

Environmental Report

- The CSR Report 2016 PDF is published with the aim of conveying the concept and activities pertaining to JTEKT's CSR in an easily understood manner. This report emphasizes objectiveness, completeness and continuity.
- Please refer to the JTEKT REPORT 2016 for information about JTEKT's business performance, business activities, planning, and strategy.
- For related articles:

M = JTEKT's CSR Management F = Special Edition

S = Social Report E = Environmental Report

J = JTEKT REPORT 2016

- This section, the Environmental Report, summarizes environmental aspects of FY 2015 based on the JTEKT 2016 Environmental Action Plan.

Target period and target organizations/scope

Target period

FY 2015 (April 2015 - March 2016)

* Some items include content from other periods.

Target organizations and scope

All activities of the JTEKT group

For items for which there is no criteria uniform across the JTEKT group, the unconsolidated results of JTEKT are displayed. 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 2013 (G4)"
- ◎ 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
"General Guidelines on Supply Chain GHG Emission Accounting"

New! This mark is used to indicate new actions begun in FY 2015 and information disclosed for the first time in this year's report.

| | |
|---|-------------|
| Environmental management | E_01 |
| Environmentally considerate development and design | E_13 |
| Prevention of global warming | E_15 |
| Effective use of resources | E_18 |
| Control and reduction of environmentally burdensome substances | E_23 |
| Biodiversity conservation | E_25 |
| Appendix | E_27 |

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

In September 2015, Sustainable Development Goals (SDGs) were adopted at the United Nations Sustainable Development Summit. Of the 17 goals aimed to be realized by 2030, the majority are environment-related. Corporate business activities have various effects on the global environment. As raised by the GRI Sustainability Reporting Guidelines (G4 Guidelines) and environmental reporting guidelines, companies are expected to consider the environment from a comprehensive perspective and disclose information from both positive and negative aspects.

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 that wins the trust of society," we as a group have positioned the environment as one of our main management issues and are involved in actions which contribute to the sustainable development of society and the planet. We are greatly aware of the impact corporate activities have on the environment, and are working proactively to tackle matters of high importance.

JTEKT Group Environmental Vision

▶ Figure-01

In March 2011, JTEKT established the JTEKT Group Environmental Vision, comprising of an Environmental Philosophy and Environmental Policy, which sets out our initiatives towards conserving the global environment. We aim to achieve a sustainable society, establishing an action plan and promoting activities to achieve this goal.



Promotion structure

Under the Global Environmental Conservation Committee

▶ Figure-02

JTEKT engages in environmental management led by the Global Environmental Conservation Committee, which is chaired by the company president. The Committee sets goals based on company policy, discusses and determines measures, and manages the progress thereof. In FY 2016, we newly formulated a Production Engineering Innovation for CO₂ Reduction Subcommittee aimed at developing, introducing and diffusing innovative techniques and equipment through production engineering innovation in order to help create a low-carbon society. JTEKT is proactively engaging in activities to achieve the goals slated in our Environmental Challenge 2050.

Promotion of global environmental management

We are working to further strengthen our environmental management for 19 group companies in Japan, and 38 group companies overseas.

→ E_27 Appendix

Environmental management

▶ Figure-01 JTEKT Group Environmental Vision

Environmental Philosophy

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

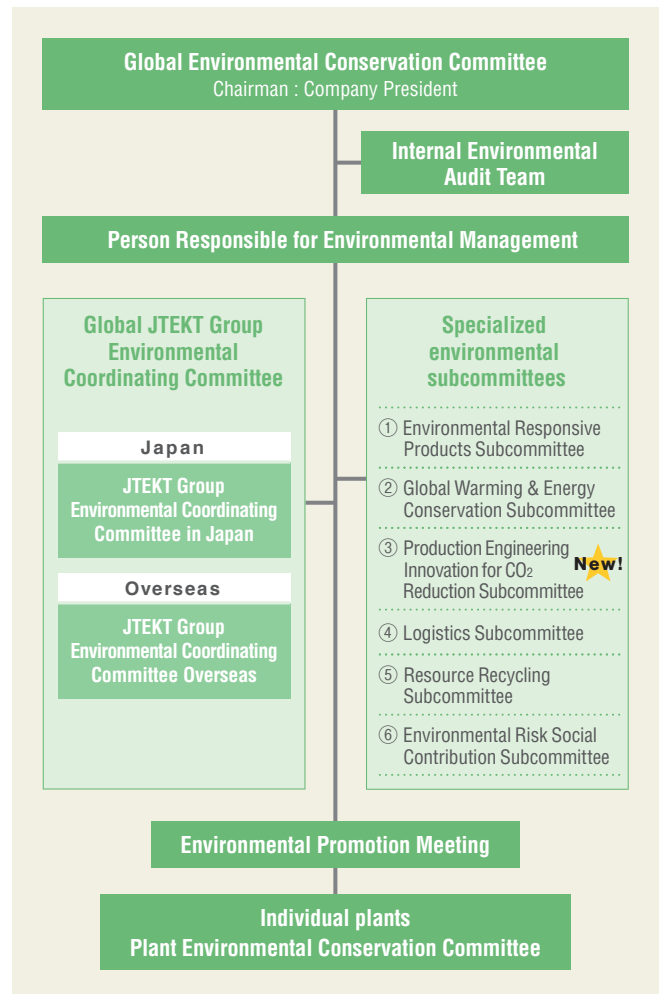
Environmental Policy (Date of establishment: June 26th, 2013)

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 CO₂ 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 CO₂ 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

→ J_29 Related article



Environmental management

New initiative guidelines for the year 2050

Formulation of Environmental Challenge 2050

New!

▶ Figure-01

In May 2016, in line with the slogan of “for future children”, JTEKT formulated and announced Environmental Challenge 2050 and Environmental Action Plan 2020 as new initiative guidelines to minimize environmental burden by the year 2050.

In addition to our existing daily improvements, we will endeavor to achieve production engineering innovation and proactively promote reusable energy such as wind power and hydrogen energy that incorporates JTEKT’s bearing business technologies and aim to minimize the amount of CO₂ emitted throughout the entire life cycle of our products, from manufacture to use and disposal.

→ J_30 Related article

▶ Figure-01 Guidelines of Environmental Challenge 2050

| Area | Guidelines |
|---|---|
| Product/Technology | Contribute to an environmental society using our capabilities in the development of products and technologies · Proactively promote development of products, such as parts for fuel cell vehicles, anticipated to contribute to reducing environmental burden. |
| Creation of a low-carbon society | Minimize the amount of CO ₂ emitted throughout the entire life cycle of our products, from material/part procurement to design and manufacture, and even including disposal. |
| | Minimize the CO ₂ emitted from plants when products are manufactured by the year 2050 · Develop, introduce and diffuse innovative processes and equipment · Daily improvement and higher efficiency equipment at plants · Switch to reusable energy, hydrogen energy, etc. |
| Creation of a recycling-based society | Minimization of discharged materials and expansion of recycling in the production phase · Implement countermeasures targeting point of origin (improve yield, etc.), improve value of waste material through strengthened separation practices, etc. (creating valuable resources) · Utilize recycled materials, increase company recycling |
| | Recycle water used at plants, minimize water consumption Make water cleaner before discharging from plants |
| Society in harmony with nature, biodiversity | In addition to JTEKT-wide activities, promote activities to achieve society in harmony with nature and protect the ecosystem through collaborating with the Toyota group, government offices and NPOs. |
| Environmental management | Build a corporate culture and professionals to proactively promote global environment conservation · Improve employee environmental awareness and develop human resources able to contribute both internally and externally to the company · Expand environmental activities on a global basis |

Contribution to CO₂ reduction through products

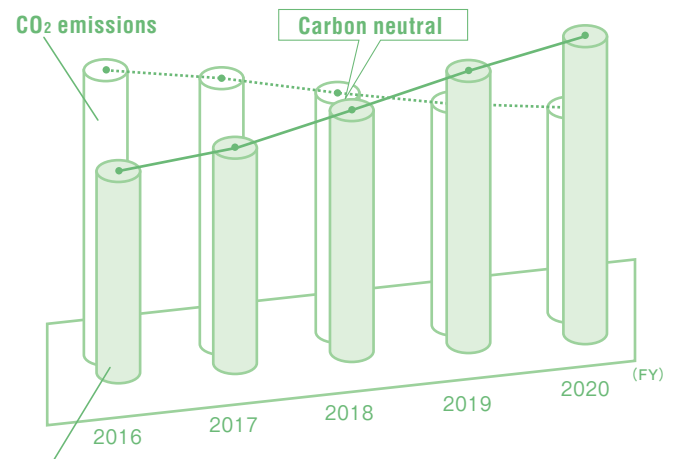
New!

▶ Figure-02

In accordance with our Environmental Action Plan 2020, JTEKT has established the new environmental guidelines of improving product efficiency, reducing CO₂ emissions during product usage, and contributing to the prevention of global warming throughout the product life cycle. This action plan states that by 2020, JTEKT aims to have made a contribution to CO₂ reduction through products either equivalent to or greater than the current CO₂ emissions of the entire JTEKT group.

→ J_31 Related article

▶ Figure-02 Contribution to CO₂ reduction through products



Contribution to CO₂ reduction

- * CO₂ emissions refer to global emissions including both domestic and overseas group companies
- * Contribution to CO₂ reduction through products figures are the contribution calculated globally for each fiscal year

Environmental Action Plan 2020

New!

▶ Figure-03

Environmental Action Plan 2020 is a 5-year activity plan established as the first step to achieving Environmental Challenge 2050. It sets out the specific numeric targets that the JTEKT group is endeavoring to achieve by the year 2020.

