Details & Data

Environmental Report

- This report aims to inform our stakeholders in straightforward language of JTEKT's concept and activities surrounding CSR.
- In FY2013, we have made major changes to the format of the report to make it easier to comprehend, dividing it into a Pick-Up section (leaflet) and a full online report combining both the Pick-Up and a Details & Data section.
- The Details & Data section emphasizes objectiveness, completeness and continuity.
- This section, the Environmental Report, summarizes environmental aspects of FY2012 based on the JTEKT 2015 Environmental Action Plan.

Target period and target organizations/scope

Target period

FY2012 (April 2012 - March 2013)

* Some items include content from other periods.

Target organizations and scope

All JTEKT Corporation activities

Management of the JTEKT group is carried out on a group-wide basis and includes elements such as environmental data measurement and control based on a uniform standard. Some items also show the performance of our domestic affiliated companies and overseas local affiliates. As a general rule, if there are changes in the tallying scope, we revise data dating back to the past.

Reference guidelines

- ◎ GRI (Global Reporting Initiative)
  "Sustainability Reporting Guidelines 2011 (3.1 edition)"
- ◎ Japan's Ministry of the Environment
  "Environmental Reporting Guidelines" (2012 edition)
- ◎ ISO26000 (International Standard for corporate responsibility)
- ◎ A calculation standard stipulated by GHG Protocol Initiative
- ◎ Ministry of the Environment and Ministry of Economy, Trade and Industry
  "Basic Guidelines relating to Calculation of Greenhouse Gas Emissions in Supply Chains"

New! This mark is used to indicate new action begun in FY2012 and information disclosed for the first time in this year's report.

Environmental data for each operation base of the JTEKT group can be viewed on the JTEKT website.

http://www.jtekt.co.jp/e/csr/env_data.html

Environmental management

Social background

As environmental issues grow more serious, the expectation for corporate activities to consider the environment has intensified. In particular, expectations of society towards companies who operate on a global level are intensifying year after year.

JTEKT's concept

For sustainable development of the planet

To realize our corporate philosophy of "contributing to the happiness of people and the abundance of society through product manufacturing, the JTEKT group has positioned the environment as one of the main management issues and is involved in action which contributes to the sustainable development of society and the planet. Also, we are exerting our efforts to widen our understanding of the impact corporate activities have on the environment.

JTEKT Group Environmental Vision

▶ Figure-01

Based on the CSR policy, JTEKT established the JTEKT Group Environmental Vision comprised of an environmental philosophy and policy defining global environmental conservation action. We aim to achieve a sustainable society, establishing an action plan and promoting activities to achieve this goal.

JTEKT Group Environmental Vision = Environmental Philosophy + Environmental Policy

Promotion structure

Under the Global Environmental Conservation Committee

▶ Figure-02

JTEKT engages in environmental management led by the Global Environmental Conservation Committee chaired by our company president. The committee is divided into six specialized environmental subcommittees to address issues relating to business activities. These subcommittees set targets based on companywide policies as well as discuss and decide upon measures and control progress.

New organizational structure for specialized environmental subcommittees

In order to strengthen our response to priority issues relating to the environment, in August, 2012, we changed the organizational structure of specialized environmental subcommittees. The main change was that we integrated resource-saving and waste reduction activities, which were previously carried out by separate subcommittees, with the aim of effectively utilize resources, and newly added a water usage reduction activity to form a "Resource Recycling Subcommittee". Also, a "Pollution Subommittee" was newly established to manage chemical substances such as PRTR and PCB.

Environmental management

Figure-01 JTEKT Group Environmental Vision

Environmental Philosophy

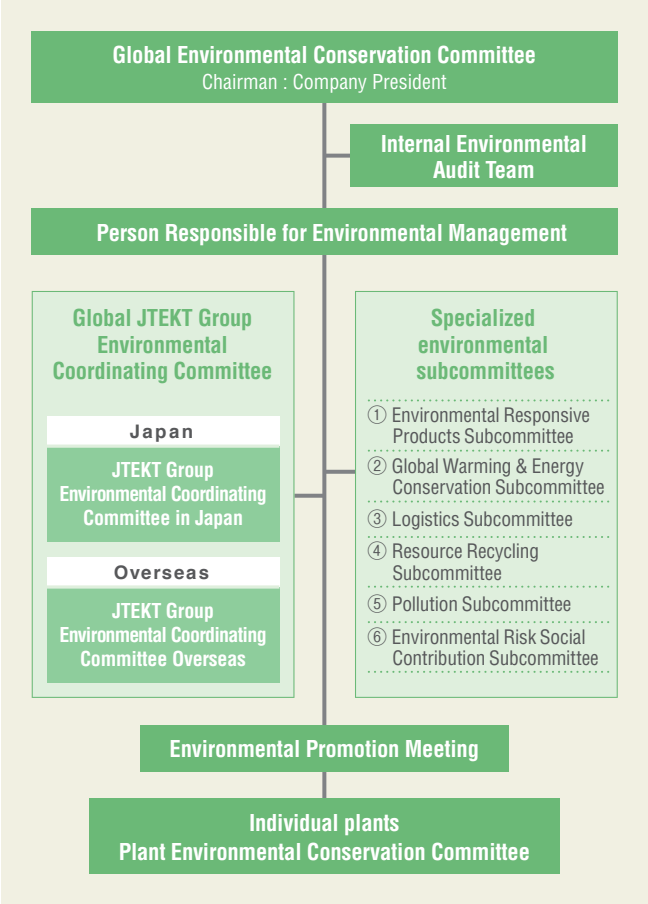
The JTEKT group is aiming to reduce the environmental load of our business activities and products throughout their life-cycle in order to conserve the global environment for future generations and realize a sustainable society.

Environmental Policy

JTEKT, based on a deep awareness of the importance of global environmental conservation, will proactively pursue environmental conservation in all business activities in the fields of bearings, driveline components, steering systems, and machine tools & mechatronics at all plants, head offices and sales offices with the active participation of all employees.

1. Continuously improve our environmental management system to harmonize our business activities with the environment and promote the cooperation of all suppliers of raw materials, etc.
2. Comply with all requirements of environmental laws, regulations, treaties, agreements, etc., related to our business activities and strive to prevent environmental pollution. Also, contribute to society by accurately grasping technical needs related to global environmental conservation and developing products to meet such needs.
3. Raise the environmental awareness of all employees and pursue the following as important environmental management objectives in relation to all our business activities, products and services
   (1) Develop and design environmentally friendly products
   (2) Reduce CO_2 emissions through effective energy utilization
   (3) Reduce waste
   (4) Thoroughly control chemical substances and reduce environmentally burdensome substances
   (5) Reduce primary materials and secondary materials
   (6) Reduce CO_2 emissions in logistics
   (7) Maintain and improve community environments
4. Maintain an environmental conservation promotion structure, clarify the purposes and targets of environment conservation activities, conduct periodic reviews, and pursue environmental conservation activities with the participation of all employees.
5. Maintain an awareness of the community surrounding each business site, maintain good communication with concerned government agencies and local residents, and publicly disclose information on our environmental management activities as necessary.

Figure-02 Organizational chart



Promotion of global environmental management

Figure-03

JTEKT has set up a Global JTEKT Group Environmental Coordinating Committee comprising of 17 affiliated companies within Japan and 32 overseas affiliates. This committee works to further strengthen environmental management.

Figure-03 The scope of consolidated environmental management

Europe

● 9 production companies

JTEKT AUTOMOTIVE UK LTD. (England)
KOYO BEARINGS (EUROPE) LTD. (England)
JTEKT TORSEN EUROPE S.A. (Belgium)
JTEKT HPI S.A.S. (France)
JTEKT AUTOMOTIVE LYON S.A.S. (France)
JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S. (France)
JTEKT AUTOMOTIVE CZECH PLZEN, S.R.O. (Czech Republic)
JTEKT AUTOMOTIVE CZECH PARDUBICE, S.R.O. (Czech Republic)
KOYO ROMANIA S.A. (Romania)

China

● 11 production companies

JTEKT AUTOMOTIVE (TIANJIN) CO., LTD.
JTEKT AUTOMOTIVE (FOSHAN) CO., LTD.
JTEKT STEERING SYSTEMS (XIAMEN) CO., LTD.
JTEKT DALIAN INNOVATION AUTOMOTIVE CO., LTD.
WUXI KOYO BEARING CO., LTD.
DALIAN KOYO WAZHOU AUTOMOBILE BEARING CO., LTD.
KOYO BEARING DALIAN CO., LTD.
KOYO LIOHO (FOSHAN) AUTOMOTIVE PARTS CO., LTD.
KOYO AUTOMOTIVE PARTS (WUXI) CO., LTD.
TOYODA MACHINERY (DALIAN) CO., LTD.
YUBEI KOYO STEERING SYSTEMS CO., LTD.

