

Promoting Environmental Management

Basic Environmental Policy

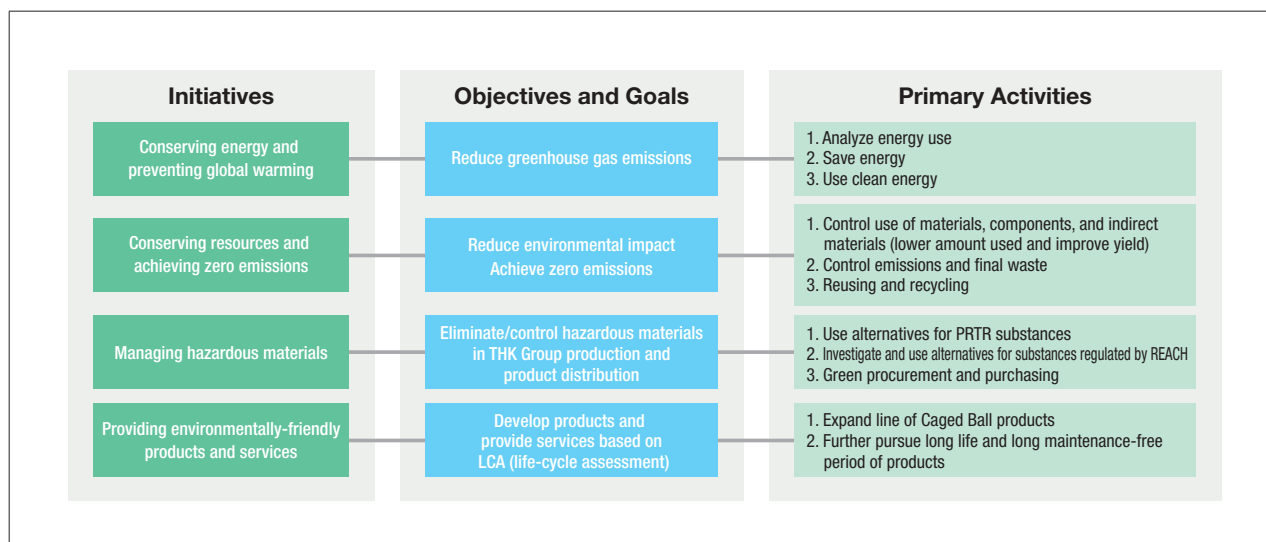
The THK Group contributes to both society and the economy through our pioneering role as manufacturers of Linear Motion Guides and other products. We also believe that it is a company's social responsibility to leave the global environment in a healthy state for the next generation, which is why we are promoting the following initiatives to continually decrease our environmental impact and to sustain and improve the natural environment.

THK Group's Basic Environmental Policy

(Revised on June 3, 2013)

1. We consider conservation of the environment to be a major management challenge, and we are striving to accurately understand how our business activities, products, and services impact the environment. All divisions set appropriate environmental goals to address this challenge.
2. In addition to complying with environmental laws, we have set self-imposed standards that are reviewed regularly to improve the efficiency and effectiveness of our environmental management.
3. We will continually promote the development of products that help reduce environmental impact.
4. We will cut down energy use in our business activities and continually promote the reduction of energy consumption and greenhouse gas emissions.
5. With a particular focus on the reduction and recycling of waste from our manufacturing division, we will not only continue to promote the saving and recycling of resources, but also strive to prevent pollution.
6. To achieve greater collaboration with regard to our environmental activities, we provide guidance and support to our affiliate companies and business partners, and also strive to work in cooperation and harmony with the community.
7. This basic environmental policy is disseminated to all divisions in the group through education, training, and awareness campaigns, and we facilitate the timely release of information on the environment both within and outside the Group.