→ J_31 Related article

Environmental management

▶ Figure-03 Environmental Action Plan 2020

| Area | Action items | Specific items to be implemented/targets | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---------------|-----------|---------------|-------|---|---|----------|-----------|---|------|----------|-----------|---|------|----------|--|-----------------------|--|
| Product / Technology | Develop and design environmentally friendly products | (1) Develop new technology and new products leading to environmental burden reduction | ① Evaluate all JTEKT products using the environmental efficiency formula set by JTEKT and aim to improve | | | | | | | | | | | | | | | | | | |
| | | (2) Promote 3R (reduce, reuse, recycle) design considerate of effective resource utilization | ① Design products which are easily recycled ② Reduce resource consumption by making products smaller, lighter and longer-lasting | | | | | | | | | | | | | | | | | | |
| | | (3) Control and reduce environmentally burdensome substances contained in products | ① Promote groupwide response to worldwide chemical substance regulations | | | | | | | | | | | | | | | | | | |
| | | (4) Roll out environmental assessments in the design and development phases | ① Promote improvements to product performance and conduct life cycle assessments (LCA) | | | | | | | | | | | | | | | | | | |
| | | (5) Contribute to CO ₂ reduction through products | ① Develop and design environmentally-considerate products which contribute to reducing CO ₂ emissions ② Contribute to reduction of CO ₂ emissions from product usage by 800,000 t or more by the year 2020 | | | | | | | | | | | | | | | | | | |
| Creation of a low-carbon society | Reduce CO ₂ emissions | <p>Production</p> ① Promote CO ₂ reduction through daily improvement activities at plants ② Develop and introduce low-CO ₂ production technologies through production engineering innovation (Seek to improve productivity, roll-out activities including offices, etc.) | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th></th> <th>Item</th> <th>Base year</th> <th>Target (2020)</th> </tr> </thead> <tbody> <tr> <td>JTEKT</td> <td>CO₂ emissions</td> <td>FY 2020 basic unit target x production volume</td> <td></td> </tr> <tr> <td></td> <td>Emissions by in-house production volume</td> <td>2008</td> <td>Down 15%</td> </tr> <tr> <td>Global *1</td> <td>Emissions by in-house production volume</td> <td>2012</td> <td>Down 10%</td> </tr> </tbody> </table> <p>Logistics</p> ① Reduce CO ₂ emissions by improving logistics efficiency and enhancing fuel economy | | Item | Base year | Target (2020) | JTEKT | CO ₂ emissions | FY 2020 basic unit target x production volume | | | Emissions by in-house production volume | 2008 | Down 15% | Global *1 | Emissions by in-house production volume | 2012 | Down 10% | | | |
| | Item | Base year | Target (2020) | | | | | | | | | | | | | | | | | | |
| JTEKT | CO ₂ emissions | FY 2020 basic unit target x production volume | | | | | | | | | | | | | | | | | | | |
| | Emissions by in-house production volume | 2008 | Down 15% | | | | | | | | | | | | | | | | | | |
| Global *1 | Emissions by in-house production volume | 2012 | Down 10% | | | | | | | | | | | | | | | | | | |
| | (2) Promote reusable energy | ① Promote reusable energy that considers the unique characteristics of each individual area and region | | | | | | | | | | | | | | | | | | | |
| Creation of a recycling-based society | Reduce waste | <p>Production</p> (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 FY 2009 and is continuing to aim for zero waste production in other areas) | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th></th> <th>Item</th> <th>Base year</th> <th>Target (2020)</th> </tr> </thead> <tbody> <tr> <td>JTEKT</td> <td>Emissions by in-house production volume</td> <td>2008</td> <td>Down 18%</td> </tr> <tr> <td></td> <td>Direct landfill waste</td> <td></td> <td>Zero</td> </tr> <tr> <td>Global *1</td> <td>Emissions by in-house production volume</td> <td>2012</td> <td>Down 8%</td> </tr> <tr> <td></td> <td>Direct landfill waste</td> <td></td> <td>Accomplishment of Zero Emissions *2</td> </tr> </tbody> </table> <p>*2 Make direct landfill waste less than 1% of emissions</p> | | Item | Base year | Target (2020) | JTEKT | Emissions by in-house production volume | 2008 | Down 18% | | Direct landfill waste | | Zero | Global *1 | Emissions by in-house production volume | 2012 | Down 8% | | Direct landfill waste | |
| | | Item | Base year | Target (2020) | | | | | | | | | | | | | | | | | |
| | JTEKT | Emissions by in-house production volume | 2008 | Down 18% | | | | | | | | | | | | | | | | | |
| | Direct landfill waste | | Zero | | | | | | | | | | | | | | | | | | |
| Global *1 | Emissions by in-house production volume | 2012 | Down 8% | | | | | | | | | | | | | | | | | | |
| | Direct landfill waste | | Accomplishment of Zero Emissions *2 | | | | | | | | | | | | | | | | | | |
| Effective use of resources | (1) Reduce waste in production | ① Reduce packaging material consumption through simpler packaging, using more returnable containers, etc. | | | | | | | | | | | | | | | | | | | |
| | (2) Reduce water consumption in production | <p>Item</p> <table border="1"> <thead> <tr> <th></th> <th>Item</th> <th>Base year</th> <th>Target (2020)</th> </tr> </thead> <tbody> <tr> <td>JTEKT</td> <td>Emissions by in-house production volume</td> <td>2012</td> <td>Down 8%</td> </tr> <tr> <td>Global *1</td> <td>Emissions by in-house production volume</td> <td>2012</td> <td>Down 8%</td> </tr> </tbody> </table> | | Item | Base year | Target (2020) | JTEKT | Emissions by in-house production volume | 2012 | Down 8% | Global *1 | Emissions by in-house production volume | 2012 | Down 8% | | | | | | | |
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| Global *1 | Emissions by in-house production volume | 2012 | Down 8% | | | | | | | | | | | | | | | | | | |
| Society in harmony with nature, biodiversity | Enforce chemical substances controls and reduce environmentally burdensome substances | Reduce environmentally burdensome substances in production activities | ① Reduce the discharge and transportation of PRTR substances • Reduce through promoting substitute materials | | | | | | | | | | | | | | | | | | |
| | Biodiversity conservation | Action for biodiversity | ① Promote activities based on our Biodiversity Conservation Action Guidelines ② Promote conservation of biodiversity through "connecting activities" in the JTEKT group and across all Toyota group companies | | | | | | | | | | | | | | | | | | |
| Environmental management | Environmental management | (1) Strengthen and promote consolidated environment management | ① All affiliate companies to formulate and roll out their individual environment activity plans based on the JTEKT Group Environmental Vision ② Establish strategic environmental management which considers the management issues of business activities | | | | | | | | | | | | | | | | | | |
| | | (2) Promote environmental activities in cooperation with business partners | ① Promote green purchasing by all parts/materials suppliers • Control and reduce environmentally burdensome substances included in parts and materials • Request the creation and operation of environmental management systems ② Promote purchasing of environmentally-considerate products | | | | | | | | | | | | | | | | | | |
| | | (3) Promote sustainable plant activities | ① Promote plant greenification and plants which utilize and harmonize with nature | | | | | | | | | | | | | | | | | | |
| | | (4) Promote environmental education activities | ① Promote environmental awareness education aimed at improving employee environmental awareness ② Promote rank-based education ③ Implement JTEKT Environment Month (June) | | | | | | | | | | | | | | | | | | |
| | Preserve and improve the global environment, forge communication | (1) Enforce preventative measures for environmental problems and observe regulations | ① Promote ongoing zero legal violations and complaints from residents by strengthening and improving daily management tasks | | | | | | | | | | | | | | | | | | |
| | | (2) Build good relationships with local residents | ① Promote environmental conservation activities around plants ② Build good relationships through discussions with local residents and local government | | | | | | | | | | | | | | | | | | |
| | (3) Proactive disclosure of environmental information and enhancement of communication activities | ① Promote release of the JTEKT Report Establish communication with government agencies and local residents ② Improve the JTEKT brand image and external evaluation through proactive disclosure of information | | | | | | | | | | | | | | | | | | | |

*1 JTEKT + 19 domestic groups + 38 overseas groups

Environmental management

Targets and results

JTEKT Environmental Action Plan 2015 Environmental Action Plan

In order to promote environment conservation activities throughout the entire JTEKT group, JTEKT had formulated the 2015 Environmental Action Plan, which sets out our initiative policies and specific targets, and shared this throughout the group. In FY 2015, the final year of the action plan, JTEKT group's overall global CO₂ emissions basic unit had improved 5.0% compared with FY 2012. While we had accomplished our target, JTEKT's individual CO₂ emissions basic unit fell short of

the target with only a 1.0% improvement compared with the previous year (6.3% compared with FY 2008). Since 2016, in order to realize the newly formulated Environmental Challenge 2050, JTEKT is aiming to minimize CO₂ emitted throughout the entire life cycle of its products and is promoting and strengthening activities on a groupwide scale.

2015 Environmental Action Plan

| Area | Action items | Targets and initiatives | FY 2015 results of activities | Evaluation | Related pages |
|--|---|--|---|------------|--------------------------------------|
| Environmental management | (1) Strengthen and promote consolidated environment management | 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_09 |
| | (2) Promote environmental activities in cooperation with business partners | (1) Further promote green purchasing (2) Roll out environmentally friendly purchasing guidelines to business partners | Expanded Green Purchasing Guidelines | | S_05 |
| | (3) Promote sustainable plant activities | (1) Introduce reusable energy (2) Promote plant greenification | Amount of reusable energy introduced: 676 kW (cumulative) | | E_16 |
| | (4) Promote environmental education activities | Promote education with the objective of improving environmental awareness | (1) Environmental education during Environmental Month (2) Rank-based education | | E_11 E_12 |
| 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 | (1) Low-friction reduction gear for EPS using new grease | ○ | E_13 E_14 F_02 F_06 F_07 |
| | (2) Reduce resource consumption | | | | |
| | (3) Promote recycle design considering effective resource use | (2) Promote recycle design | (2) New design anti-creep ball bearing | | |
| | (4) Roll out environmental assessments in the design and development phases | (3) Promote life cycle assessment (LCA) activities | (3) New ceramic ball bearing for motors | | |
| | (5) Control and reduce environmentally burdensome substances contained in products | Promote response to chemical substance regulations | Response to individual country's chemical substance regulations | | |

Environmental management

* Values in square brackets are comparisons with the base year

| Area | Action items | Targets and initiatives | FY 2015 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 case examples (3) Visualization of energy | | △ | E_08 E_15 ~17 | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Item</th> <th colspan="2">FY 2016 target value</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>CO₂ emissions</td> <td colspan="2">FY 2015 basic unit target × production volume</td> <td>230,090 t-CO₂ [—]</td> </tr> <tr> <td>Emissions by in-house production volume</td> <td>145.2 t/100 mill yen</td> <td>Down 7% from FY 2008</td> <td>146.2 t/100 mill yen [Down 6.3%]</td> </tr> <tr> <td>Global emissions by in-house production volume</td> <td>172.2 t/100 mill yen</td> <td>Down 3% from FY 2012</td> <td>163.8 t/100 mill yen [Down 5.0%]</td> </tr> </tbody> </table> | Item | | | FY 2016 target value | | Results | CO ₂ emissions | FY 2015 basic unit target × production volume | | 230,090 t-CO ₂ [—] | Emissions by in-house production volume | 145.2 t/100 mill yen | Down 7% from FY 2008 | 146.2 t/100 mill yen [Down 6.3%] | Global emissions by in-house production volume | 172.2 t/100 mill yen | Down 3% from FY 2012 | 163.8 t/100 mill yen [Down 5.0%] | |
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| Logistics Reduce CO ₂ through transportation improvements | | | | | | | | | | | | | | | | | | | | | |
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| Item | FY 2016 target value | | Results | | | | | | | | | | | | | | | | | | |
| CO ₂ emissions | 13,300 t-CO ₂ | Down 16% from FY 1990 | 13,810 t-CO ₂ [Down 13%] | | | | | | | | | | | | | | | | | | |
| Emissions by sales | 2.39 t/100 mill yen | Down 15% from FY 2006 | 2.17 t/100 mill yen [Down 23%] | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | (2) Promote reusable energy | Introduction of reusable energy | Amount of reusable energy introduced: 676 kW (cumulative) | ○ | E_16 | | | | | | | | | | | | | | | | |
| Reduce waste | (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 FY 2009 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 | | △ | E_18 E_19 | | | | | | | | | | | | | | | | |
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| | | Item | FY 2016 target value | | | Results | | | | | | | | | | | | | | | |
| Emissions by in-house production volume | 7.1 t/100 mill yen | Down 15% from FY 2008 | 7.34 t/100 mill yen [Down 12%] | | | | | | | | | | | | | | | | | | |
| Direct landfill waste | Zero | | Zero | | | | | | | | | | | | | | | | | | |
| Logistics Reduce packaging material consumption through simpler packaging, using more returnable containers, etc. | | | | | | | | | | | | | | | | | | | | | |
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| Item | FY 2016 target value | | Results | | | | | | | | | | | | | | | | | | |
| Emissions by sales | 0.84 t/100 mill yen | Down 15% from FY 2006 | 0.77 t/100 mill yen [Down 20%] | | | | | | | | | | | | | | | | | | |
| Effective use of resources | Reduce materials discarded in production/water usage and effectively use resources | Materials discarded (1) Reduce stock removal and improve yield through design and technique changes (2) Countermeasures targeting point of origin, reduction | Materials discarded by in-house production volume Results 38.1 t/100 mill yen | — | E_18 E_21 E_22 | | | | | | | | | | | | | | | | |
| | | Water usage Promote recycling, water conservation and waste reduction | Water usage by in-house production volume Results 1.56 t/100 mill yen | | | | | | | | | | | | | | | | | | |
| Reduce primary materials and secondary materials | Reduce environmentally burdensome substances in production activities | Substitution with products that do not contain substances subject to PRTR | Release and transfer of substances subject to PRTR: 39 t | ○ | E_23 | | | | | | | | | | | | | | | | |
| Preserve and improve the global environment, forge communication | (1) Enforce preventative measures for environmental problems and observe regulations | Ongoing efforts for zero environmental regulation violations and claims from residents through the strengthening of daily control tasks | Environmental accidents: 0 | ○ | E_10 E_11 | | | | | | | | | | | | | | | | |
| | (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_24 S_21 ~26 | | | | | | | | | | | | | | | | |
| | (3) Proactive disclosure of environmental information and enhancement of communication activities | (1) Enhance and continue issuance of CSR reports (2) Provide more environmental information | Issued CSR report 2015 | | S_21 | | | | | | | | | | | | | | | | |
| | (4) Action for biodiversity | Promote activities based on our Biodiversity Conservation Action Guidelines | (1) Activities for preservation of woodland areas (2) Tree planting | | E_25 E_26 S_24 S_25 | | | | | | | | | | | | | | | | |