ASEAN

● 4 production companies

JTEKT (THAILAND) CO., LTD. (Thailand)
JTEKT AUTOMOTIVE (THAILAND) CO., LTD. (Thailand)
KOYO MANUFACTURING (PHILIPPINES) CORPORATION (Philippines)
JTEKT AUTOMOTIVE (MALAYSIA) SDN. BHD. (Malaysia)

Japan

● 13 JTEKT bases
● 17 domestic group production companies(*)

*Koyo Machine Industries Co., Ltd. (Osaka)
Toyooki Kogyo Co., Ltd. (Aichi)
Koyo Sealing Techno Co., Ltd. (Tokushima)
CNK Co., Ltd. (Aichi)
Koyo Thermo Systems Co., Ltd. (Nara)
Koyo Electronics Industries Co., Ltd. (Tokyo)
Daibea Co., Ltd. (Osaka)
Utsunomiya Kiki Co., Ltd. (Tochigi)
HOUKO Co., Ltd. (Aichi)
Toyoda Van Moppes Ltd. (Aichi)
Koyometaltec Co., Ltd. (Mie)
KJK Co., Ltd. (Tokushima)
NIPPON NEEDLE ROLLER MFG. Co., Ltd. (Mie)
Koyo Heat Treatment Co., Ltd. (Osaka)
FORMICS Co., Ltd. (Aichi)
Taiho Co., Ltd. (Kagawa)
NAKATETSU Co., Ltd. (Osaka)

North America/South America

● 8 production companies

JTEKT AUTOMOTIVE TENNESSEE-VONORE LLC (America)
JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC. (America)
JTEKT AUTOMOTIVE TEXAS, L.P. (America)
JTEKT AUTOMOTIVE SOUTH CAROLINA, INC. (America)
KOYO BEARINGS NORTH AMERICA LLC (America)
JTEKT AUTOMOTIVA BRASIL LTDA. (Brazil)
TOYODA KOKI DO BRASIL INDUSTRIA E COMERCIO DE MAQUINAS, LTDA. (Brazil)
JTEKT AUTOMOTIVE ARGENTINA S.A. (Argentina)

*Toyoda-koki Automotive Torsen Co. merged with JTEKT Corporation on October 1, 2012, therefore the target scope of consolidated environmental management for domestic group companies has been changed from 18 companies to 17 companies.

Environmental management

Targets and results

JTEKT Environmental Action Plan 2015 Environmental Action Plan

Figure-01

JTEKT established a 2015 Environmental Action Plan which stipulates action policies and specific targets in order to promote environmental conservation activities which involve the entire JTEKT group and suppliers. We conducted activities as step 1 up until FY2012. In FY2012, we set FY2015 targets as step 2, and will strengthen activities aimed at achieving these targets.
Regarding greenhouse gases, in the 5 years between FY2008 and FY2012 which is stipulated as the 1st commitment period of the Kyoto Protocol, we achieved a 10% reduction in average CO_2 emissions compared with FY1990, achieving our target. Moving forward, we will conduct activities to achieve a 25% reduction in greenhouse gases from what they were in 1990 by the year 2020 and contribute to the realization of international society's goal of cutting greenhouse gases to half of what they were in 2000 by the year 2050.

Figure-01 **2015 Environmental Action Plan**

Area	Action items	Targets and initiatives	FY2012 results of activities	Evaluation	Related pages
Environmental management	(1) Strengthen and promote consolidated environment management	(1) Share the JTEKT Group Environmental Vision	(1) Continued activities with group companies in Japan and overseas (2) Held Environmental Coordinating Committee sessions	○	E_01 E_02 E_07
	(2) Promote environmental activities in cooperation with business partners	(1) Further promote green purchasing (2) Roll out environmentally friendly purchasing guidelines to business partners	(1) Expanded Green Purchasing Guidelines		S_03
	(3) Promote sustainable plant activities	(1) Introduced of reusable energy (2) Promoted plant greenification	(1) Introduced solar power generation (total of 101 kW) in our Nara, Hanazono and Tadomisaki plants, as well as our Iga test course.		E_12
	(4) Promote environmental education activities	(1) Promote education with the objective of improving environmental awareness	(1) Environmental education in Environmental Month (2) Rank-specific education		E_08 E_09
Develop and design environmentally friendly products	(1) Develop new technology and new products leading to environmental burden reduction	(1) Reduce the environmental burden of new products through an environmental efficiency basic formula (2) Promote recycle design (3) Promote life cycle assessment (LCA) activities	(1) Steering ● Developed an integrated motor/ECU for electric power steering systems (2) Bearings and drive ● Developed an electric oil pump for idle reduction ● Developed a low-torque hub unit for light vehicles ● Developed a thrust needle roller bearing for use in low viscosity lubrication conditions. (3) Machine tools and mechatronics ● Developed a super energy-saving mini-size hydraulic unit	○	Pick-Up 6-11 E_10
	(2) Reduce resource consumption				
	(3) Promote recycle design considering effective resource use				
	(4) Roll out environmental assessments in the design and development phases				
	(5) Control and reduce environmentally burdensome substances contained in products	(1) Promote response to chemical substance regulations	(1) Response to individual country's chemical substance regulations		E_19

Environmental management

＊ Values in square brackets are comparisons with the base year

Area	Action items	Targets and initiatives	Results of activities	Evaluation	Related pages
Reduce CO_2 emissions	(1) Reduce CO_2 in production and logistics ● Global reduction of CO_2 ● Reduction of CO_2 in logistics	Production (1) Promote CO_2 reduction activities through the development and introduction of low CO_2 production technologies and daily improvements (2) Horizontal deployment of energy-saving improvement cases (3) Visualization of energy Item / FY2015 target / FY2012 target value: CO_2 emissions: FY2015 basic unit target × production volume / 236,367 t-CO_2 Emissions by in-house production volume: 145.0 t/100 mill yen, Down 7% from FY2008 / 149.7 t/100 mill yen Globally Emissions by in-house production volume: 96.1 t/100 mill yen, Down 7% from FY2008 / 99.2 t/100 mill yen	Results: 230,896 t-CO_2 [—] 147.7 t/100 mill yen [Down 4.0%] 91.4 t/100 mill yen [Down 12%]	○	E_11 E_12
		Logistics (1) Reduce CO_2 through transportation improvements Item / FY2015 target / FY2012 target value: CO_2 emissions: 13,300 t-CO_2, Down 16% from FY1990 / 13,485 t-CO_2 Emissions by sales: 2.39 t/100 mill yen, Down 15% from FY2006 / 2.48 t/100 mill yen	Results: 13,994 t-CO_2 [Down 12%] 2.25 t/100 mill yen [Down 20%]	△	E_13
	(2) Promote reusable energy	(1) Introduction of reusable energy	(1) Introduced solar power generation (total of 101 kW) in our Nara, Hanazono and Tadomisaki plants, as well as our Iga Proving Ground .	○	E_12
Reduce waste	Production (1) Promote thorough reduction of waste through countermeasures focusing on the source of the waste (2) Achieve zero emissions in all JTEKT group plants (JTEKT itself achieved zero direct landfill waste in FY2009 and is continuing to aim for zero waste production in other areas)	Production (1) Reduction of emissions through countermeasures focusing on the source (2) Promotion of a shift to valuable resources (3) Reduction of emissions through using less and reusing Item / FY2015 target / FY2012 target value: Emissions by in-house production volume: 7.1 t/100 mill yen, Down 15% from FY2008 / 7.5 t/100 mill yen Direct land-fill waste: Zero	Results: 6.9 t/100 mill yen [Down 18%] Zero	○	E_15 E_16
	Logistics (1) Reduce packaging material consumption through simpler packaging, using more returnable containers, etc.	Logistics (1) Transition to returnable (2) Simplification of packaging by changing packing style Item / FY2015 target / FY2012 target value: Emissions by sales: 0.84 t/100 mill yen, Down 15% from FY2006 / 0.87 t/100 mill yen	Results: 0.81 t/100 mill yen [Down 18%]	○	E_17
Effective use of resources New!	(1) Reduce waste in production/ water usage and effectively use resources	Waste (1) Reduce stock removal and improve yield through design and technique changes (2) Countermeasures targeting point of origin, reduction Water usage (1) Promote recycling, water conservation and waste reduction	Waste by in-house production volume — Results: 36.1 t/100 mill yen Waste by water usage — Results: 1.79 t/100 mill yen	—	E_14 E_18
Reduce primary materials and secondary materials	(1) Reduce environmentally burdensome substances in production activities	(1) Substitution with products that don't contain substances subject to PRTR	(1) Release and transfer of substances subject to the PRTR: 42.1 t	△	E_19
Preserve and improve the global environment, forge communication	(1) Enforce preventative measures for environmental problems and observe regulations	(1) Ongoing efforts for zero environmental regulation violations and claims from residents through the strengthening of daily control tasks	(1) Zero environmental violations and claims from residents	○	E_08 E_19
	(2) Build good relationships with local residents	(1) Promote environmental conservation activities around plants (2) Build good relationships with local residents and councils	(1) Clean-up activities around plant (2) Held environmentally-related discussions with local community		E_19 S_12 S_14 S_15
	(3) Proactive disclosure of environmental information and enhancement of communication activities	(1) Enhance and continue issuance of CSR reports (2) Provide more environmental information	(1) Issued CSR report 2012		S_12
	(4) Action for biodiversity	(1) Promote activities based on our Biodiversity Conservation Action Guidelines	(1) Participated in a forest development project		E_20

Environmental management

Environmental impact on business activities

Reduction of environmental burden in all stages

JTEKT strives to quantitatively grasp resource and energy amounts used (input) and amounts discharged into the environment (output) and reduce environmental burden in all business activity stages.

Resource and energy input versus environmentally burdensome substance output New! Figure-01

The table below shows the resource and energy input versus environmentally burdensome substance output for FY2012. To minimize the impact our business activities have on global warming, JTEKT is working to reduce the amount of energy used in all our processes, including casting, forging, heat treatment, machining processes and so forth. We also make efforts to convert to more efficient energy such as electricity and city gas. We have revised the tallying scope in an effort to give more detailed descriptions.

