

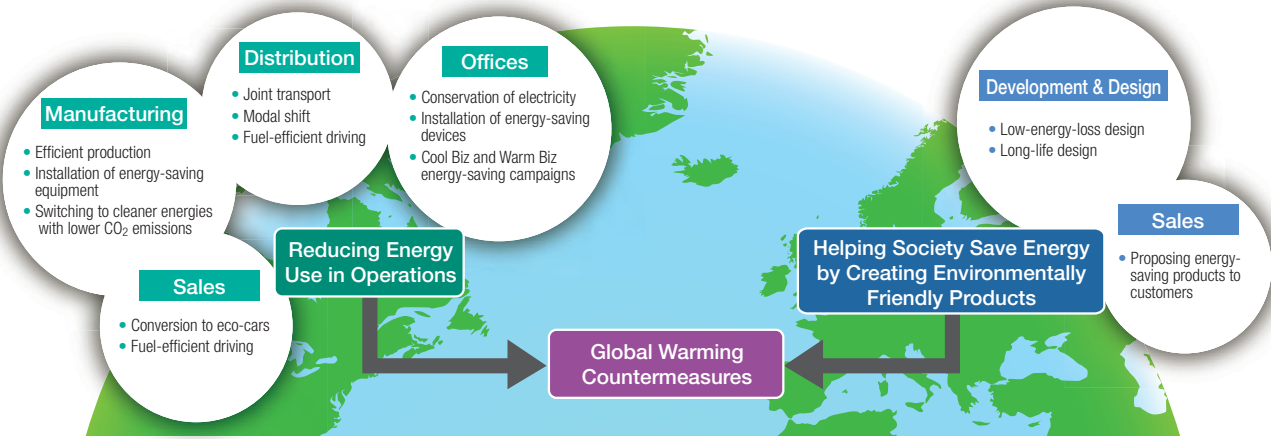
Global Warming Countermeasures

Concerns are mounting that today's increasingly serious climate change problems have the potential to cause tremendous damage including rising sea levels, droughts, localized torrential rain, and the spread of infectious diseases, as well as having harmful effects on ecosystems. At present, the world is debating how to achieve substantial reductions in emissions of CO₂ and other greenhouse gases. To help build a low-carbon society, companies are expected to make aggressive efforts to develop new and more advanced technologies that will lead to energy savings. They are also required to help popularize energy-saving products and reduce the CO₂ emissions generated by their business operations.

NSK's Approach

NSK is committed to developing and broadly disseminating environmentally friendly products, with the aim of reducing CO₂ emissions throughout society as a whole. The Group is also making efforts to reduce CO₂ emissions in its business operations through improvement in the efficiency of energy use and the adoption of clean energies.

- **Contributing to the Fight Against Global Warming by Creating Environmentally Friendly Products and Reducing Energy Use in Operations**



Mid-Term Targets (FY2016-2018)

The NSK Group is striving to reduce CO₂ emissions at its production sites through improvement of production efficiency, installation of energy-saving equipment, and conversion to clean energy. In addition, the Group is aiming to make effective use of energy and reduce CO₂ emissions by promoting the optimization of operations through the establishment of an information network for production equipment.

Under its Environmental Logistics Policy, the distribution departments strive to reduce the environmental impact of transport through improved loading efficiency, achieved by combining product distribution and procured part distribution and by shifting to modes of transport with lower environmental impact.

The head office and sales divisions have also made efforts to save energy, including controlling air-conditioning temperatures, turning off lights when not in use, and switching to LED lighting.

Fiscal 2018 Targets for Global Warming Countermeasures	
Manufacturing	
In Japan:	CO ₂ emissions per value-added production unit: 11.1% reduction from FY2011 level
	Total CO ₂ emissions: Reduce CO ₂ emissions for FY2018 to below FY2011 level
Outside Japan:	CO ₂ emissions per value-added production unit: 29.2% reduction from FY2011 level
Distribution	
In Japan:	CO ₂ emissions per ton-kilometer: 12.2% reduction from FY2011 level
Offices	
In Japan:	CO ₂ emissions per unit of floor space: 24.5% reduction from FY2011 level
Outside Japan:	CO ₂ emissions per unit of floor space: 6.9% reduction from FY2011 level

CO₂ emissions intensity:
 Manufacturing: CO₂ emissions/Value-added production
 Distribution: CO₂ emissions/Transportation amount*
 Offices: CO₂ emissions/Floor space

CO₂ emissions: The total of the amount emitted directly from the NSK Group's business operations (scope 1) and the amount emitted indirectly by power companies, etc., that supply the electricity used by the NSK Group (scope 2)

* The NSK Group changed the unit for transportation volume of logistics from ton-kilometers to tons in fiscal 2016 to better reflect the effects of measures such as reduction of transport distance and improvement of loading efficiency.