Environmental management

Environmental impact on business activities

Reduction of environmental burden in all stages

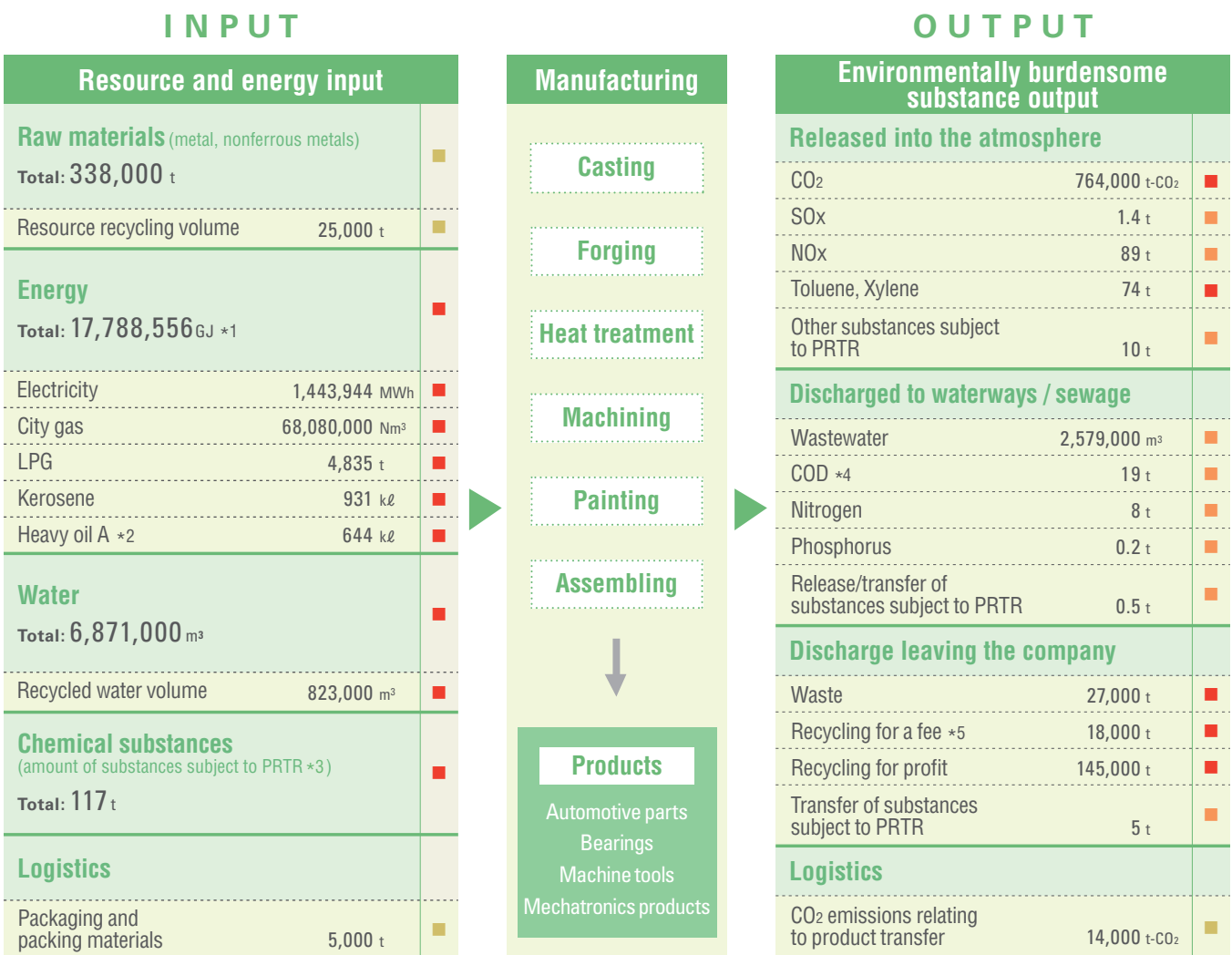
JTEKT strives to quantitatively assess overall resource and energy amounts used (input) and amounts discharged into the environment (output) in order to reduce environmental burden in all business activity stages.

Resource and energy input versus environmentally burdensome substance output

The table below shows the resource and energy input versus environmentally burdensome substance output for FY 2015.

In order to minimize the impact of business activities on global warming, JTEKT strives to reduce energy consumption with a focus on those processes with high energy consumption, such as casting, forging, heat treatment and machining.

Resource and energy input versus environmentally burdensome substance output



- Tally of the 19 JTEKT and domestic group companies and the 38 overseas group companies
- Tally of the 19 JTEKT and domestic group companies
- JTEKT independent

*1 GJ Giga-joule (heat quantity unit), G=10⁹

*2 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.

*3 PRTR regulation "PRTR" is an abbreviation for Pollutant Release and Transfer Register, which is a system created by the government for reporting the amount of chemical substances released or transferred.

*4 COD Chemical Oxygen Demand (water quality index)

*5 Recycling for a fee A processing fee is paid in order to recycle.

Environmental management

CO₂ emissions for the overall supply chain

Based on guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry (*1), JTEKT calculates then endeavors to reduce the amount of CO₂ emitted through its business activities, including its supply chain, as well as the use and disposal of products sold. Results for the entire JTEKT group in FY 2015 are shown in the below table.

→ E_15 Related article

→ E_27 Appendix

*1 Guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry General Guidelines on Supply Chain GHG Emission Accounting.

CO₂ emissions for the overall supply chain

| Scope (*2) | Emissions (t-CO ₂) | Remarks |
|---|--------------------------------|---|
| Scope 1 (Self-produced direct emissions) | 115,000 | Self-produced emissions through using city gas and other fuels |
| Scope 2 (Indirect emissions produced by own energy source) | 649,000 | Emissions produced due to using electricity purchased by JTEKT |
| Scope 3 (Other indirect emissions) | 7,377,000 | Emissions produced by related activities such as raw material purchasing, disposal and distribution |

*2 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.

Environmental accounting

Assessment of cost and results

▶ Figure-01

By quantitatively assessing the costs and results of environmental conservation, we continue to make both effective and efficient improvements. We use environmental accounting to help familiarize our stakeholders with our environmental conservation activities, and publicly disclose related information. The tally system is in accordance with the Ministry of the Environment's Environmental Accounting Guideline.

Environmental accounting results for FY 2015

Environmental conservation costs for FY 2015 were 1.61 billion yen in investments and 3.88 billion yen in management costs, adding up to a total of 5.49 billion yen. This was an increase of 480 million yen (9.6 percent) from the previous year. In order to promote PCB waste processing, we implemented measures for PCB ballasts and low-concentration PCB. As a result, recycling cost increased by 130 million yen compared with the previous year.

▶ Figure-01

Environmental conservation costs

(Million yen)

| Type | Details | Investment | Cost |
|------------------------------------|---|--------------|--------------|
| [1] Business on-site costs | ● Service & upkeep of environmental equipment | 318 | 265 |
| ① Pollution prevention costs | | | |
| ② Environmental conservation costs | ● Measures for energy conservation | 142 | 119 |
| ③ Resource recycling costs | ● Waste processing, recycling | 90 | 493* |
| [2] Upstream and downstream costs | ● Green purchasing | — | 39 |
| [3] Management activity costs | ● Environmental monitoring, measurements, etc. | 7 | 151 |
| [4] R&D costs | ● R&D of environmentally friendly products | 1,056 | 2,730 |
| [5] Social activities costs | ● Disclosure of environmental information, greenification, etc. | — | 81 |
| [6] Environmental damage costs | ● Soil and groundwater restoration | — | 0 |
| Total | | 1,613 | 3,877 |
| Gross amount | | | 5,489 |

*Includes PCB waste processing cost

Economic benefit of environmental conservation measures

(Million yen)

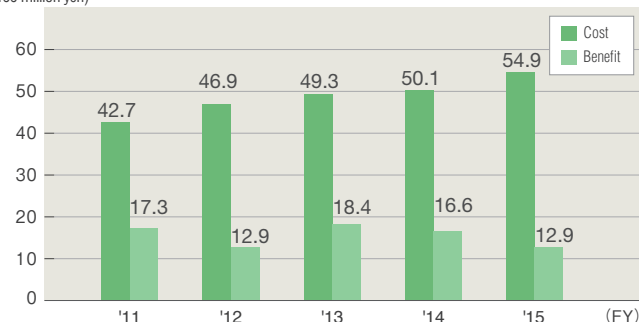
| Details of benefits | Economic benefit |
|--|------------------|
| Profit from recycled material sales | 618 |
| Energy-cost reduction from promoting energy conservation | 632 |
| Reduction of waste processing costs | 43 |
| Total | 1,293 |

Benefits towards material amount reduction from environmental conservation measures

| Details of benefits | Benefits towards material amount reduction |
|---|--|
| Energy consumption (t-CO ₂) | 23,400 |
| Waste output (t) | 2,162 |

Cost and benefits of environmental conservation measures

(100 million yen)



*We have not calculated 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.

*Depreciation costs are not included. Expenses with multiple purposes are proportionately distributed.

*Scope of calculation: JTEKT independent (including some group companies working at JTEKT)

*Calculated period: FY 2015 (April 2015 to March 2016)

Environmental management

Major activities in FY 2015

JTEKT Group Environmental Coordinating Committees

In order to share policies and targets with the entire group and strengthen initiatives, the JTEKT Group Environmental Coordinating Committee is held every year and is attended by representatives of both domestic and overseas group companies.

Domestic JTEKT Group Environmental Coordinating Committee

The Environmental Coordinating Committee is held three times a year with all 19 group companies in Japan to promote activities for CO₂ reduction, waste reduction, and environmental disturbance prevention. In April 2015, a Coordinating Committee was held by environment managers from domestic group companies and discussion was had regarding the status of each company's FY 2014 environment initiatives and plans for FY 2015. In July and December of 2015, in addition to reporting and discussing our performance up until now and future efforts, risk countermeasures for environmental equipment and the like were checked during plant tours as a means of improving environmental conservation countermeasures.



JTEKT Group Environmental Coordinating Committee in Japan held on July 24th

Overseas JTEKT Group Environmental Coordinating Committee

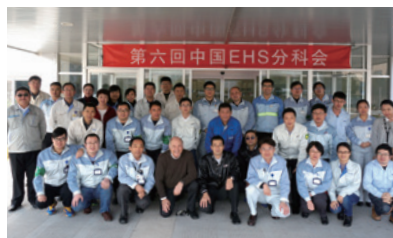
In February 2016, an Environmental Coordinating Committee was held in which the representatives of JTEKT overseas group companies participated. As with the committee gathering in Japan, the participants bolstered improvement activities for achieving 2015 targets and continued with the consolidated environmental audit system to bring the enforcement of compliance to a new level. Moreover, the Environmental Challenge 2050 and next mid-term management plan, Environmental Action Plan 2020, are being rolled out and their respective targets shared throughout the JTEKT group.