Figure-01 **Resource and energy input versus environmentally burdensome substance output**

INPUT

Resource and energy input		
Raw materials (metal, nonferrous metals) **Total:** 322,000 t (–)		■
Resource recycling volume	17,700 t (–)	■
Energy **Total:** 14,861,918 GJ (+8.8%)		■
Electricity	1,219,225 MWh (+2.4%)	■
City gas	61,060,000 Nm³ (+8.6%)	■
LPG	5,094 t (–9.0%)	■
Kerosene	1,483 kℓ (+5.3%)	■
Heavy oil A	1,310 kℓ (–20%)	■
Water **Total:** 9,594,000 m³ (–)		■
Recycled water volume	581,000 m³ (–)	■
Chemical substances (amounts of substances subject to PRTR) **Total:** 128 t (–)		■
Logistics		
Packaging and packing materials	5,062 t (+5.0%)	■

Manufacturing

Casting
Forging
Heat treatment
Machining
Painting
Assembling

Products
Automotive parts
Bearings
Machine tools
Mechatronics products

OUTPUT

Environmentally burdensome substance output		
Released into the atmosphere		
CO_2	605,100 t-CO_2 (+3.8%)	■
SOx	3.3 t (–)	■
NOx	83.1 t (–)	■
Toluene, Xylene	68.6 t (–)	■
Other substances subject to PRTR	17.7 t (–)	■
Discharged to waterways / sewage		
Wastewater	7,754,000 m³ (–)	■
COD	22.9 t (–)	■
Nitrogen	14.0 t (–)	■
Phosphorus	0.5 t (–)	■
Release/transfer of substances subject to PRTR	0.14 t (–)	■
Discharge leaving the company		
Waste	18,400 t (+23%)	■
Recycling for a fee	17,300 t (+0.3%)	■
Recycling for profit	125,600 t (+5.0%)	■
Transfer of substances subject to PRTR	14.6 t (–)	■
Logistics		
CO_2 emissions relating to product transfer	13,994 t-CO_2 (+4.5%)	■

■ Tally of the 17 JTEKT and domestic group companies and the 32 overseas group companies
■ Tally of the 17 JTEKT and domestic group companies
■ JTEKT independent

*Values in parenthesis are comparisons with the previous year

*Notes on the [Resource and energy input versus environmentally burdensome substance output]

CO_2 conversion coefficients to calculate CO_2 emissions volume

Electricity	0.3707 kg-CO_2/kWh
Heavy oil A	2.6958 kg-CO_2/ℓ
Kerosene	2.5316 kg-CO_2/ℓ
Propane gas	3.0040 kg-CO_2/kg
City gas	2.1570 kg-CO_2/Nm³

The CO_2 conversion coefficients were set by Japan Federation of Economic Organizations (1990) and are used in Japan. Regions outside of Japan use 2001 published values. We fixed electrical conversion coefficients so that the results of our improvements could be evaluated.

Heavy oil A: Among the three classes (A, B, C) of heavy oil, heavy oil A is the closest to kerosene and is used as fuel for boilers or heating.
GJ: Giga-joule (heat quantity unit), G=10^9
PRTR regulation: "PRTR" is an abbreviation for Pollutant Release and Transfer Register, which is a system announced by the government for reporting the amount of chemical substances released or transferred.
COD: Chemical Oxygen Demand (water quality index)
Charged recycling: Pay a processing fee to recycle.

Environmental management

CO_2 emissions for the overall supply chain New!

Figure-02

From FY2012, in order to reduce CO_2 in all areas of company activities, JTEKT began calculating CO_2 emissions in the overall supply chain. The below table estimates "Self-produced emissions" (Scope (*1) 1&2) and "Other indirect emissions (Scope 3) upstream and downstream of JTEKT based on guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry (*2). Moving forward, JTEKT will work to increase the accuracy of CO_2 emissions calculation as well as reduce CO_2 emissions in the overall supply chain relating to all business activities, including development/production, usage, disposal and recycle.

***1 Scope** The calculation scope for greenhouse gas emissions stipulated by the GHG Protocol Initiative which prepares the global guidelines for calculating and reporting greenhouse gas emissions.

TOPICS

Reducing CO_2 produced by commuting through the "Eco-Commuting Scheme"

In October of 2008, JTEKT implemented an Eco-Commuting Scheme, with the objective of reducing CO_2 produced during commuting. Under this scheme, employees living 2km or more and 10km or less from operation bases are encouraged to bicycle or walk to work by being offered an eco-commuting allowance. Currently, more than 600 employees utilize this scheme. As a result, employees either walk or bicycle a combined total of 1.1 million kilometers annually, amounting to a 260t reduction in the CO_2 produced through commuting.

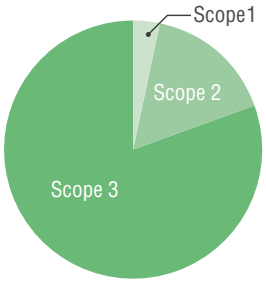
***2 Guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry** Basic guidelines relating to calculation of greenhouse gas emissions produced in the supply chain.

Figure-02

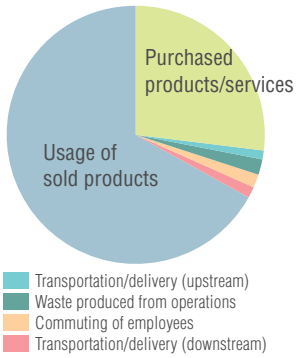
CO_2 emissions for the overall supply chain

Scope	Emissions(t-CO_2)	Remarks
Scope 1 (Self-produced direct emissions)	41,700	Self-produced emissions through using city gas and other fuels
Scope 2 (Indirect emissions produced by own energy source)	189,200	Emissions produced due to using electricity purchased by JTEKT
Scope 3 (Other indirect emissions)	943,400	Emissions produced by related activities such as raw material purchasing, disposal and distribution

CO_2 emissions by scope



Scope 3 CO_2 emissions (percentage) by category



Scope 3 CO_2 emissions by category

*1 Calculated based on the amount of steel material purchased *2 Calculated based on steering, drive parts and machine tools

Classification	Category	Emissions	Remarks	Calculation criteria	JTEKT action
Upstream	Purchased products/services *1	255,800	Only some raw materials covered	CO_2 due to the purchased raw materials, parts manufacture, etc.	Making products smaller/lighter and improving yield
	Capital goods	—	Calculation method under investigation	CO_2 due to the construction and manufacturing of capital goods	—
	Fuel and energy-related activities not included in Scope 1 and 2	—	Out of scope	CO_2 due to usage of fuel necessary for heat, etc., purchased by other parties	—
	Transportation/delivery (upstream) *1	10,400	Only some raw materials covered	CO_2 due to purchasing/logistics of raw materials, parts, etc.	Making products smaller/lighter and improving yield
	Waste produced from operations	19,400		CO_2 due to transportation/processing of waste	Reducing waste
	Business trips	—	Calculation method under investigation	CO_2 due to employee business trips	Utilizing TV/Web conference systems
	Commuting of employees	14,800		CO_2 due to employees commuting to operation bases	Utilizing the Eco-Commuting System
	Leased assets (upstream)	—	Calculated in Scope 1 and 2	CO_2 due to operation of leased assets	
Downstream	Transportation/delivery (downstream)	14,000		CO_2 due to transportation/storage and retail of products	Improving the shape in which products are transported in, combining transportation routes, model shift
	Fabrication of sold products	—	Calculation method under investigation	CO_2 due to processing of products by the customer	
	Usage of sold products *2	629,000		CO_2 due to usage of products	Developing environmentally-friendly products
	Disposal of sold products	—	Calculation method under investigation	CO_2 due to transportation/processing upon disposal of products	Making products smaller/lighter
	Leased assets (downstream)	—	Calculation method under investigation	CO_2 due to operation of leased assets	
	Franchise	—	N/A	CO_2 produced by franchise members	—
	Investment	—	N/A	CO_2 relating to investment operation	—
Total		943,400	(t-CO_2)		

Environmental management

Environmental accounting

Cost and results appraisal

By quantitatively appraising the cost and results of environmental conservation activities, JTEKT is constantly making improvements effectively and efficiently. We use environmental accounting to provide information to our stakeholders on JTEKT's environmental conservation activities. The tally system is in accordance with the Ministry for Environment's Environmental Accounting Guideline.

Environmental conservation costs

(Million yen)

Type	Details	Investment	Cost
[1] Business on-site costs ① Pollution prevention costs	● Service & upkeep of environmental equipment	158	236
② Environmental conservation costs	● Measures for energy conservation	305	52
③ Resource recycling costs	● Waste processing,recycling	90	399
[2] Upstream and downstream costs	● Green purchasing	—	42
[3] Management activity costs	● Environmental monitoring, measurements, etc.	2	151
[4] R&D costs	● R&D of environmentally friendly products	931	2,258
[5] Social activities costs	● Disclosure of environmental information, greenification, etc.	—	62
[6] Environmental damage costs	● Soil and groundwater restoration	3	5
Total		1,489	3,205
Gross amount		4,694	

Economic benefit of environmental conservation measures

(Million yen)

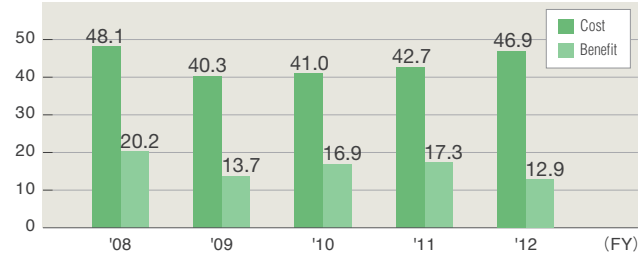
Details of benefits	Economic benefit
Profit from recycled material sales	654
Energy-cost reduction from promoting energy conservation	616
Reduction of waste processing costs	19
Total	1,289

Benefits towards material amount reduction from environmental conservation measures

Details of benefits	Benefits towards material amount reduction
Energy consumption (t-CO_2)	22,800
Waste output (t)	954

Cost and benefits of environmental conservation measures

(100 million yen)



It is not possible to calculate the economic benefits brought about by environmental conservation measures such as increased product value, avoiding environmental risk and improving corporate image. We have only calculated items which can be accurately appraised such as energy-savings benefits, etc.