Environmental Initiatives and Goals



Environmental Management System

Environmental Management System

THK has acquired ISO14001 Environmental Management System certification at its domestic and international production facilities. We strive for continuous improvement by utilizing the PDCA management cycle at each production base. In order to promote environmental activities throughout the THK Group, the Risk Management Division Environmental Management Department at our headquarters serves as the nexus for environmental impact reduction efforts conducted between the production, administrative, and distribution divisions. This department also checks on the progress

of environmental activities and expands successful policies to other locations.

Among our three goals for 2015, we were not able to achieve our target for conserving energy and preventing global warming (CO₂ emissions), but we did hit our target for conserving resources and achieving zero emissions (reducing the volume of waste that undergoes final disposal), as well as our target for managing hazardous materials (reducing the amount of PRTR materials we use).

ISO14001 Certified Facilities

Facility	Date certified	Certifying body
YAMAGATA Plant, KOFU Plant, YAMAGUCHI Plant, MIE Plant, GIFU Plant	Dec. 17, 2010 (Renewal date)	JQA
TRNA (US)	June 13, 2001	SQA
THK RHYTHM Headquarters & HAMAMATSU Plant	Dec. 20, 2001	JIA
THK RHYTHM KYUSHU Plant	Dec. 20, 2002	JIA
TMA (US)	July 14, 2003	SAI GLOBAL
TME (France)	Feb. 3, 2004	AFAQ
THK NIIGATA CO., LTD.	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

Facility	Date certified	Certifying body
THK LIAONING (China)	Jan. 12, 2010	TUV
TRTC (Thailand)	July 9, 2010	URS
TRGC (China)	Dec. 9, 2010	SGS
TRMS (Malaysia)	Oct. 25, 2011	DQS
THK INTECHS MISHIMA Plant & SENDAI Plant	Mar. 21, 2013	ClassNK
TRA Michigan (US)	Oct. 24, 2014	DQS
TRA Canada (Tillsonburg)	Feb. 8, 2015	DQS
TRA Canada (St. Catharines)	Feb. 10, 2015	DQS
TRCC (China)	Mar. 17, 2015	BUREAU VERITAS
TRA Czech (Czech Republic)	Apr. 16, 2015	DQS
TRA GmbH (Germany)	Dec. 17, 2015	DQS