ASEAN Management Meeting

In January 2016, the ASEAN Management Meeting was held by the management executives of group companies in the ASEAN region. The meeting was attended by representatives of JTEKT group companies in the ASEAN region and the Environmental Challenge 2050 and Environmental Action Plan 2020 were rolled out. Together with ASEAN group companies, JTEKT will continue to achieve its groupwide environmental targets and observe environmental legislation.

China Safety and Health Environment (EHS) Section Meeting

JTEKT held a meeting in China concerning safety, health and the environment during June 2015 and January 2016. Participants reported environmental activities and issues at each group company in China, and case examples of improvement were rolled out to each company. By implementing inspection tours both inside and outside of plants, we enhanced the specialized knowledge and skills of employees and improved mutual environmental awareness.



China EHS Section Meeting

Environmental management

Jens Benson
JEU/JEO(France)

My
CSR



Initiatives for zero accidents and alleviation of environmental impact due to the manufacture of JTEKT products

In 2015, with the aim of alleviating and improving environmental impact through the effective utilization of resources in Europe, JTEKT established a Production Support Team which included safety health and environmental conservation divisions. In order to comprehensively ascertain the status of plants, all plants in the European area were subjected to an audit in accordance with JEO (*1) standards and after the initial audit, tools were utilized which enable sharing between JTEKT plants both within and without Europe of information such as workplace accidents and best practice. In regards to safety and health, and environment conservation, employee-focused activities are being promoted and the training program is undergoing improvement in order to deepen understanding of the importance of HSE (*2) management in daily life and at work, and an internal HSE standards and prevention program is being established. The European branch of the JTEKT group believes a corporate culture of openness and trust is important in order to achieve targets. Through initiatives to reduce landfill waste, increase recycling percentages and reduce and analyze energy and water consumption, the Production Support Team is protecting natural resources and reducing JTEKT's environmental footprint. While still a newly formed team, it serves an important role for plants and intends to exert every effort to achieve ongoing improvements. The team believes that securing a safe work environment for employees and achieving environmentally-sustainable production are important points requiring attention and, with this in mind, we go about our daily tasks with a sense of responsibility towards our generation and the generations to follow.

*1 JEO JTEKT Europe Operation. An organization to support production established within JTEKT's European headquarters (JEU)

*2 HSE Health, Safety and Environment. Initiatives for industrial health and safety and environment.

Reducing environmental risk

Environmental accident prevention activities

To prevent environmental accidents, we share countermeasures implemented in response to incidents occurring both inside and outside the company for similar equipment. Moreover, in order to comply with environmental legislation, treaties and convention levels, we have set internal standards (*1) more stringent than regulations, which we manage thoroughly.

*1 JTEKT's internal effluent standards are 80 percent of regulatory requirements.

Legal compliance with environmental legislation

In FY 2015, JTEKT received zero complaints regarding exceeding environmental regulatory requirements, environmental incidents and the environment in general. However there were 20 environmental near-miss incidents (*2), including cases of exceeding internal standards. In addition to investigating causes and implementing countermeasures for each incident, JTEKT also shares information and countermeasures with all plants through the Co-operative Study Group on Environmental Disturbances and Near Misses mentioned hereinafter in an effort to prevent recurrence of similar cases.

*2 Incidents that had only a slight impact on the environment and were handled within the area they occurred in.

Cooperative Study Group on Environmental Disturbances and Near Misses

Once every two months, JTEKT holds a Cooperative Study Group on Environmental Disturbances and Near Misses in order to highlight environmental near-miss incidents that have occurred other than environmental accidents and thoroughly share countermeasure content and implementation items companywide. In this study group, environmental managers from all JTEKT plants gather at the plant where the near miss occurred and discuss the incident using the *genchi genbutsu* approach. Then, the efficacy of countermeasures is examined, and items to be rolled out companywide are discussed with all employees as a means of recurrence prevention.



Cooperative study group on environmental disturbances and near misses (Kameyama Plant)

Environmental management

Environmental patrol by the plant manager

As part of our Environmental Month every June, managers of each plant conduct environmental patrols. FY 2015 environmental patrols involved confirming the management status of rainwater drains and oil-water separation tanks, the status of countermeasures for oil leakage from waste laydown areas and dormant machinery storage areas, and oil contamination on plant roads and floors.



Environmental patrol (Tokushima Plant)

Emergency drills

JTEKT performs regular emergency drills to prepare for the occurrence of various environmental accidents. Every plant also conducts emergency drills for nightshift workers, assuming the occurrence of an accident at night.



Emergency drills (Tadomisaki Plant)

Environmental audits

Internal audits

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

External audits (ISO14001)

JTEKT was subjected to an ISO14001 surveillance audit in April 2016. As a result, there were zero cases of non-conformity, and our environmental management system was deemed as congruent with standard requirements and having been effectively implemented. However, nine cases were identified as having room for improvement, and therefore the departments in charge of handling these cases have been specified and corrections are being made. In response to the revision made to ISO14001 in September 2015, JTEKT plans to have a recertification audit to the revised standard conducted during FY 2017.



ISO14001 external audit

Environmental audits of overseas group companies

The JTEKT group has constructed a consolidated auditing system and since FY 2014 has been conducting environmental audits on overseas group companies, focusing on legal compliance activities aimed at preventing environmental disturbances and complaints. In FY 2015, audits were conducted at three European bases, seven Chinese bases and four ASEAN bases.



Environmental audit (KBVM: France)



Environmental audit (JADS: France)



Environmental audit (JTC: Thailand)

Environmental education

Environmental awareness education

During Environment Month in June of 2015, environmental awareness training was held for all employees through e-learning. The theme this year was “Let’s abolish environmental disturbances and near-misses” and was completed by 6,699 employees.

Environmental management

Environmental communication **New!**

Interaction with other companies

JTEKT promotes environmental communication activities through interaction with other companies aimed at being mutually beneficial by serving as opportunities to both acquire skills and know-how, and leverage solutions to environmental issues as well as introduce other companies to JTEKT's environmental initiatives. In FY 2015, this interactive activity was held with Konica Minolta Inc. JTEKT visited Konica Minolta's Seishin site and observed environmental activities in the field. In turn, Konica Minolta visited JTEKT's Tokyo and Kokubu plants and meaningful interaction was had through the exchange of opinion on energy-saving items and improvement areas.



Plant tour (Konica Minolta's Seishin site)

Community discussions

All JTEKT plants regularly invite local residents and government members to community discussions. This is an opportunity to introduce JTEKT's environmental initiatives, have participants take a plant tour and voice their opinions in order to facilitate communication with the local community.

[→ S_22 Related article](#)

VOICE ISO14001 certification

In November 2015, Nakatetsu Co., Ltd. obtained ISO14001 certification. In order to achieve this goal, the people in charge at each plant worked together to establish an environmental management system. As a result, they were able to achieve their goal as planned. Facing many unknowns, in order to prepare even one document, each member had to investigate a broad spectrum of legislation and through this process, renewed their awareness of the importance of observing environmental legislation. We believe that through this activity, we accomplished a system to identify and observe the environmental legislation that applies to our company. Moving forward, we will carry out environmental training for our employees and engage in initiatives as one united entity.



Norihiko Arimura
NAKATETSU Co.,Ltd



ISO14001 certification

Environmentally considerate development and design

Social background

The influence of product usage on the environment is deeply related to the development and design phases of the product. To lower our environmental burden, our company must oversee products from material purchase through usage by the customer, all the way until disposal. We must also work on developing environmentally friendly designs which can be easily reused and recycled.

JTEKT's concept

Improve each product from every angle

We JTEKT, in line with our Corporate Philosophy of “contributing to the happiness of people and the abundance of society through product manufacturing that wins the trust of society.” develop and design environmentally friendly products. We believe that our products and technologies provide environmental countermeasures for our customer's products and manufacturing processes and as such, greatly contribute to the environment. Therefore, we strive to improve the environmental performance of each product throughout the entire product life cycle, and are producing results which will contribute to the prevention of global warming and the effective use of resources.

Promotion structure

Promotion by the Environmental Responsive Products Subcommittee

Under the guidance of the Global Environment Conservation Committee, which unites companywide environmental conservation activities, the Environmental Responsive Products Subcommittee is promoting the development of environmentally friendly products together with group companies in Japan. Innovative technology is used in the development and design stages to make products smaller, lighter, and 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.

Yoshihiko Nishida
Machine Tools & Mechatronics Operations
Headquarters Engineering Planning Office

My
CSR



Promote the development of environmentally-responsive products

The Machine Tools & Mechatronics Operations Headquarters promotes product development with consideration to creating environmentally-responsive products from the concept phase. Amidst this, as the overseeing department for engineering divisions, our department participates in the Environmental Responsive Products Subcommittee and a Working Group for Investigation of Environmentally Burdensome Substances. The aim is to work together with engineering divisions to promote CO₂ reduction and 3R (*1) activities in order to disseminate designs conscious of CO₂ reduction and send a higher number of environmentally-friendly products out into the world.

As future initiatives, we intend to conduct product LCAs (*2) in order to quantitatively assess the environmental impact up to product disposal.

*1 **3R** Derived from the first letters of Reduce, Reuse and Recycle. A concept regarding the order of priority for waste processing.

*2 **LCA** Life cycle assessment. A method to quantitatively assess resource consumption and environmental burden throughout product life cycle and determine the resulting impact on the planet and ecosystems.

Environmentally considerate development and design

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 within product development.

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

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

Assessment of products mentioned in the PICK UP section

| Developed product name | Percentage of environmental burden reduction | |
|--|--|------------------------|
| Low-friction reduction gear for EPS using new grease | 17.8% | → F_02 Related article |
| New design anti-creep ball bearing | 4.0% | → F_06 Related article |
| New ceramic ball bearing for motors | 1.0% | → F_07 Related article |

Group company activities

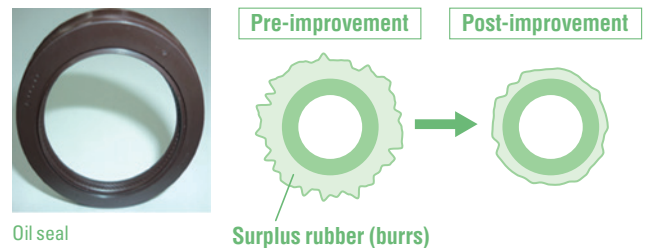
JTEKT conducts environmental design activities with intimate interaction between each operations headquarters and all group companies. Through creative ideas from the design stage, products of the JTEKT group are contributing to the world environment.

Main measures

| | |
|--------------------------|------------------------------|
| Group companies in Japan | Koyo Sealing Techno Co.,Ltd. |
|--------------------------|------------------------------|

Reduce rubber consumption through change to oil seal mold structure

In the forming of oil seals through vulcanization, the basic design focuses on ensuring gas removal from the mold cavity and stable rubber filling quantity by having the excess rubber (burrs) that have melted of the mold parting, expelled outside the mold. These burrs are removed after vulcanization and disposed of as waste however by changing the mold structure, JTEKT succeeded in reducing the number of burrs. As a result, we reduced consumption of rubber, which is a material, by 15%.



Prevention of global warming

Social background

In November 2015, at COP21 (21st session of the Conference of the Parties) held in Paris, the Paris Agreement was adopted as an international framework to countermeasure global warming. One of the global long-term goals set out by the Paris Agreement is to keep a global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Companies are also required to strengthen initiatives to reduce both direct and indirect CO₂ emissions.

[→ E_08 Related article](#)

JTEKT's concept

Reducing CO₂ emissions within all processes

In order to help prevent global warming, JTEKT engages in activities to reduce emissions of CO₂, a major greenhouse gas, 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.

