 km from the YAMAGUCHI Plant to Narita Airport, this modal shift brought about a drastic decrease in CO_2 emissions from 7.5 tons of CO_2/week for truck transport to 2.6 tons of CO_2/week, which is a reduction of 226 tons of CO_2 per year after the modal shift.

* Modal shift : A transition from transportation by truck to shipment by rail and sea, to permit shipping in bulk and reduce CO_2 emissions.

Transfer in special containers from a ship to the airport