Calculated area : JTEKT Corporation (including some group companies within workplaces)

Calculated period : FY2012 (April 2012 to March 2013)

Environmental accounting results for FY2012

Environmental conservation costs for FY2012 were 1.49 billion yen in investments and 3.2 billion yen in management costs, adding up to a total of 4.69 billion yen. This was an increase of 430 million yen (10%) from the previous year. Updates to air conditioning units, visualization of energy, etc., were the main investments made with the objectives of preventing underground seepage of oils and establishing energy-saving countermeasures.

Major activities in FY2012

JTEKT Group Environmental Coordinating Committees

In FY2012, JTEKT held an Environmental Coordinating Committee for both domestic and overseas group companies. At these sessions, "All JTEKT 2015 Target Guidelines" were rolled out based on target values produced in the 2015 Environment Action Plan. Action policies for the overall group and targets where shared in an effort to proceed with activities.

Domestic JTEKT group Environmental Coordinating Committee

JTEKT holds Environmental Coordinating Committees twice a year with participation by all 17 domestic group companies. In these committees, activities for CO_2 and waste reduction as well as environmental disturbance prevention are advanced. In June of 2012, in addition to reporting and discussing the previous year's results and current year's actions, on the plant tour, environmental risk countermeasures such as environmental equipment and an underground tank were confirmed in an effort to improve environmental conservation countermeasures. In December of 2012, a committee session was held for the executives in charge of the environment at domestic group companies and in addition to new action items, actions to achieve the 2015 Environmental Action Plan were begun.

A domestic JTEKT group Environmental Coordinating Committee session was held December 7th

Overseas JTEKT group Environmental Coordinating Committee in Japan

In February of 2013, an Environmental Coordinating Committee session was held in which the representatives of JTEKT overseas group companies participated. As with the domestic committee gathering, action policies and goals aimed at achieving the 2015 goal were shared and activities started.

February 2nd – Overseas JTEKT Group Environmental Coordinating Committee

Environmental management

Reducing environmental risk

Environmental accident prevention activities

To prevent environmental accidents, we share countermeasures implemented in response to incidents occurring both internally and externally for similar equipment. Moreover, we have set internal standards (*1) more stringent than regulations in order to observe environmental legislation, treaties and convention levels and manage these standards thoroughly.
Also, we have prepared and begun operating an "On-site Prework Environmental Instruction Checklist". This checklist is used by the JTEKT department managing the work and the subcontractor performing the work to make checks before carrying out work in plants in order to prevent the occurrence of an environmental disturbance.

***1 Internal standards** JTEKT's final affluent internal standards are 80% of regulatory requirements.

Legal compliance with environmental legislation

In FY2012, there were no cases of exceeding environmental regulation values and zero environmental accident complaints. There were also no environmentally-related lawsuits (fines, penalties). However, there were 5 environmental close-calls (*2) including a case where we went over our internal standard. We will continue our effort to identify the cause and complete corrective action while at the same time roll out countermeasures to other plants.

***2 Number of environmental near-miss incidents** Incidents that had only a slight impact on the environment and were handled within the area they occurred in.

Environmental patrols by the plant manager

As part of our Environmental Month every June, managers of each plant conduct environmental patrols. In FY2012, we confirmed whether or not we could respond to unlikely risks in facilities, etc., with waste sites, etc., where there is a possibility of oil leaks.

Environmental patrol (Okazaki plant)

Emergency drills

In preparation for various environmental accidents, emergency training is carried out regularly at each plant. Following on from FY2011, in FY2012 also, emergency training assuming abnormal occurrences such as tank oil leaks, etc. was carried out. Emergency training was also carried out for night-shift workers assuming that emergency situations could also occur at night.

Emergency drills (Kameyama plant)

Environmental audits

Internal audits

JTEKT conducts internal audits annually to confirm the operational status of our environmental management system and observance of legislation. We always correct the issues identified in this audit.

External audits (ISO14001)

JTEKT was subjected to an ISO14001 surveillance inspection in April of 2013. As a result, there were 0 cases of non-conformity, and our environmental management system conformed to standard requirements and was deemed as being carried out effectively. However, 3 cases were identified as having room for improvement, therefore the departments which should handle these were specified and corrections are being made.

Specialized environmental subcommittee inspection

Environmental education

Environmental awareness education

During Environment Month in June of 2012, environmental awareness training was held for all employees utilizing e-learning. The theme this year was "Implementing countermeasures to save electricity in the workplace and responding to environmental risk". Around 4,040 employees took part in this training.

Hirofumi Oribe
Kameyama Plant
Bearing Operations Headquarters

Be prepared for the unlikely occurrence of an environmental accident

Emergency training is critical to ensure that damage is kept to a minimum in the unlikely event of an environmental accident. Environmental accidents could occur either at day or night and this training focused on a night scenario. Because it is night, the surrounds are dark, and it is important to check places where, although are safely visible during the daytime, could hold danger at night. Through this training, we were able to give more specific instructions for correction, such as revising the number and location of generators and light-projecting devices, as well as changing flashlights to headlights so that both hands would be free to work with. I will continue to promote preventative activities to ensure environmental accidents do not occur.

Environmental management

Overseas activities

Overseas group company	JALY (France)

Training employees how to handle waste

JALY is promoting activities by establishing chemical handling, enforcement of waste separation and disposal methods, raising awareness through environmental training and so on as priority items of their environmental policy.
In FY2012, JALY carried out training concerning separation and disposal methods for paint and disposal method for used equipment washing agent. JALY will continue to make ongoing improvements by enforcing adherence to rules and reducing the impact on the environment.

Safety, Health & Environment Manager, F. Pignier, provides instruction relating to the environment at an intra-plant meeting.

VOICE Raise awareness and support implementation

At JALY, environmental training involves introducing the environmental conservation activities for each division and instructing employees on what specifically they should implement in the future.
I would like to see each and every employee raise their awareness towards the environment and move even one step closer to implementation.

F. Pignier - Safety, Health & Environment Manager (right)
D. Mellet - Environment Assistant Manager (left)

Overseas group company	JATJ (China)

Environment Month activities by all employees

At JATJ, July and August of 2011 were Environment Months, and activities were carried out with the goal of "Be gentle on the planet – more energy conservation". Based on the theme of the activity, "Show your heart, try to do", JATJ will improve all employees' awareness of the environment, promote energy conservation and reduction of disposal and water usage and continue to engage in action to prevent environmental disturbances.

Main measures

- Thorough reduction of power usage during non-moving time
- Inspections for oil/water leakages on the production line and countermeasures
- Strengthening waste separation training and on-site checks of waste sites
- Reward cases of workplace improvement
- Have all employees wear badges, put up posters, etc.

There were 23 entries received for the 1st poster competition. The poster to the left was awarded "Most Outstanding" status, while the poster to the right stood out among the 7 "Outstanding" posters.

Environmentally considerate development and design

Social background

There is growing expectation for the environment to be taken into consideration across the entire product lifecycle. More importance is placed on action from the development and design phases such as technological developments which alleviate environmental burden and product design which makes reusing and recycling easy.

JTEKT's concept

Improve each product from every angle

JTEKT, in line with our corporate philosophy of "contributing to the happiness of people and the abundance of society through product manufacturing", develop and design environmentally friendly products. We believe that JTEKT's products and technologies provide environmental countermeasures for our customer's products and manufacturing processes and as such, greatly contribute to the environment. Therefore, we engage in activities to improve the environmental performance of all products and are producing results which will contribute to prevention of global warming and effective resource use.

Promotion structure

Promotion by the Environmental Responsive Products Subcommittee

Under the guidance of the Global Environment Conservation Committee, which unites companywide environmental conservation activities, in order to strengthen activities, the Environmental Design Subcommittee became the Environmental Responsive Products Subcommittee from FY2012 and is promoting the development of environmentally-friendly products together with domestic group companies. Innovative technology is used in the development and design stages to make products smaller, lighter, more efficient, and reduce the amount of environmentally burdensome substances and raw material usage. In this way, JTEKT is engaging in environmental conservation on a global scale.

Toshimitsu Enoki
Engineering Planning Office
Engineering Planning Dept.
Automotive Systems Business Headquarters

My CSR

Helping improve the environment in a car-orientated society

JTEKT engages in monozukuri with small environmental burden throughout the entire lifecycle of our products. Even in our department, in order to help improve the environment in a car-orientated society, we consider the entire lifecycle of products and concentrate on developments with small environmental burden, particularly focusing on CO_2 reduction.
Moreover, as the overseeing department of engineering divisions, we promote and manage the reduction of environmentally burdensome substances in the product development stage and also exert effort to distribute information which will contribute to the environment through market investigations.

Assessment method

JTEKT has established an original environmental efficiency basic equation to serve as an index in quantitatively assessing environmental load reduction benefit. The larger the value, the greater the environmental load reduction benefit is. Each year JTEKT sets higher environmental efficiency targets and works to reach them while monitoring progress.

Environmental efficiency basic equation and environmental efficiency value calculation

Environmental efficiency is a value calculated based on the degree of lightness, compactness, energy-savings, etc. The environmental efficiency value is calculated by dividing the environmental efficiency of the assessed product by that of the standard product.

Environmental efficiency

$$\frac{\text{Product performance}}{\text{Product environmental load}} = \frac{1}{\sqrt{W^2+T^2+E^2}}$$

W : Mass T : Loss E : Energy

Calculation of environmental load reduction effect

As the environmental load reduction effect, it is possible to seek environmental load reduction ratio more than the environmental efficiency value. For example, if the environmental efficiency value was 1.25, that product's environmental load reduction benefit would be 20%.A reduced environmental load is sought as the reverse of the environmental efficiency value.