Reducing CO₂ emissions in production

Reducing domestic CO₂ emissions

▶ Figure-01

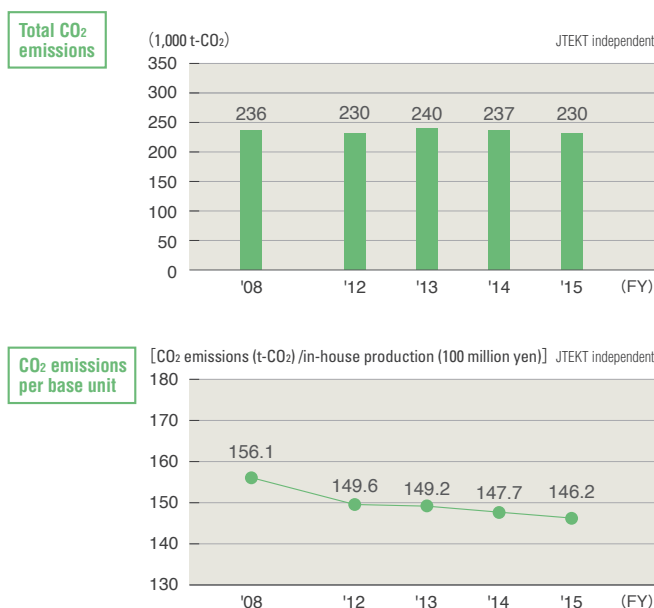
JTEKT set the target of reducing our CO₂ emissions basic unit to 7% compared to FY 2008 by FY 2015 and engaged in activities to achieve this. Although we reduced our CO₂ emissions by 7,000 t during FY 2015 due to improved energy saving methods, we did not reach our target basic unit of CO₂ emissions, achieving only 146.2 t/100 million yen. In March 2016, JTEKT formulated Environmental Challenge 2050 as an environment action plan to minimize CO₂ emitted from our plants during production. In order to proactively promote CO₂ reduction during production, we achieved visualization of energy consumption on each line in our plants and are engaging in activities to reach our goal such as having variable fixed costs and reducing standby power during non-operating times.

Reduction of global CO₂ emissions

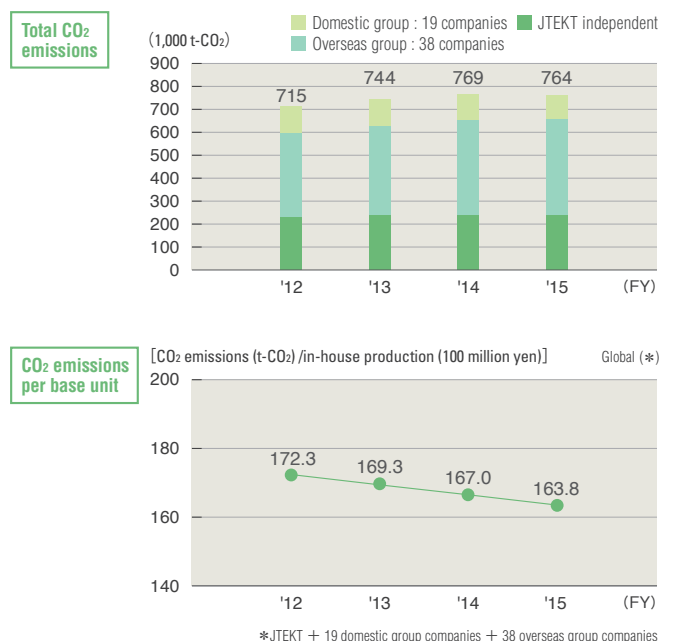
▶ Figure-02

With an aim to minimize the impact of global production operations on global warming, JTEKT is working to reduce CO₂ emissions not only within the company but also at all JTEKT group companies in Japan and overseas. The CO₂ emissions basic unit for FY 2015 was 5.0% less than the FY 2012 level, meaning that we had met our target. We will continue to improve productivity in order to prevent global warming and improve production efficiency as an entire group.

▶ Figure-01 Transition of total and per base unit CO₂ emissions in production



▶ Figure-02 CO₂ emissions (global and base unit)



Prevention of global warming

Main measures

| | |
|--------------------------|-------------------------|
| Group companies in Japan | Eiko Seimitsu Co., Ltd. |
|--------------------------|-------------------------|

Initiatives to introduce energy-saving equipment

As part of improving employee work efficiency and workplace environment, JTEKT is utilizing the Japanese government's subsidization scheme for energy-saving equipment to update our aged air-conditioning equipment. We have also made the switch from kerosene to LPG. Furthermore, we have introduced a demand monitoring unit to keep track of electricity consumption. These initiatives have resulted in reducing contract electricity by 110 kW and reducing costs by 250,000 yen per month. Moreover, CO₂ emissions have been reduced by 0.066 t (*). We will continue to effectively utilize national and prefectural energy-saving subsidization schemes and promote energy-saving activities such as switching to LED lighting in plants.



*Average from Jan. to Mar. 2015 (compared to the average from Jul. to Sep. 2014)

Tadashi Nagata
Eiko Seimitsu Co., Ltd.

Initiatives for energy-saving diagnosis ★New!

In order to reassess our energy-saving activities in recent years, JTEKT requested that Konica Minolta, with whom we interacted in FY 2015 through an environmental activity, to perform an energy-saving diagnosis. As a result, despite our efforts to renew existing equipment with high-efficiency equipment, it was revealed that we were weak in the aspects of equipment maintenance and operational



My
CSR

Syunsuke Kumagai
Bearing Operations Headquarters Tokyo Plant
Process Engineering Dept.
Facilities & Equipment Maintenance Section

Initiatives for the prevention of global warming

JTEKT's Tokyo Plant engages in various activities with the aim of improving productivity and reducing CO₂ emissions through efficient energy use.

To date, Tokyo Plant has introduced high-efficiency equipment such as solar power and cogeneration systems as well as such as LED lighting, and makes ongoing improvements to these. It also conducts energy-saving patrols to raise and thoroughly establish workplace awareness of energy-saving. The city of Tokyo has executed an ordinance requiring stringent CO₂ emission reductions and employees at Tokyo Plant will unite in achieving further improvements and targets by receiving energy-saving diagnoses by external parties, etc.

management, therefore we revised the management items of daily inspections. In FY 2016, JTEKT plans to work towards achieving our Environmental Challenge 2050 by creating new energy-saving items, developing human resources able to conduct energy-saving diagnoses, and having energy-saving diagnoses performed by external consultants.

Initiatives for production engineering innovation ★New!

Establishment of the Production Engineering Innovation for CO₂ Reduction Subcommittee

In 2016, JTEKT newly established the Production Engineering Innovation for CO₂ Reduction Subcommittee. In order to realize the low-carbon society aimed for by our Environmental Challenge 2050, JTEKT is promoting energy-saving and CO₂ reductions through investing in production equipment and developing innovative equipment and production techniques. As an initiative to improve productivity, we have established energy-saving guides for all production equipment investment and aim to reduce CO₂ emissions per product by 30% of existing levels. As initiatives for production engineering innovation, we aim to promote innovation themes to half CO₂ emissions, pursue a shift to 3SCF(*1) for equipment and production techniques as well as build smart factories (*2) which utilize reusable energy.

[→ J_32 Related article](#)

*1 3SCF An abbreviation for "simple, slim, smart, compact, flexible"

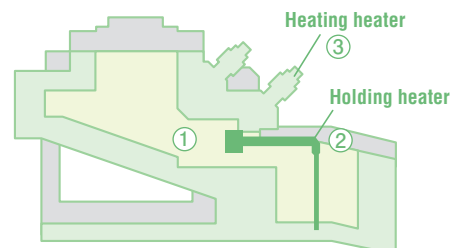
*2 Smart factory All devices and equipment in a plant are connected to the Internet and information such as quality and status are appraised in detail and utilized to achieve a plant where equipment vs. equipment and equipment vs. humans work in harmony.

Main measures

Development of the hybrid melting and holding furnace

JTEKT newly developed a hybrid melting and holding furnace for use in the casting process and introduced it to its production lines in April 2016. The developed furnace has succeeded in reducing CO₂ emissions by 50% of conventional models through efforts such as reducing heat release through a smaller furnace body and improved heat insulation and changing the heating/holding temperature energy from gas to electricity to create an exhaust gas-free design.

Hybrid melting and holding furnace



- ① Reduced heat release through a smaller furnace body and improved heat insulation
- ② Reduced heat release through a smaller pumping port
- ③ Changing the heating/holding temperature energy from gas to electricity to create an exhaust gas-free design

CO₂ emissions 50% decrease

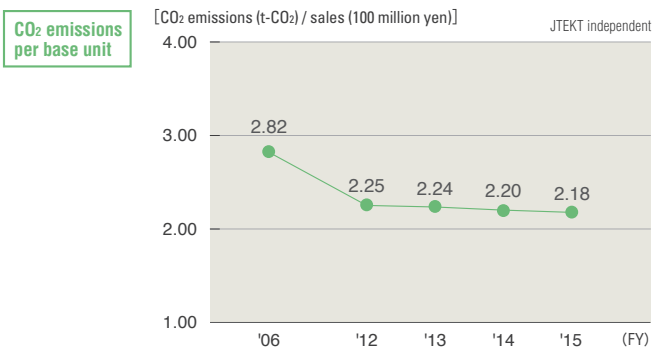
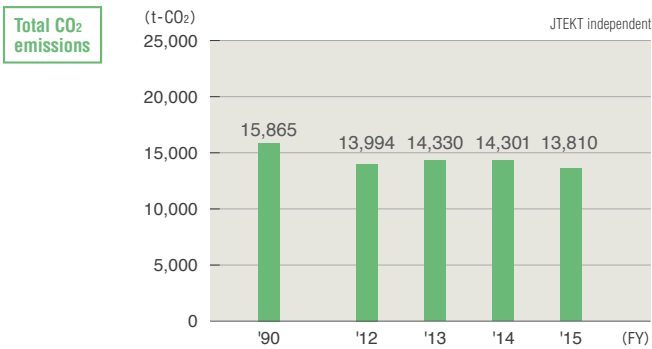
Prevention of global warming

Reducing CO₂ emissions in logistics

Reducing CO₂ by integrating product delivery shipments

In FY 2015, JTEKT reduced the basic unit for CO₂ emissions by around 1% compared to the previous year, or 2.18 t/100 million yen by integrating product delivery shipments. In FY 2016, we will continue our efforts to reduce CO₂ through further integrating product delivery shipments and shift to using electric fork lifts in plants, etc.

Transition of total and per base unit CO₂ emissions in logistics



VOICE Eco drive initiative

In November 2015, JTEKT's Toyota Branch Office held an Eco Drive Week to raise awareness of CO₂ reduction and safe driving. This was based on the eco drive (*) initiatives promoted by the National Police Agency, etc. A briefing was held and all Toyota Branch Office employees watched a DVD produced by the Ministry of the Environment called "Top 10 Recommended Points for Eco Driving". The campaign was run the following week, and the 76 participants were emailed daily to maintain awareness levels. In a questionnaire held after the campaign, many participants responded that their awareness of eco driving had risen as a result of Eco Drive Week. JTEKT would like to continue raising awareness of eco driving by showing employees the abovementioned DVD before holidays, etc. when people are more likely to drive.

*Eco Drive A way of driving a car by being mindful of alleviating environmental burden. This is spread and promoted by the Spread Association of Eco-Drive run by the National Police Agency, the Ministry of Economy, Trade and Industry, the Ministry of Land, Infrastructure, Transport and Tourism, and the Ministry of the Environment.