THK Environmental Targets

No.	Task	2015 Results & 2016 Targets	Mid-Term Targets (by 2018)																					
1	Conserving energy and preventing global warming	<p>CO₂ emissions</p> <p>■ 2015 result 2015 target was 0.91. Result was 0.92. (Target was not met.)</p> <p>■ 2016 target 0.91 tons CO₂ per 1 million yen (1% reduction from previous year)</p> <p>Main tasks for 2016</p> <ol style="list-style-type: none"> 1. Update air conditioning units to energy-efficient units 2. Change to energy-efficient lighting (LED) 3. Introduce air leak detection system 	<p>CO₂ Emissions</p> <p>Baseline: 0.92 tons CO₂ per 1 million yen (2015 result)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Target</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>1.08</td> <td>1.04</td> </tr> <tr> <td>2014</td> <td>1.03</td> <td>0.92</td> </tr> <tr> <td>2015</td> <td>0.92</td> <td>0.91</td> </tr> <tr> <td>2016</td> <td>0.91</td> <td>0.91</td> </tr> <tr> <td>2017</td> <td>0.90</td> <td>0.90</td> </tr> <tr> <td>2018</td> <td>0.89</td> <td>0.89</td> </tr> </tbody> </table>	Year	Target	Result	2013	1.08	1.04	2014	1.03	0.92	2015	0.92	0.91	2016	0.91	0.91	2017	0.90	0.90	2018	0.89	0.89
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2	Conserving resources and achieving zero emissions	<p>Zero emissions rate</p> <p>■ 2015 result 2015 target was less than 0.50%. Achieved 0.26%. (Target was met.)</p> <p>■ 2016 target Less than 0.50%</p> <p>Main tasks for 2016</p> <ol style="list-style-type: none"> 1. Recycle grinding wheels 2. Recycle plastics 3. Thoroughly separate materials 	<p>Zero Emissions</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Target</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>0.55</td> <td>0.50</td> </tr> <tr> <td>2014</td> <td>0.50</td> <td>0.45</td> </tr> <tr> <td>2015</td> <td>0.50</td> <td>0.26</td> </tr> <tr> <td>2016</td> <td>0.50</td> <td>0.50</td> </tr> <tr> <td>2017</td> <td>0.50</td> <td>0.50</td> </tr> <tr> <td>2018</td> <td>0.50</td> <td>0.50</td> </tr> </tbody> </table>	Year	Target	Result	2013	0.55	0.50	2014	0.50	0.45	2015	0.50	0.26	2016	0.50	0.50	2017	0.50	0.50	2018	0.50	0.50
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3	Managing hazardous materials	<p>PRTR substance use</p> <p>■ 2015 result 2015 target was 60,976 kg. Result was 45,490 kg. (Target was met.)</p> <p>■ 2016 target Use less than 44,125 kg of PRTR substances</p> <p>Main tasks for 2016</p> <ol style="list-style-type: none"> 1. Reduce fuel oil use 2. Control use of equipment that runs on fuel oil and diesel fuel 3. Promote green procurement 	<p>Reduce PRTR Substance Use by 3% per Year (kg)</p> <p>Baseline: 45,490 kg (2015 target)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Target</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>52,755</td> <td>52,755</td> </tr> <tr> <td>2014</td> <td>50,645</td> <td>62,862</td> </tr> <tr> <td>2015</td> <td>45,490</td> <td>60,976</td> </tr> <tr> <td>2016</td> <td>44,125</td> <td>44,125</td> </tr> <tr> <td>2017</td> <td>42,802</td> <td>42,802</td> </tr> <tr> <td>2018</td> <td>41,518</td> <td>41,518</td> </tr> </tbody> </table>	Year	Target	Result	2013	52,755	52,755	2014	50,645	62,862	2015	45,490	60,976	2016	44,125	44,125	2017	42,802	42,802	2018	41,518	41,518
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Environmental Impact Overview

Harmony with the Environment

INPUT

	2014	2015
Main raw materials	94,733 t	84,462 t (-10.8%)
Main indirect materials	3,351 t	3,074 t (-8.3%)
Packaging materials	4,289 t	4,315 t (0.6%)

Energy Input

	2014	2015
Electricity	229,388 MWh	221,304 MWh (-3.5%)
Bunker A fuel oil	3,884 kL	3,916 kL (0.8%)
Liquefied natural gas	182 t	123 t (-32.4%)
Propane	831 t	894 t (7.5%)
Kerosene	47 kL	27 kL (-42.9%)

Suppliers



Green procurement guidelines have been distributed to every supplier to facilitate the procurement of materials with low environmental impact.



In accordance with ISO14001, each facility pursues activities to reduce environmental impact, such as green procurement and efforts to achieve zero emissions. We also implement modal shifts, reducing the energy used for distribution.

Customers



We provide our customers with energy-saving, long-lasting products which help reduce the environmental impact of our customers' production processes.

OUTPUT

	2014	2015
Production volume	77,066 t	71,686 t (-7.0%)

Waste

	2014	2015
Total waste	18,359 t	19,203 t (4.6%)
Recycled	15,981 t	16,598 t (3.9%)
Incinerated	1,831 t	2,102 t (14.8%)

Air Emissions

	2014	2015
CO ₂ emissions	159,745 t-CO ₂	152,453 t-CO ₂ (-4.6%)
NOx ^{*1}	8,391 Nm ³	3,170 Nm ³ (-62.2%)
SOx ^{*2}	2,304 Nm ³	2,509 Nm ³ (8.9%)

***1 NOx (Nitrogen oxides):**
Generated by the combustion of fuel in boilers and other sources.

***2 SOx (Sulfur oxides):**
Generated by the combustion of sulfurous fuel in boilers and other sources.

* This overview of our environmental impact is based on the following production facilities:
Five domestic THK plants (YAMAGATA, KOFU, GIFU, MIE, and YAMAGUCHI) and THK Group plants (THK NIIGATA, two THK INTECHS plants, NIPPON SLIDE, and three THK RHYTHM plants)
Five international THK plants (TMA (US), TME (France), DALIAN THK (China), THK WUXI (China), and THK LIAONING (China))
NOx and SOx figures are for the five domestic THK plants only.