Environmental efficiency value

$$\frac{\text{Environmental efficiency of assessed product}}{\text{Environmental efficiency of standard product}}$$

Environmental load reduction ratio

$$\left(1 - \frac{1}{\text{Environmental efficiency value}}\right) \times 100$$

Evaluation of the 5 products shown in "Pick-Up"

[Pick-Up] P6-10 Related article

Developed product name	Environmental burden reduction percentage
Integrated motor/ECU for electric power steering systems	39.0%
Electric oil pump for the idle reduction mechanism	31.9%
Low torque hub unit for light cars	23.4%
Working with diluted lubricant – the low torque thrust needle roller bearing	13.4%
Super energy-saving mini-size hydraulic unit (small pack)	52.0%

3R (*) activities

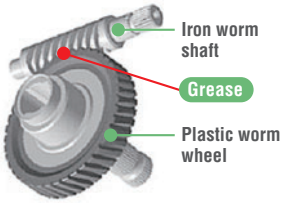
JTEKT conducts environmental design activities with intimate interaction between each operation's headquarters and group companies. Through creative ideas from the design stage, JTEKT group's products are contributing to the effective use of resources.

*3R Originating from the first letters of Reduce, Reuse and Recycle, 3R is a concept expressing the order of priority for waste handling.

Main measures

Reducing usage of worm reducer grease

Reducers used in electric power steering are made from an iron worm shaft and plastic worm wheel and grease is used on the sliding surfaces of these parts. JTEKT develops the grease used here, and in addition to achieving low-friction between the iron and plastic sliding surfaces, increasing plastic compatibility and improving performance and reliability, has also made it possible to reduce the amount of grease used through optimization such as high viscosity base oil and so on. This achievement was recognized and awarded by the Japanese Society of Tribologists in FY2012.



Motor reducer

Prevention of global warming

Social background

In 2012, the Ministry of the Environment and Ministry of Economy, Trade and Industry announced new criteria for the calculation of greenhouse gas (GHG) emissions. The background to this is that there was a global demand to assess and control the total emissions in the overall supply chain, not just the GHG emissions of the company in isolation, and in doing so reduce the risk of climate fluctuation.

→ E_06 Related article

JTEKT's concept

Reducing CO_2 emissions across all processes

In order to help prevent global warming, JTEKT engages in activities to reduce CO_2 emissions in the production and transportation of products. All group companies, both in Japan and overseas, promote energy-saving methods and the use of reusable energy throughout all processes from product design to delivery.

Stabilization of power supply and demand

In order to continuously countermeasure power shortages, JTEKT proactively engages in energy-saving activities such as introducing even better energy-saving equipment in addition to introducing our own power generation based on a plan up until 2015. By supplying our own power, we can continue stable business activities, suppress demand for purchased power, as well as contribute to the stabilization of supply and demand.

→ [Pick-Up] P11 Related article

Reducing CO_2 emissions in production

Reducing domestic CO_2 emissions

Figure-01

In the Kyoto Protocol, Japan made an international promise to reduce greenhouse gas emissions by 6% compared with FY1990 in the 1st commitment period (between FY2008 and FY2012).
In the 2015 Environmental Action Plan, JTEKT set a target of 7% compared with FY1990, which is higher than the Kyoto Protocol target. As a result of engaging in energy-saving improvements, a 1% reduction compared with FY2011 was achieved in FY2012 with an average of 10% compared with FY1990 between FY2008 and FY2012, meaning that step 1 targets were achieved.
Moving forward, we will promote activities to achieve the FY2015 step 2 targets.

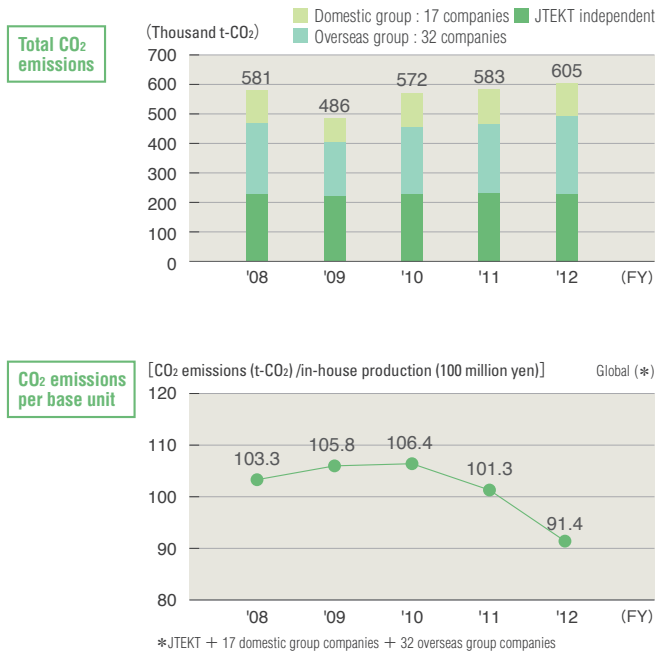
Reduction of global CO_2 emissions

Figure-02

With an aim to minimize the impact of our global production operations on global warming, JTEKT is working to reduce CO_2 emissions not only within JTEKT but also at its group companies in Japan and overseas.
In FY2012, we achieved a 9% base unit reduction. We will continue to improve productivity in order to prevent global warming and improve production efficiency as a group on the whole.

Figure-01 Transition of total and per base unit CO_2 emissions in production

Figure-02 CO_2 emissions (global and base unit)



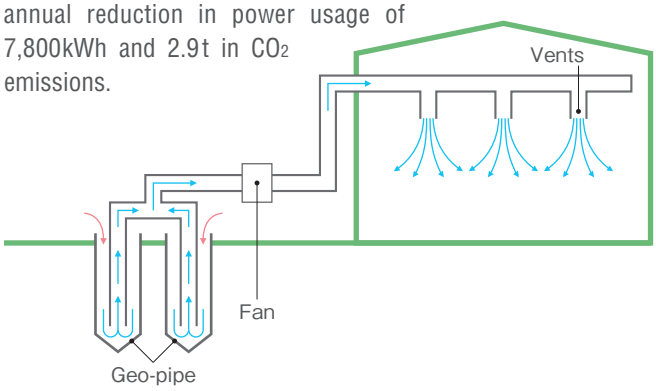
*JTEKT + 17 domestic group companies + 32 overseas group companies

Prevention of global warming

Main measures

Introduction of a ventilation system utilizing geo-heat

The temperature 5 meters underground is practically constant the entire year round. Temperature remains cool in summer, and warm in winter. JTEKT's Kariya plant has introduced a ventilation system which utilizes this geo-heat for air-conditioning and was able to stop using the existing air-conditioning system (7.5kW). This resulted in an annual reduction in power usage of 7,800kWh and 2.9t in CO_2 emissions.



In-house power generation activities

JTEKT has introduced in-house power generation focused on cogeneration in order to stabilize the supply and demand of power and provide an off-grid power source for emergencies. In FY2012, the Kokubu plant installed a 1,000kW cogeneration system as the first phase.

The total in-house power generation capacity for all plants has reached 15,828kW and the in-house power generation percentage* has become 4.6% (Overall generated power: 24.5 million kWh). Moving forward, JTEKT will promote the installation of cogeneration systems in plants with heat treatment processes. In FY2013, a 1,000kW cogeneration system has been introduced and is in operation at Kokubu plant as the 2nd phase and there is a plan to introduce a 1,000kW system in the Tokyo plant also.

***In-house power generation percentage** In-house power generation/power usage (purchased power + in-house power generation)

Efforts towards renewable energy

JTEKT is proactively introducing renewable energy with small environmental burden. In FY2012, a total of 101kW in solar power generation was introduced at the Nara, Hanazono and Tadomisaki plants, as well as the Iga test course administration block. This reduces CO_2 by approximately 38t per annum.

Solar power generation (Nara plant)

The generated power is used in the administration block, the janitor's room and the effluent treatment area, and supplies power to the security, safety and administration blocks as independent energy during states of emergency.

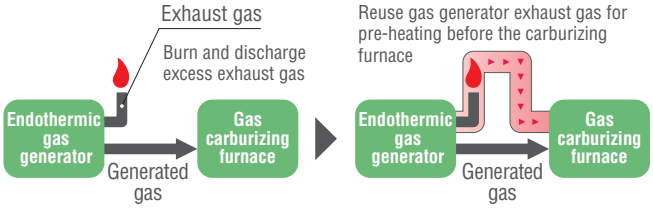
Moving forward, JTEKT will continue the planned introduction of reusable energy with a goal of a total of 500kW or more by the year 2020, and promote harmony between our production plants and nature.

Main measures

Domestic group company	CNK Co., Ltd.

Making carburization process exhaust gas reusable

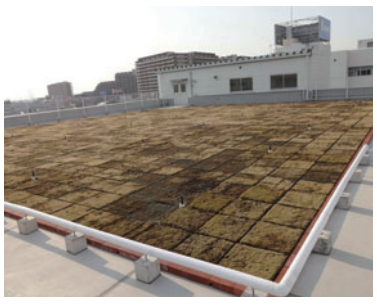
CNK has made it possible to reuse excess exhaust gas from the gas generator, which was previously burned then discharged, for the pre-heating before the carburization hardening furnace, and as such reduce gas consumption. The plan is to reduce annual CO_2 emissions by 8.9t through increasing thermal efficiency. Meanwhile, the carburizing furnace produces more exhaust gas than the gas generator, but could not be reused due to significant fluctuation. CNK will conduct a study into reusing the exhaust gas of the carburizing furnace for additional furnace heat and further improve thermal efficiency.