(From the left)
Yuko Kondou, Rie Nakabayashi, Yuji Bora, Hanao Mori
(All from the Sales & Marketing Headquarters
Toyota Branch Office(Automotive)Sales Control Dept.
Sales Control Section)



Eco Drive Week poster

Effective use of resources

Social background

Preservation of the world's resource foundation is a major theme of ISO26000, the GRI Guidelines (G4) and Sustainable Development Goals (SDGs) and is the objective of the many sustainability strategies of the companies which comprise the board of directors for the Organization for Economic Co-operation and Development (OECD). These strategies strongly demand that companies lessen their usage of raw materials and recycle parts.

JTEKT's concept

Responsibility as a *monozukuri* company

At JTEKT, we consider the effective use of resources as one of the responsibilities of an environmentally friendly *monozukuri* company. By making improvements and devising ideas for the production processes of each product, we strive to reduce material usage and waste output, as well as recycle and save valuable resources.

Saving resources in production

Reduction of primary material consumption

JTEKT is working to transition to net shape (reduction of machined portions) by improving forging and casting formation technologies, and reduce the amount of materials used.

Main measures

▶ Figure-01

Reduction of material by applying a friction weld technique

In the manufacture of hydraulic distributors, which are a machine tool component, JTEKT has applied a friction weld technique to integrate material with differing diameter sizes and reduce portions requiring cutting and other forms of machining. This has significantly reduced material consumption.

Reduction of secondary material consumption

We succeeded in reducing consumption by revising the material, shape, hardness and other specs of secondary material for products 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.

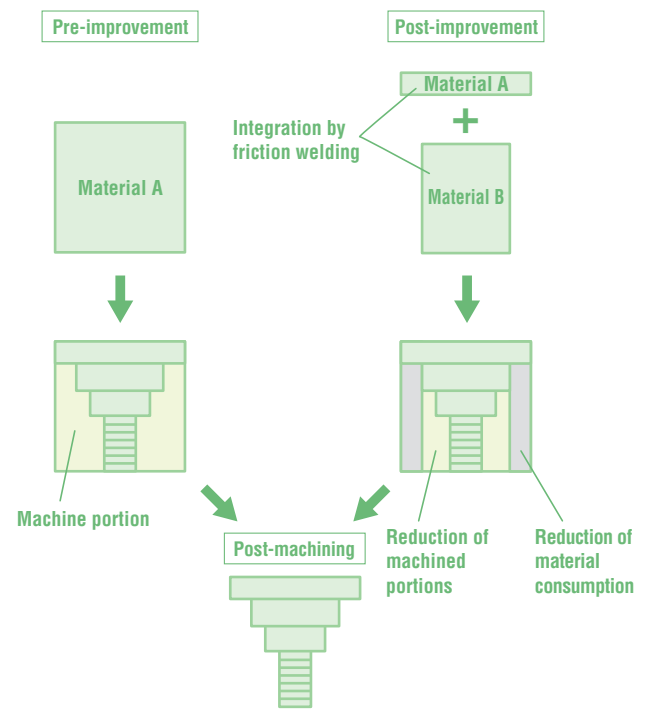
Main measures

Extended mold life by applying a new coating

▶ Figure-02

In the forging process, the mold and products rub up against each other repeatedly, causing the contact portions to wear and the mold coating to gradually peel away. As such, JTEKT changed the coating to one with excellent heat and wear resistance and began the regular application of new coats to extend mold life.

▶ Figure-01 Reduction of material by applying a friction weld technique



Material consumption **Approx. 40% decrease**

▶ Figure-02 Extended mold life by applying a new coating



Mold life **5 times**

Effective use of resources

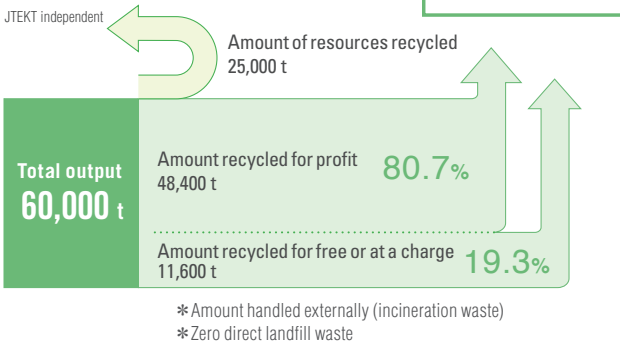
Waste reduction

Initiatives for achieving Zero Emissions

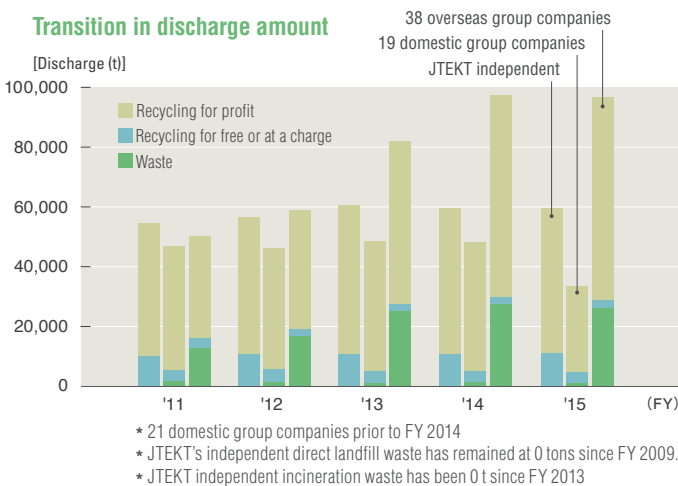
JTEKT has been engaging in activities based on 3R (Reduce, Reuse, Recycle) to achieve a 100 percent recycling rate for the effective use of resources regarding all discharged materials, including waste. The result was the achievement of a 100 percent recycling rate in November 2012, which has been maintained ever since. We are currently promoting various initiatives to achieve Zero Emissions(*) at all JTEKT group plants.

***Zero Emissions** The practice of utilizing waste and byproduct created through industrial activities as resources for other industries in an attempt to avoid releasing waste into the natural world on the whole. Proposed by the United Nations University in 1994.

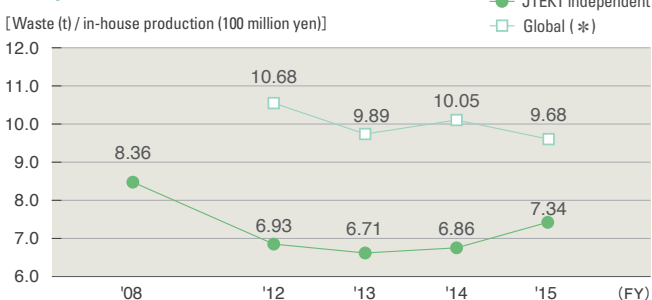
Processing of industrial waste and recycled materials



Transition in discharge amount



Yearly transition of waste basic unit



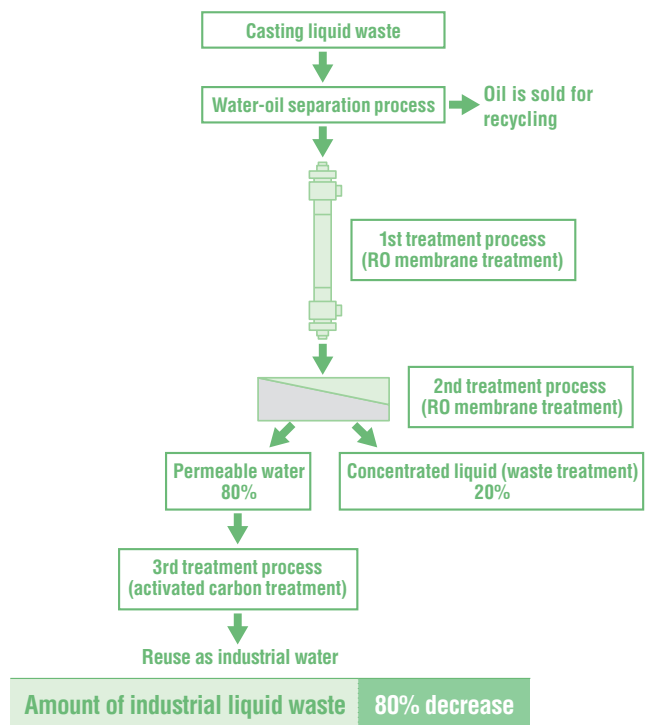
* JTEKT + 19 domestic groups + 38 overseas groups

Main measures

Initiatives to reduce industrial liquid waste

The casting process uses large quantities of soluble mold separating agent which becomes liquid waste after it is used and accounts for the majority of industrial liquid waste produced in JTEKT plants. This type of industrial liquid waste has a high COD value and is extremely difficult to treat, therefore JTEKT had previously outsourced all treatment to an external company. However, in FY 2015, Hanazono Plant installed a liquid waste condenser using UF/RO membrane technology. This achieved an 80% reduction in the amount of liquid waste created in the casting process. JTEKT will continue to engage in activities with the aim of further reduction while adopting new technologies.

Liquid waste condenser using UF/RO membrane technology



VOICE

Promotion of industrial liquid waste reduction through a working group

Hanazono Plant conducts integrated production, from casting and machining to assembly. The casting and machining processes in particular create large quantities of waste compared to the assembly process. As such, JTEKT not only engages in activities to reduce the amount of industrial waste created by casting, but also endeavors to achieve net shape through reducing swarf generated in the casting and machining processes. We will continue to gather wisdom with the concerned departments cooperating in a working group and promote further waste reductions.

(From the left)
Kengo Okudaira
Steering Systems Business Headquarters Hanazono Plant
Process Engineering Dept.
Facilities & Equipment Maintenance Section
Daishi Hirabayashi
Steering Systems Business Headquarters Hanazono Plant
Administration Dept. General Affairs Section
Hidehiko Umezu
Steering Systems Business Headquarters Hanazono Plant
Process Engineering Dept. Engineering Section 1



(All from the Hanazono Plant at the Steering Systems Business headquarters)

Effective use of resources

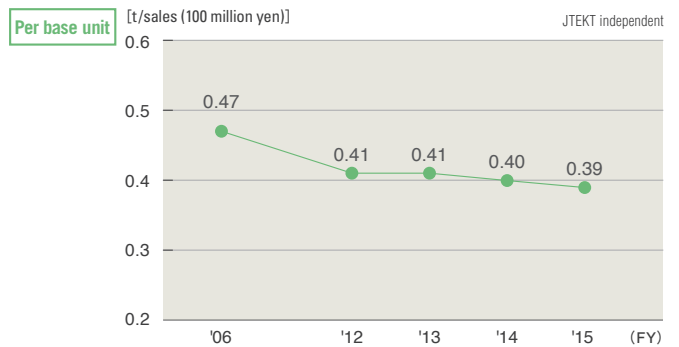
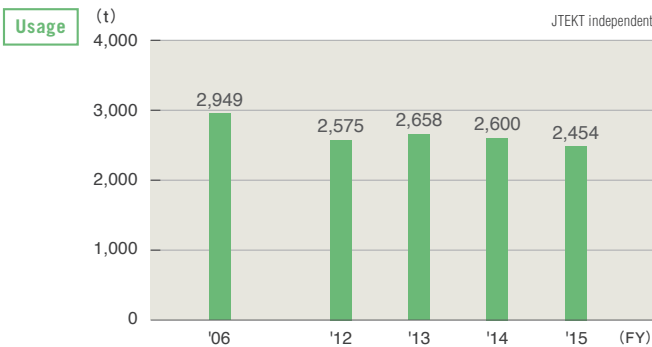
Reduction of packaging material

Reducing packaging and packing material

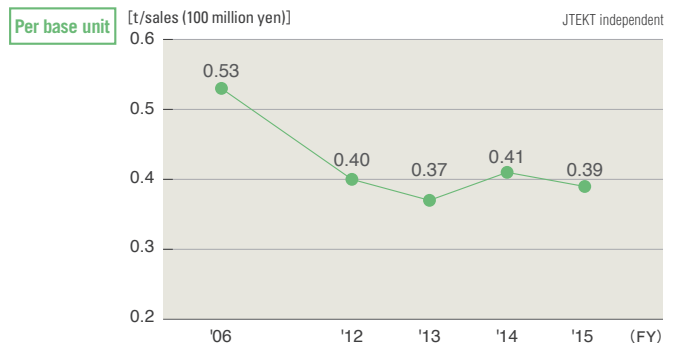
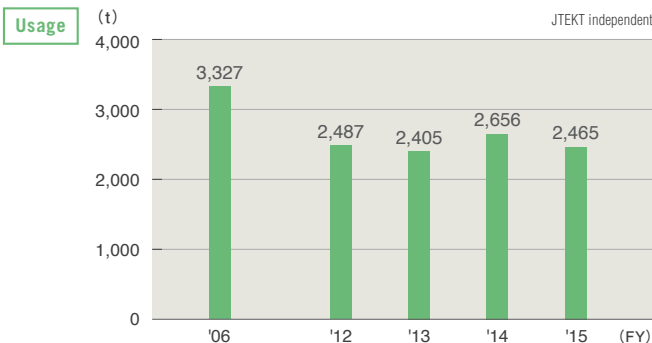
In order to effectively use resources, our company has established targets for packaging and packing material for both wood and paper, and promotes simpler, returnable and reusable packaging. For wooden packaging and packing material, we expanded the scope of returnable pallets and simplified wooden boxes, and for paper packaging and packing material, we switched from disposable cardboard to returnable plastic cases.