Environmental Conservation Costs

(Units: millions of yen/year)

Type	Investment	Cost	Main activities
1. Business costs	185	240	
Pollution control costs	(63)	(52)	Monitoring air and water quality, performing maintenance on washing equipment and sewage tanks
Global environmental conservation costs	(121)	(59)	Installing energy-efficient auxiliary equipment
Recycling costs	(1)	(129)	Disposing of waste, recycling
2. Upstream and downstream costs	0	20	Green procurement activities
3. Management activity costs	1	198	ISO activities, reducing energy use, managing hazardous materials
4. Research and development costs	83	583	New product development
5. Community activity costs	0	7	Local activities, PR activities
6. Environmental damage costs	0	0	
Total	268	1,047	

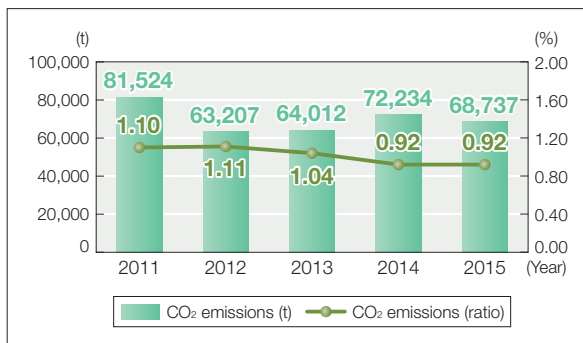
Conserving Energy and Preventing Global Warming

THK's CO₂ Emissions

Our target for reducing our CO₂ emissions is defined in terms of the ratio of CO₂ emissions to production volume in yen. Our target for 2015 was 0.91, but our actual ratio was 0.92, so we were slightly over and did not achieve our target.

We switched to high efficiency air conditioning units, changed from mercury vapor to LED lighting, and repaired our air supply systems at each of our facilities, but we did not reach our target because our use of air conditioning increased, primarily as a safety precaution on humid summer days. However, our actual volume of CO₂ emissions (absolute emissions) decreased about 4.8%, from 72,234 tons to 68,737 tons.

CO₂ Emissions



Installing LED Lighting

TME: In 2015, TME (THK Manufacturing of Europe, France) switched all of the mercury vapor lighting used in Factory 2 to LED lighting (344 bulbs) as a continuation of the lighting replacement project in Factory 1. This change reduced the amount of electricity used per month by approximately 59,000 kWh and improved the illumination inside the plant by about 14%. We aim to further save electricity by replacing the lighting in the office areas in 2016.



TME Factory 2

THK NIIGATA: In 2015, THK NIIGATA replaced around 670 fluorescent bulbs and 26 mercury vapor bulbs with energy-efficient LED lighting, reducing electricity consumption by approximately 217,000 kWh. The installation of the new lighting was not limited to the production floor, but also included the parking lot and offices. Between 2014 and 2015, we replaced 938 bulbs, or 87% of all 1,073 bulbs used at the facility. This reduced annual electricity use by about 318,000 kWh and CO₂ emissions by about 188 tons. We will move forward with improvements in areas where the lights stay off

most of the time, such as aisles and machine rooms, to achieve 100% energy-efficient lighting.