Domestic group company	Koyo Machine Industries Co., Ltd.

Energy-saving measures utilizing the rooftop

Koyo Machine Industries is implementing multiple energy-saving measures. One of these involves planting moss, which is maintenance-free and heat-proof, on the rooftops of buildings at their head office and Yao operation base. Moss serves to keep the rooftop surface temperature under 26°C in summer, which saves energy and contributes to the suppression of the heat-island phenomenon. Moreover, a 100kW solar power generation which reduces annual CO_2 emissions by 30.9t has been installed. Both of these measures also lead to the securement of green areas.



Moss planted on rooftops

Solar power generation

Prevention of global warming

Utilization of green electricity New!

Tradable Green Certificates are tradable energy commodities that represent proof as environmental value that renewable energy generation has been effective in reducing CO_2. JTEKT, with the belief that purchasing green electricity will lead to the expansion of renewable energy, is also utilizing green power. In FY2012, JTEKT used a tradable green certificate to cover electricity consumed in exhibitions as electricity generated using renewable energy.

Tradable Green Certificate

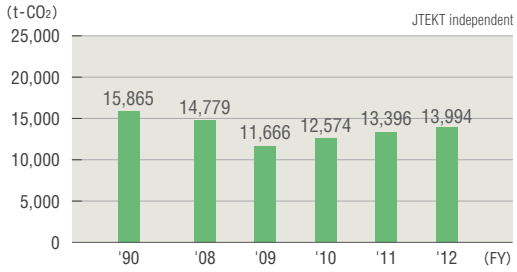
Reducing CO_2 emissions in logistics

Reduction of CO_2 through integrating product delivery shipments

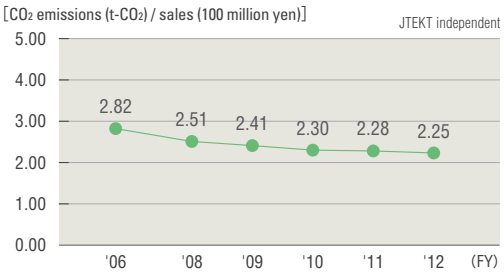
In FY2012, the CO_2 emission base unit was approximately 2% less than the previous year at 2.25t/100 million yen. CO_2 emissions were slightly higher due to an increase in production volume however through integrating product delivery shipments, JTEKT reduced annual CO_2 by 190t. We will continue to reduce CO_2 in the future through further integration.

Transition of total and per base unit CO_2 emissions in logistics

Total CO_2 emissions



CO_2 emissions per base unit



Effective use of resources

Social background

The shift to a recycle-based society is required more so in Japan than other countries for reasons such as limited space for waste disposal and the possibility of resource depletion.
Ultimately, these same problems will spread to the rest of the world and there is an intensifying demand to increase efforts such as the suppression of waste generation and reuse, recycle of parts, etc.

JTEKT's concept

Responsibility as a manufacturer

At JTEKT, we consider the effective use of resources as one of the responsibilities of an environmentally friendly manufacturer. Through making improvements and devising ideas for the production processes of each product, we strive to reduce material usage and waste output, reuse and save resources.

Saving resources in production

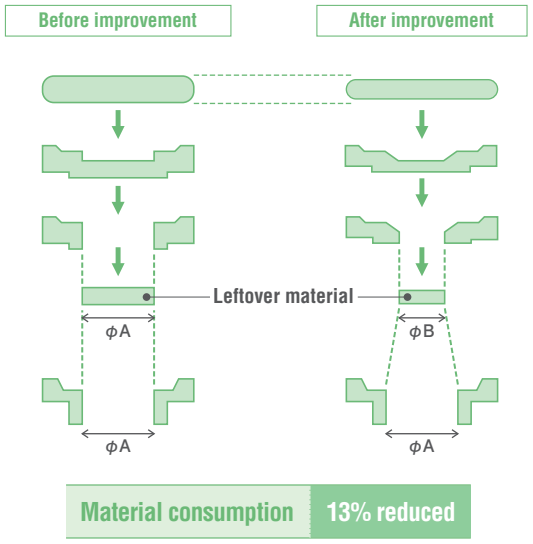
Reduction of primary material consumption

JTEKT do our best to reduce material consumption through changing product design and techniques and reducing stock removal. For example in the forging process, we reuse the material left over when products are removed from dies to make other parts and engage in activities to reduce the amount of leftover material itself, as well as many other improvements.

Main measures

Improving material yield rate through changed forging processes

In the forging of taper roller bearings, conventionally the drilling diameter was made the same as the inner raceway internal diameter and the leftover material was pushed out with a forward-backward motion upon drilling. JTEKT has made the drilling diameter smaller than the inner raceway internal diameter and developed a "bend-push" technique whereby the material on the inside is pushed out as it is bent, while widening the diameter. By revising the processing method, the weight of the leftover material was reduced and yield improved.



Material consumption 13% reduced

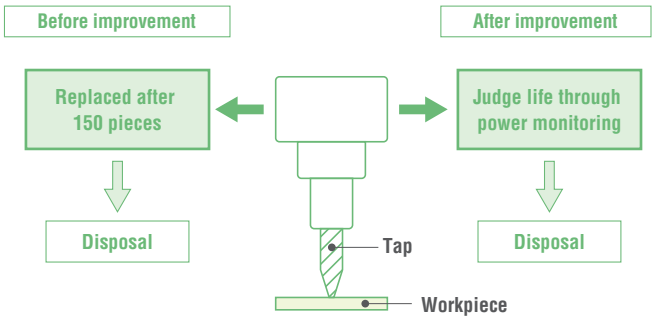
Reduction of secondary material consumption

We succeeded in reducing consumption by revising the material, shape, hardness and other specs of secondary material such as grinding wheels, cutting tools and dies and further increasing their durability. Also, we strove to promote recycling by reusing oil, grinding wheels, cutting tools and jigs.

Main measures

Reducing consumption through monitoring threading tap condition

The flange of the hub unit is threaded using a tap. Conventionally, taps were disposed of after they had threaded 150 pieces, however by monitoring the condition of the tap through spindle power, it has become possible to replace the tap appropriately according to its lifespan, rather than the number of pieces it has processed, reducing the number of taps consumed.



Tool consumption 38% reduced

Effective use of resources

Waste reduction

Aiming for overall waste reduction

Figure-01

In order to effectively utilize waste as resources, JTEKT is taking action to recycle 100% of waste. We have succeeded at this for direct landfill waste from FY2009 and for incinerated waste from November of 2012. We will continue to further promote 3R, including material and secondary material, and continue to engage in activities to reduce overall waste output, including those products recycled for a profit.

Main measures

Reusing die lubricant in the forging process

The forging process uses a large amount of soluble die lubricant. If foreign matter or oil mixes with this die lubricant, its performance deteriorates, therefore periodical inspection is required and approximately 48m^3 of die lubricant is discharged each year. However, by adopting a method in which the die lubricant is filtered after replacement to remove foreign matter and oil, then reused, JTEKT has succeeded in reducing the amount of lubricant discharged by 90%. Furthermore, we have successfully reduced the amount of die lubricant concentrate and water by 90%. We will roll out this improvement case to all departments so it leads on to further 3R.

Amount of discharged lubricant	Before improvement = 48m^3/year	→	After improvement = 4.8m^3/year

My CSR

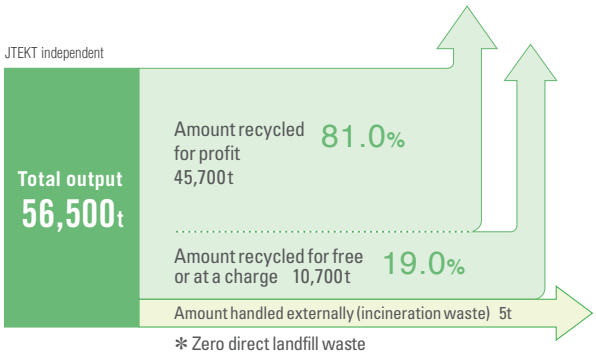
Kazumasa Tomiya
Process Engineering Section
Process Engineering Dept.
Tadomisaki Plant
Automotive Systems Business Headquarters

Recycling activities participated in by all

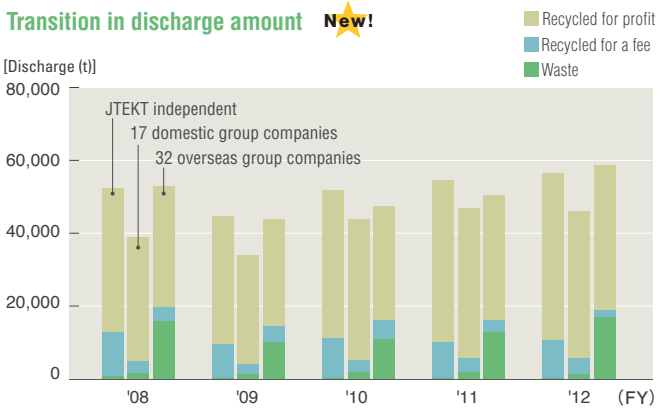
At Tadomisaki plant, where drive unit parts are manufactured, metal waste such as chips and rejects parts account for the majority of waste. As such, we are exerting our efforts to prevent reject parts caused by wear and breakage by cleaning and maintaining not only jigs, but also dies and high frequency quenching coils. We also reduce resource consumption by engaging in activities to reuse die lubricant in the forging process. We promote the reduction of waste by putting our heads together and thinking about whether there are still areas which are being overlooked and what we can do to reduce waste even further in the “Big Room Activity” which involves all concerned plant departments.