We also promote various initiatives, such as reviewing excessive packaging, using carboard boxes to suit product size to reduce cushioning material, etc. In FY 2015, JTEKT reduced our annual consumption of packaging and packing material on the whole by 12 t through reduction of wooden boxes for exporting products.

Transition of wood packaging usage and per base unit



Transition of paper packaging usage and per base unit



Effective use of resources

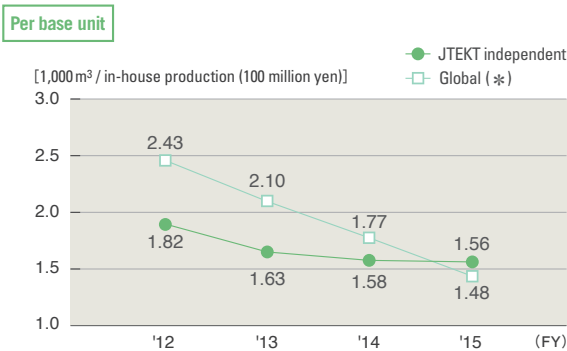
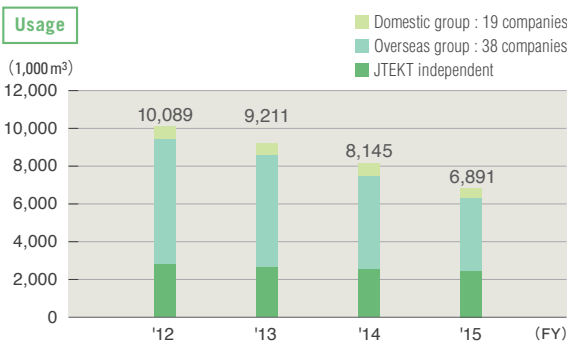
Reduction of water usage

Promoting efficient water usage

To reduce the usage of water, a precious resource, we engage in internal activities to decrease wasteful usage and recycle water. In FY 2015, we had at first planned on improving our basic unit and usage amount of water by more than 3 percent compared with FY 2012, however we achieved this goal ahead of schedule in FY 2014. Therefore, we set our sights on improving FY 2014 figures by 0.5 percent or more. As a result, we achieved a 1.1 percent (20 m³/100 million yen) improvement in basic unit and reduced usage by 3.0 percent (76,000 m³).

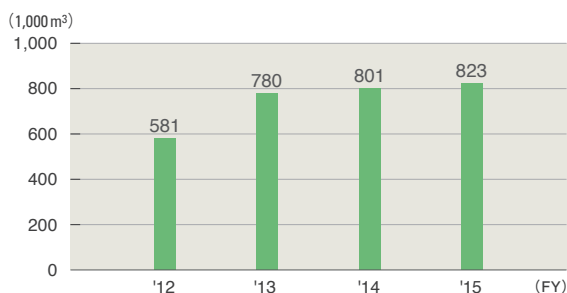
We have already achieved our planned target for FY 2016, an improvement 4 percent higher than FY 2012. We will therefore continue activities toward a target of 0.5 percent or higher improvement compared with FY 2015 results.

Water usage / Basic unit transition / Amount of recycled water



* JTEKT + 19 domestic groups + 38 overseas groups
21 domestic group companies prior to FY 2014

Amount of recycled water (JTEKT independent)



Main measures

| | |
|--------------------------|-------------|
| Overseas group companies | JAUk (U.K.) |
|--------------------------|-------------|

Initiatives for recycling rainwater

JAUk has introduced a rainwater storage system which utilizes rainwater, an abundant natural resource in the U.K. The system involves storing rainwater in a tank, removing bacteria with a UV filter where necessary, then reusing this water in the coolant systems of machining centers. Compared to when the company used city water, it was able to reduce annual water usage by 70% (980 m³) and cost by 3,010 pounds. JAUk will continue promoting rainwater utilization initiatives, such as using it for washing processes and plant amenities.



Rainwater storage system (JAUk, U.K.)

Effective use of resources

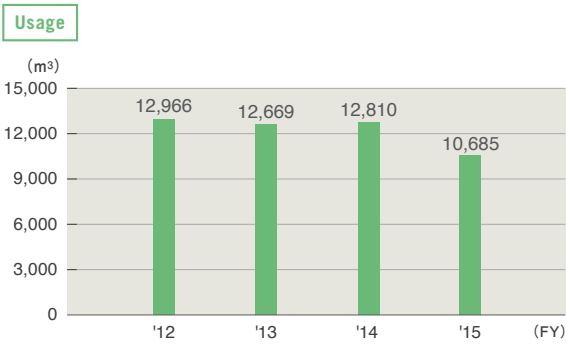
Main measures

| | |
|--------------------------|---------------|
| Overseas group companies | KBVM (France) |
|--------------------------|---------------|

Initiatives for reducing water usage

KBVM's Maromme Plant engages in ongoing initiatives to reduce water usage with the aim of effectively utilizing water resources and reducing cost. Through improvements such as consolidating cooling towers, changing cooling towers to dry coolers and changing washing processes to drying, the plant reduced its 2015 water usage by approximately 3,000 m³. This was an 18% reduction compared with FY 2012. Maromme Plant will continue aiming for further cost reductions through initiatives such as reusing water within processes and renewing washing machines in response to water-related risk which is predicted to grow in the future.

Transition in plant water usage



Dry cooler



Cooling tower

VOICE Aiming for sustainable water resources

In Europe, water is available at a relatively low cost however it is a resource essential to people's lives and something which manufacturers cannot do without. We recognize water to be a common cyclic resource and understand our responsibility to protect it for future generations. In France, strict regulations have been put in place to prevent water pollution and health issues have arisen due to legionella as a result of inappropriate cyclic usage of water. As such, KBVM Maromme Plant believes sustainable initiatives relating to cyclic water of cooling towers are its basic responsibility in order to avoid jeopardizing the health of its employees. Through the effective operation of an environment management system, Maromme Plant will continue working to further reduce environmental burden.



Pascal Froissard (Left)
Jean-Paul Clement (Right)
KBVM Maromme (France)

Control and reduction of environmentally burdensome substances

Social background

There are restrictions on the usage and release of environmentally-burdensome substances which adversely impact ecosystems and human health. Companies are expected to implement measures to thoroughly control and reduce environmentally-burdensome substances in all stages of production and observe all regulations.

JTEKT's concept

Reducing environmentally burdensome substances

As we JTEKT aim to be an “environmentally friendly *monozukuri* company”, the reduction of environmentally burdensome substances throughout the entire product life cycle is one of our social responsibilities. It goes without saying that we will lower consumption and discharge amounts, in addition to assessing and controlling environmentally burdensome substances within products.

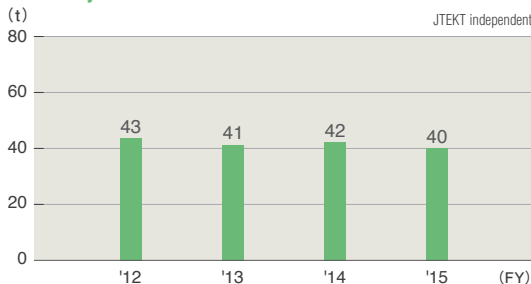
Control and reduction of chemical substances within production

Reduction of substances subject to PRTR

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. In FY 2015, we succeeded in reducing the amount of PRTR substances (*) released and transferred through promoting control of paint coating efficiency, etc.

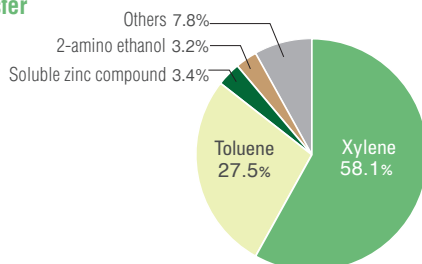
* PRTR A system to collect and disseminate information on environmental release and transfer of toxic chemicals reported to government agencies. PRTR is an abbreviation of “Pollutant Release and Transfer Register”.

Yearly transition release and transfer breakdown of substances subject to PRTR



* Past results have been partially revised after reconfirming release and transfer amounts.

Release and transfer breakdown of substances subject to PRTR for FY 2015



Proper storage and control of PCB devices

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. Here at JTEKT, we properly store such devices and notify government agencies in accordance with this act. In addition, with the exception of one that could not be treated due to breakage, all high-pressure condensers with highly concentrated PCB levels in storage were rendered harmless at PCB treatment facilities of JESCO (Japan Environmental Storage & Safety Corporation) by FY 2014. In FY 2016, JTEKT plans to treat the one condenser that was not operating, to complete its high-pressure condenser treatment. Moreover, in regards to ballasts, following Tokushima Plant in FY 2014, a total of 1,126 ballasts were rendered harmless at Kariya Plant, Okazaki Plant and Higashi-Kariya Plant in FY 2015.



PCB ballast treatment status (Kariya Plant)

Measures for devices with low PCB concentration

In addition to devices with highly concentrated PCB levels, JTEKT properly stores electrical devices that have been previously judged as not containing PCB, but in which minute amounts of PCB have been detected.

In FY 2015, Kokubu Plant and Kagawa Plant removed insulating oil from its low-concentration PCB devices and began treatment at facilities certified to perform treatment for rendering such devices harmless.



Kokubu Plant

Control and reduction of environmentally burdensome substances

Measures for soil and groundwater (continued report)

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 detergents and other materials. They do this using a pumping and aeration system (*1). In addition, since FY 2004, the Okazaki Plant has used a microbial purification system (*2) which injects nutritional supplements as part of their purification measures. JTEKT reports groundwater measurement results to government agencies and provides local residents with explanations in community meetings.

[→ S. 22 Related article](#)

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

***2 Microbial purification system** 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: 0.03 mg/ℓ

(mg/ℓ)

| Plants | Maximum measurement value in groundwater | | |
|---------|--|---------|-----------|
| | FY 2014 | FY 2015 | Status |
| Kariya | 0.996 | 0.939 | Purifying |
| Okazaki | 0.019 | 0.016 | Purifying |

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



My CSR

Nichaphat Jaipong
JTC(Thailand)

Control and reduction of environmentally burdensome substances

Soil is the foundation for a diversity of living creatures and the basis of plant operation. JTEKT believes soil monitoring to avoid burdening the soil environment and checking for pollution is very important when utilizing land for plant operations. Thailand has laws in place regarding environmental standards for soil used for purposes other than residential and agricultural. JTC implements measures to protect against soil contamination and continuously carries out periodic monitoring of toluene, benzene and lead levels in the soil within plant grounds.