THK NIIGATA Distribution Center

KOFU Plant: At the KOFU Plant, we are continuing to replace our factory lighting with LED bulbs. In 2015, we replaced 86 fluorescent bulbs and 58 mercury vapor bulbs used in the production area with LED lighting. Making use of our past experience, we did some of the installation work ourselves. With this change, our annual electricity use was reduced by approximately 59,241 kWh. Our next high priority project will be replacing the mercury vapor lighting in our high ceilings, which will significantly reduce our energy use.



KOFU Plant Factory 1

Increasing Visibility of Power Consumption at the YAMAGUCHI Plant

In order to use a reasonable amount of power and become an even more energy-efficient facility, the YAMAGUCHI Plant has installed power consumption monitors in each electrical room, creating an internal system to collectively monitor the power use of each piece of equipment.

With this system, power consumption data for factory lighting, air conditioning, power sources, compressors, and outlets is updated every hour and displayed on each computer in the factory. If the power consumed in one hour exceeds the standard, the number on the screen will blink, indicating where excessive power is being consumed.

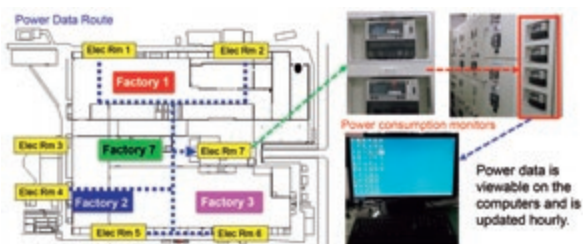
As a result, each department is able to see how much power they are using in real time and immediately take action. With the ability to clearly see (and experience) the results instantaneously, each area has become more conscious of energy conservation, which has led to cooperative, collaborative efforts with other departments to reduce power consumption.

In addition, by arranging and comparing the data from each area both side by side and chronologically, we have gradually come to learn which problems require attention and which improvements are needed, not just in each area or for each piece of equipment, but for our facility as a whole. Continuing to investigate this data will help us to further conserve energy throughout our facility.

Power Consumption Visibility

Objective

We created a system to allow us to see the power consumption of different pieces of equipment, which will clarify where there is waste and where we need to make improvements.



Making Our Cold Forging Equipment Energy-Efficient

For four years, THK RHYTHM has been collaborating with our automotive manufacturer customers on energy-saving measures. This year, we worked on saving energy with our cold forging equipment. Under the guidance of our customers, we used measuring equipment to gain an understanding of our current energy consumption. We then developed sixteen energy-saving measures, including switching from a booster regulator to an electric booster compressor in order to increase the pressure of our compressed air, as well as integrating energy-efficient circuits into our hydraulic fluid and lubrication pumps. As a result of implementing thirteen such measures, we were able to reduce our annual power consumption by approximately 72,200 kWh and the CO₂ emitted from our cold forging process by 3.5%.



Electric booster compressor

First Prize at the Green Curtain Contest

The MIE Plant participated in the city of Matsusaka's annual Green Curtain Contest and won first prize in the group entry category. City residents vote on the winner of each prize, and MIE Plant's entry received the most votes this year.

Since 2011, the year of the Great East Japan Earthquake, the MIE Plant has been growing goya (bitter melons), morning glories, and cucumbers every year along the outer wall of the facility as a way to save energy in the summertime.



Green Curtain Contest award ceremony

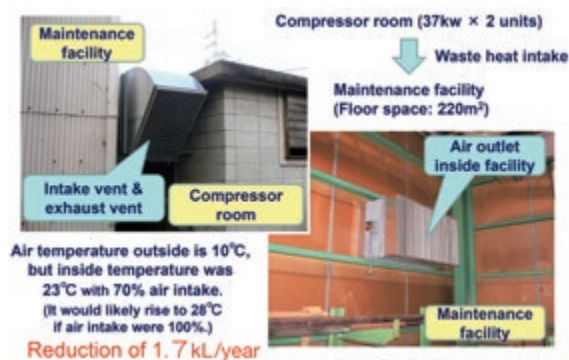
In 2015, we used the bamboo timber left over after a forest thinning to construct a handmade frame and created a 20-meter long green curtain of white goya. The energy-saving results of a green curtain are difficult to put in terms of numbers, but nature (these plants) can provide a cooling, refreshing effect beyond what numbers can express.

