

Realization of a Low-Carbon Society

Key Strategies and Targets under Eighth Environmental Management Activities Plan (FY2014–FY2016) and Fiscal 2016 Results

CO ₂ and energy cost reduction	
Targets ① Use the energy visualization system By fiscal 2016, have equipment and system in place to reduce annual CO ₂ emissions and energy consumption by at least 5% ② Reduce CO₂ emissions through product-based contributions Achieve cumulative values equal to or more than the initial plan values for each business segment, and disclose the reduction of CO ₂ emissions to public	Results Rate of energy cost reduction hit 6.6%, exceeding target. Rate of CO ₂ reduction hit 4.4%, falling below target Reduced emissions by 745,000t-CO ₂ , through delivery of high-efficiency products

Toward Realization of a Low-Carbon Society

We have set target values, emphasizing the following objectives, to achieve national targets for reduced CO₂ emissions.

- Cut greenhouse gases generated through production and logistics processes
- Cut greenhouse gases generated on a global scale through use of Kawasaki-brand products

1. Energy-Saving Promotion Activities

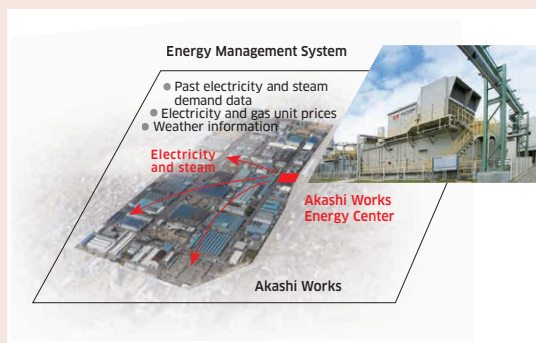
We use the energy visualization system, which has been introduced at all business sites, to promote energy-saving activities.

Energy costs were reduced by 6.6% (approximately ¥700 million) in fiscal 2016. We continue to work to reduce annual resource and energy costs by at least 5% in fiscal 2017 onward.

TOPICS:

Example of Energy Saving: Development and Installation of Energy Management System* at Akashi Works

In addition to external power, electricity and steam through gas turbine power generation systems, boilers, and other forms from the energy center are supplied to the plant at the Akashi Works. These energies are optimized through an energy management system that was developed in-house. Energy costs for electricity and gas were reduced in fiscal 2016 by 3% for the year for the entire plant.



*Energy Management System: Analyzes weather conditions, past electricity and steam demand data as well as electricity and gas unit prices, thereby optimizing the operations of energy equipment such as gas turbines and boilers.

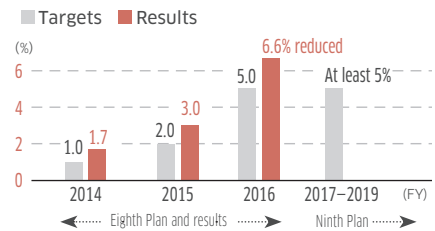


Figure 4: Energy Cost Reduction Targets and Reduction Amounts

2. Reducing CO₂ Emissions from Production Activities

Kawasaki set a goal to reduce CO₂ emissions from production activities by 5% and is pursuing activities to cut energy consumption.

In fiscal 2016, improvement activities at production sites and reduction in energy consumption using the energy visualization system were key factors in achieving a CO₂ reduction effect of 15,000 tons.

Kawasaki's CO₂ emissions reached 325,000 tons, mainly reflecting an increase in energy input due to expanded production of aircraft bodies at Nagoya Works 1 and construction of high-value-added ships at the Kobe Works. This did not result

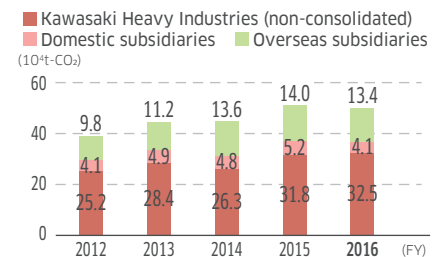


Figure 5: CO₂ Emissions from Production Activities

Note: For domestic sites, the CO₂ emission factors are based on figures published by Japan's Ministry of the Environment for each power provider in each fiscal year. For overseas sites, the CO₂ emission factors are based on figures published by the Greenhouse Gas Protocol.

in achieving the 5% reduction target, nevertheless, CO₂ emissions were reduced by 4.4%.