Figure-01

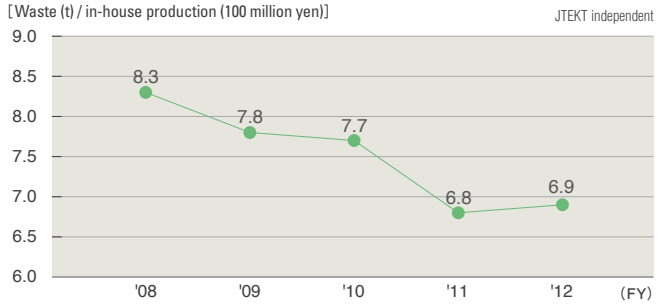
Processing of industrial waste and recycled materials



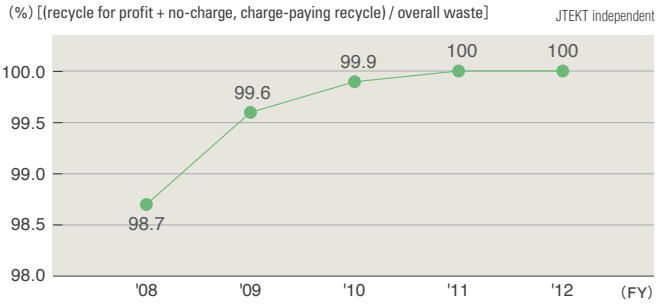
Transition in discharge amount New!



Yearly transition of waste base unit



Transition of recycle percentage



Effective use of resources

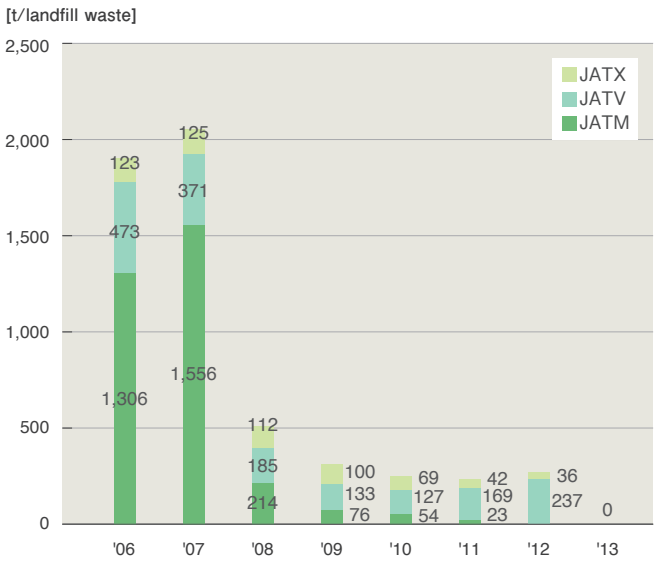
Overseas activities

Overseas group company	JATM, JATV, JATX (America)

Challenge to achieve zero waste

At the 3 plants of JATM, JATV and JATX, a “recycle-up” concept which involves converting waste into products with value is added to thorough separation and 3R activities.
In 2007, JATM formed a “Green Team” which specifically focuses on waste reduction, and this team achieved zero landfill waste in December of 2011. The improvement cases of JATX were rolled out by JATM and JATV too and by January of 2013, we achieved zero landfill waste. We will continue to maintain zero landfill waste, improve separation methods and further cost reduction.

Activity to reduce landfill waste at 3 North American steering plants



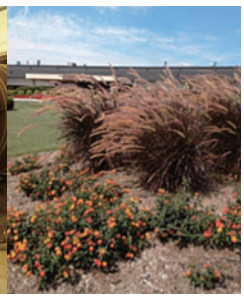
Main measures

Overseas group company	JATM (America)

Recycling biodegradable waste

In a joint effort with the local recycle compost center, biodegradable waste is being recycled as fertilizer. That compost is used to grow flowers within plant grounds and for landscaping purposes.

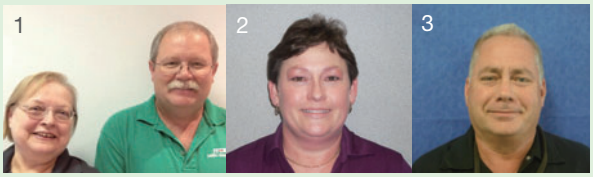
Recycle compost center



Plant surrounds

((VOICE)) Turning waste into valuable resources

The sustainable environment we hand down to future generations depends on our recycle activities. Based on JTEKT’s concept, we have passionately continued with zero waste activities as a team. The results of these activities was improved awareness of the environment for each team member and achieving our goal of zero landfill waste. On top of this, we were able to turn waste into valuable resources.
Also, we have improved our waste management framework by assessing all waste generating sources. We will continue to search for methods which impact positively on the environment and exert efforts to consider the environment in our day-to-day conduct.



1 Keith Johnson JATM Supervisor Planning and Environmental
Priscilla Maynard JATM Environmental Specialist
2 Sandra Henry JATV Team Leader Health, Safety and Environmental
3 Ernie Bloebaum JATX Supervisor Health, Safety and Environmental

Effective use of resources

Reduction of packaging material

Reducing packaging and packing material

Figure-01

In order to effectively use resources, JTEKT has established targets for packaging and packing material individually for wood and paper, and promotes simpler, returnable and reusable packaging. In wooden packaging, we have increased our use of returnable pallets and are promoting use of simpler wooden boxes. In paper packaging, we are engaging in various action such as shifting from disposable cardboard to returnable plastic containers, revising excessive packaging and reducing the amount of cushioning material used by changing to cardboard boxes appropriate for the product size.

Main measures

Revising excessive packaging of bearing products

By using boxes sized appropriately for the number of pieces held, we have reduced cushioning material consumption by 7t per annum.

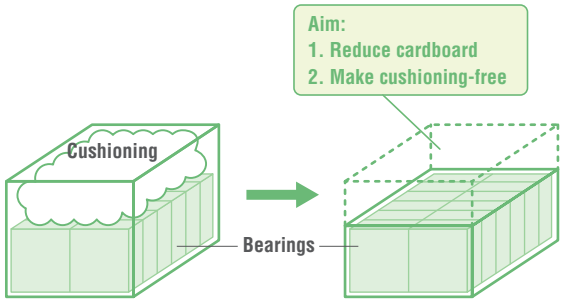
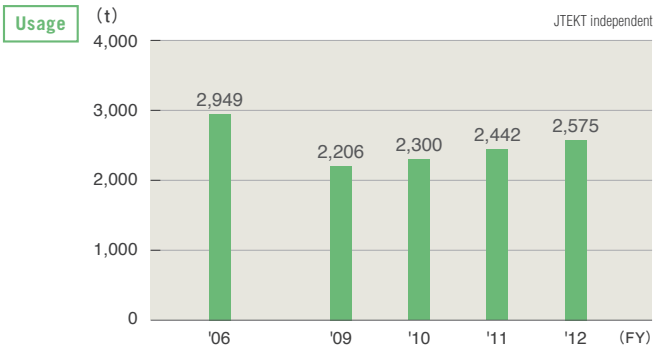
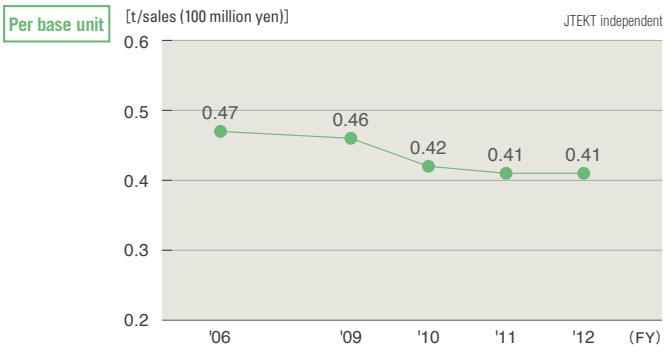


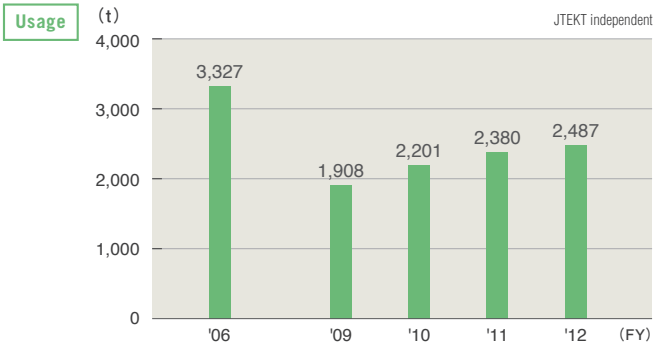
Figure-01

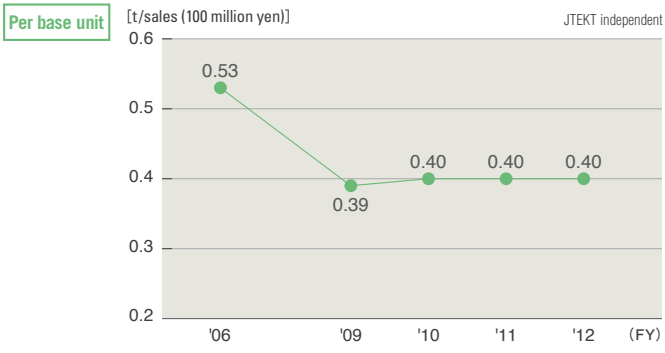
Transition of wood packaging usage and per base unit





Transition of paper packaging usage and per base unit





Effective use of resources

Reduction of water usage

Promoting effective water usage

Figure-01

JTEKT engages in activities to reduce wasteful usage of water, which is a precious resource, and reuse wastewater. In FY2012 we engaged in activities to improve water usage base unit by more than 1% annually, and achieved a 4.8% improvement, as well as a 0.3% reduction (8000m^3) in water usage compared with the previous year. In FY2013, regardless of the production volume, we will continue activities towards our target of 1% or higher improvement compared with FY2012 results.