Utilizing Waste Heat from Compressors

The MIE Plant implemented an energy-saving modification to utilize the warm air flowing from the compressor room for heating during the winter. This modification involved using a chamber box to channel the waste heat emitted from the air compressors into a duct, and then using fins to forcibly blow the air out of the exhaust vent. The fins are capable of changing the direction of the air to achieve an even flow, as well as closing so that the air can be vented outside when it is not needed.

Now modified to take in hot air, the building is able to get up to a temperature of 28 °C, even if the air temperature outside is 10 °C. (The room temperature can be changed by adjusting the amount of ventilation.) This building was previously heated in part by an oil stove, which was a safety and environmental concern, but this modification allowed us to reduce our energy use by about 1.7 kL of crude oil equivalent (a reduction of about 4.5 tons of CO₂ emissions) and reduce the PRTR substances we use by about 27 kg.

Conserving Energy with Waste Heat



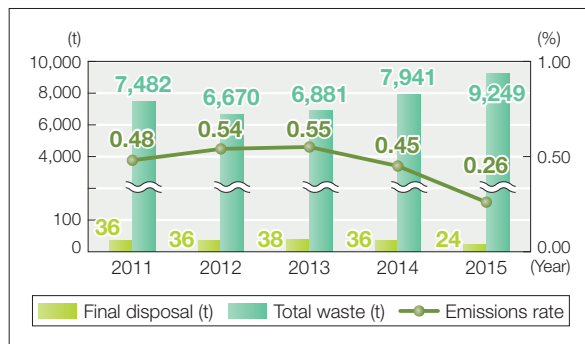
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Conserving Resources and Achieving Zero Emissions

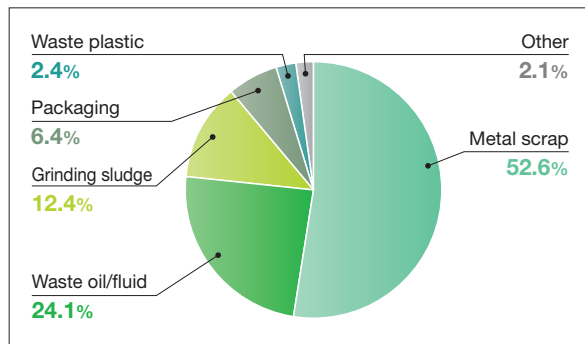
Conserving Resources and Achieving Zero Emissions in 2015

THK is working to conserve resources and achieve zero emissions by thoroughly separating and recycling our waste. Our annual goal for our emissions rate is to be below 0.50% (final disposal volume/total waste volume), and we hit our target for the second year in a row with a rate of 0.26% in 2015.

Waste Generation Volume



Waste Composition



Reducing Steel Waste

TMV (THK MANUFACTURING OF VIETNAM, Vietnam) worked on reducing the changeover test material (test pieces) used in the press (hole drilling) process as a means to conserve resources and reduce waste material. Previously, we had used the same material for our changeover tests as we had for our products, but we have reduced the amount of steel we consume by 2.2 tons annually by making use of the waste material generated during roll forming changeovers, which cannot be used for actual products.

In order to make use of our scrap material, we have created secondary confirmation tools to verify whether the material can be used or not, and we manage this material closely, marking changeover test material to distinguish it from actual product.

Even as this endeavor has reduced our consumption of

materials, our employees have also gained a greater awareness of waste materials, and their work has become more standardized.