3. CO₂ Reduction through Product-Based Contributions

Kawasaki calculates CO₂ reduction of products in use in three categories—energy-related products, transportation-related products, and industrial equipment and other products—to determine the CO₂ reduction effect through product-based contributions, and discloses this information to the public.

An analysis of CO₂ emissions along the supply chain reveals that most of the CO₂ associated with Kawasaki-brand products is released during product use, so our goal is to contribute to lower CO₂ emissions through delivery of highly energy efficient products.

In fiscal 2016, CO₂ reduction through product-based contributions amounted to 745,000 tons, up 45% year on year, thanks to an increase in the number of high-efficiency power generation systems, hydraulic equipment and other systems delivered.

Table 1: CO₂ Reduction by Product Category

Category	Reduction Effect	Main Products	Reason for Reduction
Energy-related products	505,000t-CO ₂ /year	Gas turbine cogeneration system, cement waste heat power plant	High-efficiency power generation, waste heat utilization
Transportation-related products	214,000t-CO ₂ /year	Ships (improved propulsion performance), aircraft (lightweight body)	Better fuel economy
Industrial equipment, other products	26,000t-CO ₂ /year	Hydraulic equipment, robots, sewage aeration blowers	Greater energy savings

4. Estimating CO₂ Emissions in Supply Chain

The scope that Kawasaki is required to cover in tracking CO₂ emissions is expanding, characterized by an accelerating trend toward the inclusion of not only the Company's own operations but those of its supply chain as well. The standards for calculating emissions along our supply chain include Corporate Value Chain (Scope 3) Accounting and Reporting Standard, established by the Greenhouse Gas Protocol. In Japan, the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain—a Japanese version of Scope 3—were prepared by the Research/Study Committee on Standards for Accounting and Reporting Organization's GHG emissions throughout the Supply Chain, established jointly by the Ministry of Economy, Trade and Industry and the Ministry of the Environment, to look into methods for calculating greenhouse gas emissions along corporate supply chains. Using these basic guidelines, Kawasaki calculated CO₂ emissions along its supply chain, and presents the results below. According to this data, the GHG effect accompanying the use of Kawasaki-sold products over the whole supply chain is extremely high. We have been making progress in reducing CO₂ emissions through product-based contributions, but going forward, we will take an even more proactive approach.

Table 2: Fiscal 2016—the Kawasaki Group's Scope 1 and Scope 2 Calculation Results

Category	Calculation Targets	Calculation Results (10 ⁴ t-CO ₂ /year)
Scope 1		
Direct emissions	Direct emissions through use of fuel at Kawasaki and associated industrial processes	17.6
Scope 2		
Indirect emissions from energy-derived sources	Indirect emissions accompanying use of electricity and heat purchased by the Company	32.4

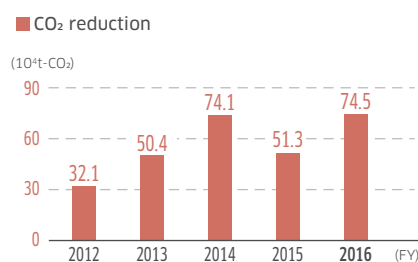


Figure 6: CO₂ Reduction through Product-Based Contributions

- Notes:
1. Kawasaki used CO₂ emissions factors provided in the list of calculation methods and emissions factors published by Japan's Ministry of the Environment.
 2. The CO₂ reduction effect achieved through higher efficiency of products is based on a comparison using standard, existing products.
 3. Application of waste heat and energy derived from waste materials is counted toward the CO₂ reduction effect.