Figure-01
Yearly transition of overall and base unit water usage

*JTEKT + 17 domestic group companies + 32 overseas group companies

Overseas activities

Overseas group company	WKB (China)

Reducing water usage by using a wastewater-free system

WKB believes that environmental conservation is the responsibility of all employees. In FY2012, WKB improved their wastewater processing system in order to contribute to the water quality environment of the Wuxi region and effectively utilize water resources. Taking the relocation of the plant as an opportunity, WKB introduced a high efficiency sewage processing system and a RO (reverse osmosis) wastewater-free system based on the collection and recycle of production-generation wastewater. These efforts achieved a reduction in annual water usage by approximately 10,800m^3. Moving forward, WKB will aim to further improve wastewater collection from the existing 80% and achieve effective utilization of water.

VOICE Feeling the effects of effective equipment utilization

While saving on equipment costs through utilization of existing equipment, we have reduced water usage and are really able to feel how significant the effects are. In the future, we will prepare a maintenance plan based on the operational status of equipment and exert our efforts into appropriate maintenance control.

WKB
Facilities & Equipment
Maintenance Section
Zhibin Gu,
Manager (left)
Yidong Ji,
Assistant Manager (right)

Control and reduction of environmentally burdensome substances

Social background

More and more action is being taken to reduce the usage and discharge of environmentally burdensome substances which can negatively impact the planet's environment and people's health. Society demands that corporations not only abide by various laws and regulations concerning environmentally burdensome substances but also take autonomous action.

JTEKT's concept

For the reduction of environmentally burdensome substances

For JTEKT, who aims to be a "monozukuri company gentle on the planet", reduction of environmentally burdensome substances in production activities is one of our greatest social commitments. It goes without saying that we will respond to and observe revised regulations as promptly as possible, but we are also working to reduce output of environmentally burdensome substances to alleviate our impact on the environment as much as possible.

Control and reduction of chemical substances

Reduction of substances subject to PRTR

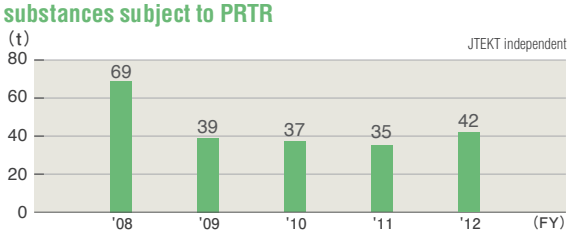
Figure-01

JTEKT is taking action to reduce the impact of chemical substances released into the environment from production activities on people's health and the environment. By promoting substitution to paint, grinding fluid, cleaning agent and so on that do not contain PRTR (*1) substances (low content) JTEKT is promoting reduction of the release and transfer of PRTR recognized substances.

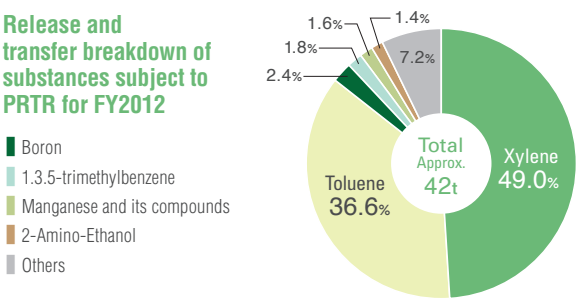
***1 PRTR** Pollutant Release and Transfer Register is a system to collect and disseminate information on environmental releases and transfer of toxic chemicals from industrial and other facilities.

Figure-01

Yearly transition release and transfer breakdown of substances subject to PRTR



Release and transfer breakdown of substances subject to PRTR for FY2012



Soil and groundwater measures (continued report)

S_12 Related article

Since 1998, JTEKT's Kariya and Okazaki plants have implemented ongoing measures to prevent external leaks and to purify groundwater of trichloroethylene, a substance previously used in detergent, etc. They do this using a pumping and aeration system (*2). In addition, since FY2004, the Okazaki plant has used a microbial purification system (*3) which injects nutritional supplement as part of their purification measures. JTEKT report our groundwater measurement results to government agencies and provide local residents with explanations in community discussions.

***2 Pumping and aeration system** Groundwater is pumped up and sprayed and air is blown on it from below to aerate and separate organic solvents, which are made to adhere to activated carbon for removal.

***3 Microbial purification system** This is a method of restoring contaminated environments by utilizing microbial function. The purification capability of microbes living in the environment is raised by injection of nutrients, etc.

Trichloroethylene measurement values

Environmental standard: 0.03mg / ℓ (mg / ℓ)

Plants	Maximum measurement value in groundwater		
	FY2011	FY2012	Status
Kariya	0.382	0.552	Purifying
Okazaki	Less than0.001	Less than0.001	Purifying

✻ For plants other than the above, no trichloroethylene was detected in measurements taken in wells around the plant borders.

Proper storage and control of PCB devices

Status of PCB device treatment (Tokyo plant)

The Act on Special Measures concerning the Proper Treatment of Polychlorinated Biphenyl Waste requires the storage and notification of devices containing PCB (polychlorinated biphenyl), widely used as an insulating oil. JTEKT appropriately stores such devices and notifies government agencies in accordance with this Act. In addition, by FY2012 we rendered 145 high pressure condensers with highly concentrated PCB levels harmless through PCB treatment at JESCO (Japan Environmental Safety Corporation). We plan to perform this treatment on another 53 units in FY2013 and complete this on the remaining 48 high pressure condensers by FY2014.

Response to devices with minute amounts of PCB

National and industrial group-led investigations have revealed that electrical devices, etc., which were previously judged not to contain PCB, may be contaminated with minute amounts of the substance. Disposal of PCB devices is taking longer than first assumed, and because the existence of discarded electrical devices contaminated with minute amounts of PCB came to light after the implementation of the Act on Special Measures concerning the Proper Treatment of Polychlorinated Biphenyl Waste, this act was revised in 2012 and the time limit to dispose of such items has been extended from July of 2016 to March of 2027.

JTEKT currently plans to complete treatment of high pressure condensers before FY2014, regardless of the revised Act. JTEKT also plans to treat stable devices, etc., in storage as soon as the framework to do so is in place and at the same time enforce thorough management of electric devices which may contain minute amounts of PCB.

Biodiversity conservation

Social background

As more and more nature is destroyed, the diversity of living creatures which can survive on this plant is rapidly depleting. Corporate activities are possible thanks to the blessings of nature but at the same time impact greatly upon biodiversity. That is why it is important that corporations are proactively involved in biodiversity conservation activities.

JTEKT's concept

Aiming for harmony with biodiversity

JTEKT believes conserving biodiversity to be a critical social issue supporting life and lifestyle. As such, based on the JTEKT Group Environmental Vision, we are making efforts to achieve harmony between our business activities and biodiversity through the actions of each and every employee.

Actions for Biodiversity Conservation

Under the Biodiversity Conservation Action Guideline

Figure-01

In order to reduce the environmental burden created by our business activities and consider biodiversity, JTEKT established a Biodiversity Conservation Action Guideline in March of 2011 based on the 2015 Environmental Action Plan of the JTEKT Group Environmental Vision.

This guideline was established with reference to the Ministry for the Environment's Guidelines for Private Sector Engagement in Biodiversity and we will continue to investigate making quantifiable evaluations relating to biodiversity conservation in the future.

Major activities in FY2012

Overseas group company	KMP (Philippines)

Contributing to environmental conservation and the local community through tree-planting activities

KMP, in addition to environmental conservation through production activities, has engaged in tree-planting activities with nearby companies since the year 2000, with the goal of contributing to the prevention of global warming. Many employees, including the president, volunteer to participate in this activity and have planted 6,327 trees across a total of 485 ha up until now. Participants enjoy learning about the importance of forest-building and also contribute to the reduction of local disaster risk through tree-planting. KMP will continue this activity into the future, contributing to the planet and the region and improving employees' environmental awareness.

Tree-planting in the Philippines

VOICE Great fun with the team

The Philippines is a country which is proactive towards tree-planting and KMP also asked their customers to plant trees in their plants. Participating in this activity with other members of the team was a wonderful experience and I really felt I was contributing to both environmental conservation and the local community. The tree-planting activity also includes preparation of seedlings for the following year's planting. KMP will continue to spread the scope of this activity and contribute to the environment and region.

KMP staff and Takashi Ito, President (3rd from left),
Masahiro Uchida, Executive Vice-President (4th from right, back row)

Figure-01

Biodiversity Conservation Action Guideline

Item	Description	
Relationship with business activities	Raw material procurement	● Liaise with business partners to protect biodiversity.
	Soil usage	● Through greenifying our plants, etc., we are engaging in activities to protect ecosystems which contribute to biodiversity.
	Production activities	● With activities such as preventing global warming by developing innovative techniques and equipment, effective resource usage, reduction of environmentally burdensome substances and so on, we aim to succeed at both biodiversity and corporate activities. ● We work hard to quantitatively appraise the impact had by our business activities on biodiversity.
	Product development	● Based on life-cycle assessment approach, JTEKT develop and design top-class environmentally friendly products and reduce impact on biodiversity.
Promotion of socially contributing activities benefiting biodiversity conservation	● Proactively participate in socially contributing activities through cooperation with councils and affiliated companies.	
Training, awareness activities and information-sharing	● Raise employee awareness of biodiversity conservation through environmental training. ● Use the CSR report as a tool to communicate our activities towards biodiversity conservation with our stakeholders and communities.	