Biodiversity conservation

Social background

The diversity of living creatures on this planet is rapidly depleting, for reasons such as habitat loss resulting from the spreading destruction of nature. Corporate activities are made possible thanks to the blessings of nature, but at the same time impact biodiversity greatly. This is why it is important that corporations are proactively involved in biodiversity conservation activities such as protecting the natural habitat.

JTEKT's concept

Initiatives leveraging regional characteristics

JTEKT believes biodiversity conservation to be a critical social issue supporting life and lifestyle. Based on the JTEKT Group Environment Vision, each plant promotes initiatives which leverage the regional characteristics of its location and broaden the scope of activities aimed at conservation of biodiversity.

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 be mindful of biodiversity, our company established a Biodiversity Conservation Action Guideline in March of 2011 based on the 2015 Environmental Action Plan of our JTEKT Group Environmental Vision. This guideline was established with reference to the Ministry of the Environment's Guidelines for Private Sector Engagement in Biodiversity. We will continue to investigate quantifiable evaluations relating to biodiversity conservation into the future.

Map of JTEKT biodiversity conservation activities

New!

▶ Figure-02

Due to operating plants across a broad area in both Japan and overseas, JTEKT endeavors to expand our biodiversity conservation initiatives through connecting the activities of individual plants. We will continue promoting activities to broaden such connection both domestically and internationally.

→ S_24-25 Related article

▶ Figure-01 Biodiversity Conservation Action Guideline

| 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 | <ul style="list-style-type: none"> ● 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 assess the impact our business activities have on biodiversity. |
| Product development | ● Based on life-cycle assessment approach, JTEKT develops and designs top-class environmentally friendly products and reduces impact on biodiversity. |

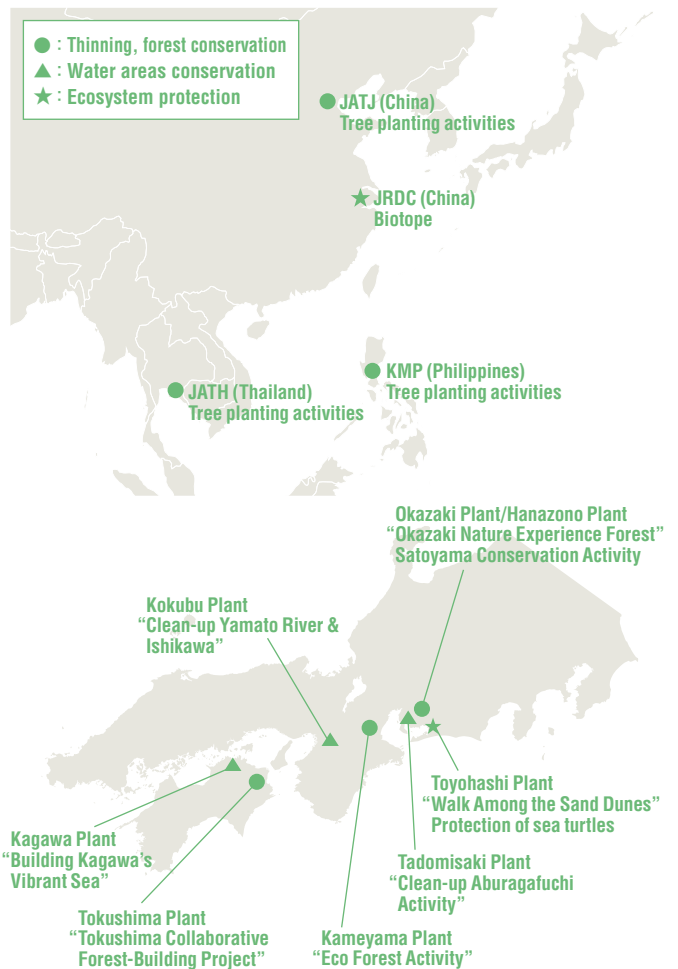
Promotion of social contribution activities benefiting biodiversity conservation

- Proactively participate in social contribution 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 with the community.

▶ Figure-02 Map of JTEKT biodiversity conservation activities



Biodiversity conservation

Vibrant Sea Conservation Activity (Kagawa Plant) ★ New!

From June 2015, Kagawa Plant has been participating in the “Building Kagawa’s Vibrant Sea” activity as a part of its initiative to conserve biodiversity. This project is run by Kagawa prefecture citizens and citizen groups with the aim of turning the Seto Inland Sea, which suffers from environmental issues, into an abundant sea which provides not only a water resource, but many forms of bounty, such as scenery, a haven, food culture, tourism and so on. JTEKT’s Kagawa Plant supported this activity’s philosophy, and participated in the Vibrant Sea Tour held in Sakaide on June 27th. The tour involved collecting sea lettuce which had become problematic in recent years due to contaminating the sea. Kagawa Plant will continue this activity in order to contribute to the restoration of the Seto Inland Sea and biodiversity conservation.



Vibrant Sea Conservation Activity (Kagawa Plant)

Tree planting activities (JATJ: China) ★ New!

JATJ has held tree-planting activities since 2012. It held its third such activity on Family Day in March 2016. 117 people, consisting of employees and their families, attended the event and planted one tree per household. Through this experience, participants gained a sense of fulfilment by contributing to the environment and enhanced their environmental awareness. The event was also an opportunity to teach children about the importance of protecting the environment. JATJ has planted 132 trees over approximately 2,000 m² to date through this activity. It will continue to hold this event and contribute to protecting the regional environment.



Tree planting activities (JATJ: China)

Appendix

Appendix-01 The scope of consolidated environmental management

Europe

- 12 production companies
- JTEKT AUTOMOTIVE UK LTD. (England)
- KOYO BEARINGS (EUROPE) LTD. (England)
- JTEKT TORSER EUROPE S.A. (Belgium)
- KOYO BEARINGS DEUTSCHLAND GMBH (Germany)
- JTEKT HPI S.A.S. (France)
- JTEKT AUTOMOTIVE LYON S.A.S. (France)
- JTEKT AUTOMOTIVE DIJON SAINT-ETIENNE S.A.S. (France)
- KOYO BEARINGS VIERZON MAROMME SAS (France)
- JTEKT AUTOMOTIVE CZECH PLZEN, S.R.O. (Czech Republic)
- JTEKT AUTOMOTIVE CZECH PARDUBICE, S.R.O. (Czech Republic)
- KOYO BEARINGS CESKA REPUBLIKA S.R.O. (Czech Republic)
- KOYO ROMANIA S.A. (Romania)

Asia / Oceania

- 8 production companies
- JTEKT (THAILAND) CO., LTD. (Thailand)
- JTEKT AUTOMOTIVE (THAILAND) CO., LTD. (Thailand)
- KOYO MANUFACTURING (PHILIPPINES) CORPORATION (Philippines)
- JTEKT AUTOMOTIVE (MALAYSIA) SDN. BHD. (Malaysia)
- JTEKT SONA AUTOMOTIVE INDIA LTD. (India)
- KOYO BEARINGS INDIA PVT.LTD (India)
- PT.JTEKT INDONESIA (Indonesia)
- KOYO JICO KOREA CO., LTD. (Korea)

China

- 10 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.
- KOYO NEEDLE BEARINGS (WUXI) CO., LTD.

Japan

- 13 JTEKT bases
- 19 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)
- Eiko Seimistu Co., Ltd. (Kagawa Prefecture)
- Tokio Seiko Corporation (Tokyo Prefecture)
- Yamato Seiko Co., Ltd. (Nara Prefecture)

North America / South America

- 8 production companies
- JTEKT AUTOMOTIVE TENNESSEE-VONORE LLC (U.S.A.)
- JTEKT AUTOMOTIVE TENNESSEE-MORRISTOWN, INC. (U.S.A.)
- JTEKT AUTOMOTIVE TEXAS, L.P. (U.S.A.)
- JTEKT AUTOMOTIVE SOUTH CAROLINA, INC. (U.S.A.)
- KOYO BEARINGS NORTH AMERICA LLC (U.S.A.)
- KOYO BEARINGS CANADA INC. (Canada)
- JTEKT AUTOMOTIVA BRASIL LTDA. (Brazil)
- JTEKT AUTOMOTIVE ARGENTINA S.A. (Argentina)

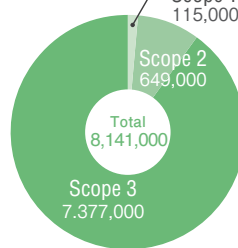
Appendix-02

CO2 conversion coefficients to calculate CO2 emissions volume

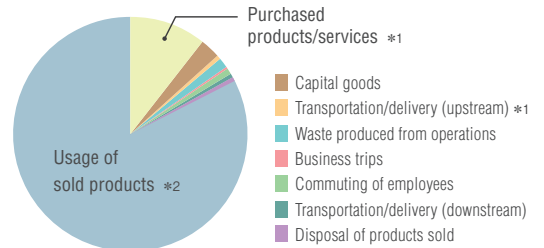
| | | |
|-------------|--------|------------------------|
| Electricity | 0.3707 | kg-CO2/kWh |
| Heavy oil A | 2.6958 | kg-CO2/l |
| Kerosene | 2.5316 | kg-CO2/l |
| Propane gas | 3.0040 | kg-CO2/kg |
| City gas | 2.1570 | kg-CO2/Nm ³ |

The CO2 conversion coefficients were set by the 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.

CO2 emissions by scope (t-CO2)



Scope 3 CO2 emissions (percentage) by category



Scope 3 CO2 emissions by category (FY 2015) *3

| Classification | Category | Emissions | Calculation method |
|----------------|--|--------------------------|--|
| Upstream | Purchased products/services *1 | 680,000 | Calculated based on the amount of steel purchased (price) multiplied by emissions per basic unit |
| | Capital goods | 186,000 | Calculated based on equipment investment amount related to capital goods multiplied by the cost per unit |
| | Fuel and energy-related activities not included in Scope 1 and 2 | — | N/A |
| | Transportation/delivery (upstream) *1 | 26,000 | Calculated as emissions due to purchasing/distribution of raw materials, parts, etc., based on the amount of steel purchased (price) multiplied by emissions per basic unit |
| | Waste produced from operations | 96,000 | Calculated based on amount of waste multiplied by emissions per basic unit |
| | Business trips | 20,000 | Calculated based on travel expenses multiplied by emissions per basic unit; estimated based on employee number for overseas group companies |
| | Commuting of employees | 50,000 | Calculated based on commuting expenses multiplied by emissions per basic unit; estimated based on employee number for overseas group companies |
| | Leased assets (upstream) | — | Leased assets calculated as Scope 1 and 2 emissions |
| Downstream | Transportation/delivery (downstream) | 30,000 | Calculated based on product transportation amount and distance multiplied by emissions per unit; calculated based on distribution expenses multiplied by emissions per unit for overseas group companies |
| | Fabrication of sold products | — | Due to the difficulty of calculating emissions due to the processing of products by customers using a reasonable method, this criteria has been excluded from the scope of calculation at this time |
| | Usage of sold products *2 | 6,258,000 | Calculated based on the amount of energy consumption for annual production volume for steering, driveline components, and machine tools (calculated based on a 10-year usage period) |
| | Disposal of sold products | 31,000 | Calculated by deriving the masses of each material used from the material content of all steering, driveline parts and machine tools manufactured annually then multiplying this amount by the emissions basic unit. |
| | Leased assets (downstream) | — | N/A |
| | Franchise | — | N/A |
| Investment | — | N/A | |
| Total | | 7,377,000 (t-CO2) | |

*1 Calculated based on the amount of steel purchased *2 Calculated based on steering, driveline components and machine tools
*3 Calculated using the basic unit of emissions of the guidelines established by the Ministry of the Environment and Ministry of Economy, Trade and Industry