Table 3: Fiscal 2016—Kawasaki's Scope 3 Calculation Results

Category	Calculation Targets	Calculation Results (10 ⁴ t-CO ₂ /year)
Scope 3 (Other indirect emissions) Upstream		
① Purchased goods and services	Emissions associated with activities up to production of raw materials, parts, purchased goods and sales-related materials	543.2 (10.0%)
② Capital goods	Emissions from construction and production of Kawasaki's capital goods	25.4 (0.5%)
③ Fuel- and energy-related activities not included under Scope 1 or Scope 2	Emissions associated with procurement of fuel purchased from other providers and procurement of fuel required to generate power, such as electricity and heat	3.6 (0.1%)
④ Transportation and distribution (upstream)	Emissions associated with logistics of raw materials, parts, purchased goods and sales-related materials up to delivery to Kawasaki	0.7 (0.0%)
⑤ Waste generated in operations	Emissions associated with transportation and processing of waste generated by Kawasaki	0.7 (0.0%)
⑥ Business travel	Emissions associated with business travel by employees	1.5 (0.0%)
⑦ Employee commuting	Emissions associated with transportation of employees between their homes and their worksites	0.6 (0.0%)
⑧ Leased assets (upstream)	Emissions associated with operation of assets leased by Kawasaki (excluded if included in Scope 1 or Scope 2 calculations)	Included in Scope 1 and Scope 2 calculations
Scope 3 (Other indirect emissions) Downstream		
⑨ Transportation and distribution (downstream)	Emissions associated with transportation, storage, cargo handling and retail sales of products	0.0 (0.0%)
⑩ Processing of sold products	Emissions associated with processing of intermediate products by companies	Excluded*
⑪ Use of sold products	Emissions associated with use of products by consumers and companies	4,839.0 (89.1%)
⑫ Disposal of sold products	Emissions associated with transportation and treatment of products upon disposal by consumers and companies	Excluded*
⑬ Leased assets (downstream)	Emissions associated with operation of assets leased to other companies	Excluded
⑭ Franchises	Emissions by franchisees	Excluded
⑮ Investments	Emissions related to operation of investments	17.6 (0.3%)

*Excluded from calculation target because the Company is unable to confirm reference data at this time.

5. Reduction of Greenhouse Gas Emissions in Logistics Processes

Kawasaki takes steps to pinpoint CO₂ emissions and promote energy-saving activities in its logistics processes, which cover some of the Company's supply chain, to realize continuous reduction in CO₂ emissions.

In fiscal 2016, CO₂ emissions dropped 9% year on year, to approximately 4,000 tons, thanks to enhanced efficiency of truck transport.

6. Utilizing Renewable Energy

In pursuit of CO₂ reduction, we have embraced renewable energy options, particularly solar power generating facilities. In fiscal 2016, we used about 1.7GWh of power from renewable energy sources.

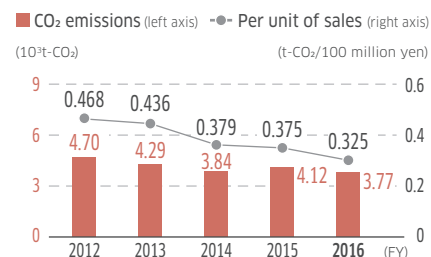


Figure 7: CO₂ Emissions from Logistics Processes and Per Unit of Sales

Notes: 1. Per unit of sales basis is a measurement obtained by dividing CO₂ emissions by net sales.
2. The CO₂ emissions factor is based on values published by Japan's Ministry of the Environment for each power provider in each fiscal year.

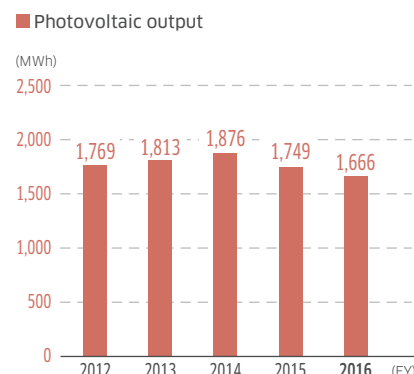


Figure 8: Electric Power Output from Photovoltaic Systems

Key Strategies and Targets under Ninth Environmental Management Activities Plan (FY2017–FY2019)

CO₂ and energy cost reduction

Targets

- ① **Reduce resource and energy costs, mainly through wider application of energy visualization system**
→ Cut annual resource and energy costs by at least 5%
- ② **Reduce CO₂ emissions**
→ Cut CO₂ emissions per unit of sales by at least 3% year on year
- ③ **Reduce CO₂ emissions through product-based contributions**
→ Identify CO₂ emission reduction effect through product-based contributions and disclose to public
- ④ **Carefully select investment projects**
→ Push internal rate of return above 8% through energy-saving facilities