Waste material area



Changeover test material

Reducing Water Use

At TME (THK Manufacturing of Europe, France), three new coolant filtration devices using paper filters were installed for six rail grinders. Because the paper filters on these devices can remove grinding dust and oil, and they are also very successful at separating out grinding sludge, they enable us to use about 83%, or 6,500 L, less water per year than the previous coolant filtration devices did. Additionally, one filtration device used to be required per grinding machine, but now one device can be used for two grinding machines. We will add another at the beginning of 2016.



Coolant filtration device

Cleaning the Kano River Floodplain

As part of our environmental beautification activities, the THK INTECHS MISHIMA Plant occasionally performs a clean-up of public areas.

In September 2015, volunteers participated in a clean-up activity organized by the town of Shimizu, picking up trash along the banks of the Kano River. The vast majority of trash was just litter, which drove home the message that everyone's cooperation is needed to keep public areas clean.



THK INTECHS MISHIMA Plant volunteers

Managing Hazardous Materials

PRTR Substance Use

In an effort to reduce the amount of hazardous materials (materials that can have a negative impact on the human body or an ecosystem) that we use, we are reducing our use of chemicals that fall under the PRTR system*. The PRTR substances used at THK are primarily those found in the gasoline and heavy oil we use as fuel. Our goal is to reduce the amount we use by 3% each year, and we were able to significantly reduce the amount of heavy oil used for power generation from 62,862 kg in 2014 to 45,490 kg in 2015—a reduction of 17,372 kg (about 27.6%).

* **PRTR system:** Laws that promote tracking the volume of emissions of specified chemicals into the environment and improving the control of these substances.

(kg)

Substance	Amount	Air Emissions
Xylene	2,970	28
Toluene	6,648	4,002
Ethylbenzene	1,143	15
Benzene	183	31
Methylnaphthalene	30,611	163
Other	3,935	—
Total	45,490	4,239

Updating Our Washing Equipment to Reduce Hazardous Waste

THK RHYTHM has updated the automatic washing equipment that washes the reusable plastic containers used to ship products. Before, the oil concentration of the water discharged would sometimes approach the upper limit of effluent standards. However, the new washing equipment has an oil collection system, which collects the oil content of the washing fluid, and an industrial waste company now disposes of that liquid waste. As a result, the washing fluid is no longer discharged into the sewer system, and the oil content of the water that is discharged is well able to satisfy the effluent standards. We have also been able to drastically reduce the amount of water we use annually, from 3,120 m³ to 195 m³.



Plastic container washing line

VOICE

Environmental Activities at the YAMAGATA Plant



Shunichi Sato

Manager
YAMAGATA Plant
Environment Education Section

The YAMAGATA Plant was certified under ISO14001 in December 2000 and OHSAS18001 (Occupational Health and Safety Assessment Series) in December 2010. In addition to maintaining a safe work environment, we are engaging in efforts to conserve energy, achieve zero emissions, and manage hazardous materials.

As part of our energy conservation efforts, we have increased the efficiency of our operations with an automatic control system for our compressors and switched over from fluorescent to LED lighting. We will also change the mercury vapor lighting in our production area to LED lighting. Additionally, in March 2016, we will begin improving (updating) our air conditioning/heating system, which has been an outstanding concern for many years, and we aim to finish by the end of June. As the thermal efficiency of our two heavy oil-consuming hot and cold water generators has decreased in the 25 years since their installation, we will replace them with two turbo freezers with good thermal efficiency.

After updating our equipment, the amount of heavy oil we use will decrease by about 446 kL (about 54%), leading to a significant reduction in our CO₂ emissions. Everyone at the YAMAGATA Plant will keep working together to pursue further environmental improvements.

Pursuing Environmentally-Friendly Activities



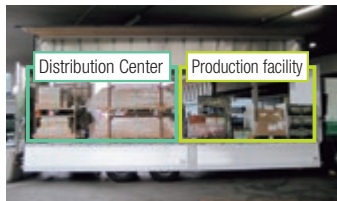
Employees at the YAMAGATA Plant periodically clean up the area around the facility as a way of contributing to the community, such as cleaning up before the Sakuranbo Marathon held in Higashine.

Green Distribution Initiatives

Green Distribution

The distribution division, which is centered around the Logistics Management Unit, continuously engages in *green distribution activities* that seek to reduce the overall environmental impact of our product distribution. We pursue many different activities, such as modal shifts and using trucks more efficiently, in keeping with our basic green distribution policy of reducing CO₂ emissions generated by transportation and improving transportation efficiency.

In 2015, we combined purchasing and sales logistics to improve our load factor. With just purchasing or sales logistics alone, there are times when the amount of cargo is not enough to fill a large truck, but combining them has allowed us to improve our load factor and make our transportation more efficient.

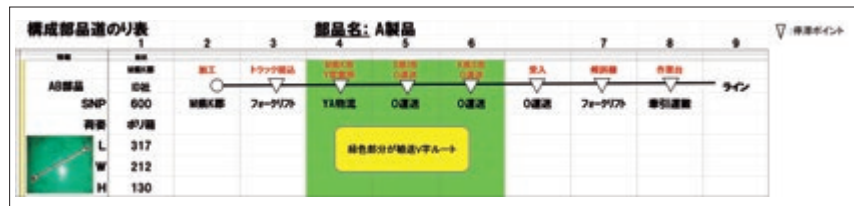


Improving load factor through consolidation

Reducing CO₂ from Truck Transportation

THK RHYTHM uses tracking sheets so that we can visualize the logistics process of our components in order to shorten hauling distances and reduce delays. In addition to using this method, we made further improvements for transportation and distribution within the Kanto region this year. These improvements, which take advantage of the changes in the landscape of logistics presented by the opening of the Ken-O Expressway, were aimed at seeking out new inland freight forwarders near our production facility and making the distance between us and the port as short as possible for truck transportation. These improvements were very much worth

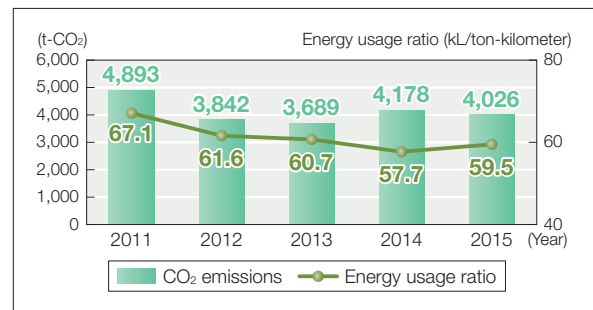
Component Tracking Sheet



Reducing Our CO₂ from Transportation

Our CO₂ emissions from transporting products and components went from 4,178 tons of CO₂ in 2014 to 4,026 tons in 2015, a reduction of 153 tons (about 3.7%). However, due to an increase in diesel-powered truck transportation, our energy usage (ratio of energy use to freight transport in ton-kilometers) increased by about 3.1%, going from 57.7 in 2014 to 59.5.

CO₂ Emissions and Energy Usage from Transportation (THK only)



the effort, as we were able to reduce the distance our trucks travel by 28,320 km per year, lower our CO₂ emissions by about 60%, and cut our transportation costs, as well. We will continue to pursue environmentally-friendly, low-cost distribution in the future.

Purchasing Eco-Cars

Based on our philosophy that "it is a company's social responsibility to leave the global environment in a healthy state for the next generation," TALK SYSTEM is working with suppliers in an effort to help preserve and improve the global environment. As one effort to prevent global warming, a number of the vehicles purchased for use by the sales team are hybrid vehicles, which have high fuel economy and are able to lower the amount of CO₂ emissions. We began purchasing these vehicles in 2006, and we now have eleven. We will endeavor to further reduce



Purchasing hybrid vehicles

our environmental impact by employing green driving practices.

TALK SYSTEM Hybrid Cars (Percent of Total)