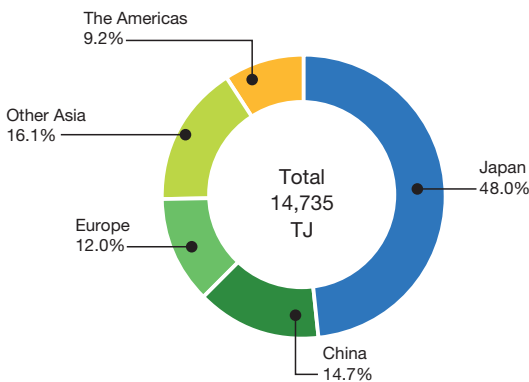
FY2015 Activities

Manufacturing departments in Japan surpassed the fiscal 2015 target of a 4% reduction in CO₂ emissions intensity from the fiscal 2011 level by recording an 8.4% reduction. This result slipped below the 10.2% reduction achieved the previous year due to lower production volume caused by economic slowdown. Total CO₂ emissions were down 4.6% from the fiscal 2011 level, achieving the reduction target of the fiscal 2011 level or below.

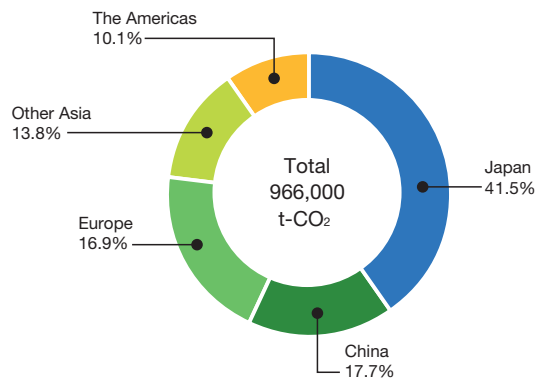
Partially due to a slowdown in production growth in some regions, plants outside Japan achieved a 27.0% reduction in CO₂ emissions intensity from the fiscal 2011 level, exceeding the target of a 4% reduction. The main drivers of these reductions, however, were improvements in productivity and the increase in operations that emit comparatively lower amounts of CO₂.

Headquarters and office sites also achieved their target, but distribution departments did not, due to a decrease in car ferry shipments.

● Energy Consumption from Manufacturing, by Region

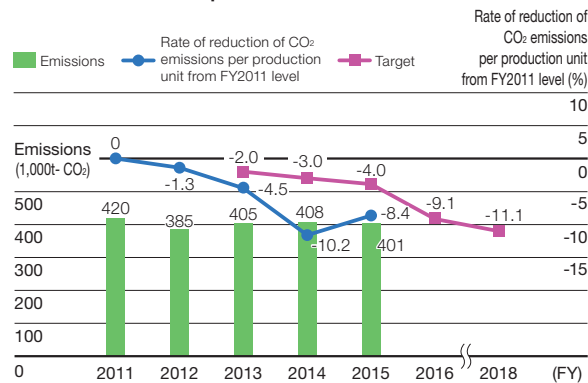


● Total CO₂ Emissions from Manufacturing by Region



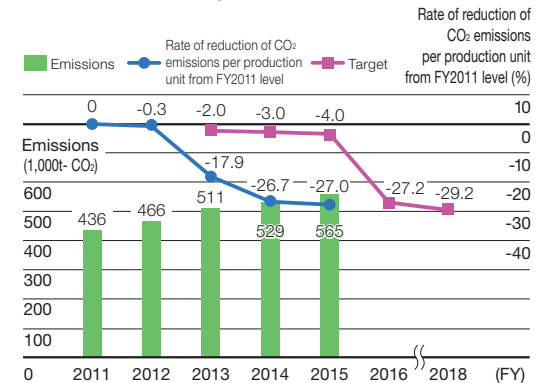
* Includes approximately 1,100 tons of greenhouse gases other than CO₂ (i.e., CH₄, N₂O, HFCs, PFCs, SF₆) converted to a CO₂ basis

● CO₂ Emissions from Manufacturing in Japan: Total Volume and per Production Unit



* Due to a change in calculation criteria, the data was recalculated.

● CO₂ Emissions from Manufacturing Outside Japan: Total Volume and per Production Unit



* Due to a change in calculation criteria, the data was recalculated.

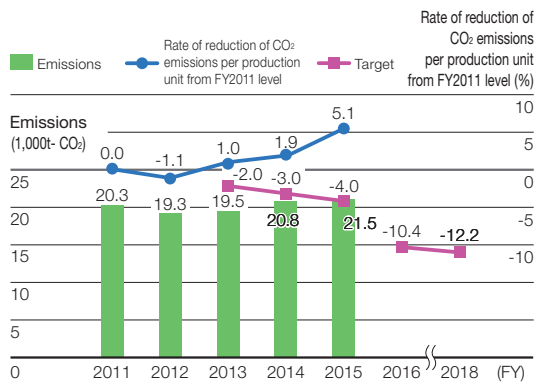
● Greenhouse Gas Emissions Verification Report (Japan)

The Japan Quality Assurance Organization conducted independent verification of NSK's fiscal 2015 performance, in order to increase reliability related to the group's CO₂ and other greenhouse gas emissions data. The verification covered all NSK Group sites in Japan, including manufacturing departments, technology departments, and head office and administrative divisions.



Greenhouse Gas Emissions Verification Report (Japan)

● Energy Consumed per Ton-Kilometer and CO₂ Emissions from Distribution in Japan



Manufacturing 1 Effective Use of Energy and CO₂ Emissions Reduction from Development of a Next-Generation Production Line

NSK's Fukushima Plant and Manufacturing Engineering Center developed a next-generation production line through fresh ideas. In addition to saving energy with each piece of equipment that makes up the line, it became possible to manufacture more products efficiently with less energy by reducing the down time when changing production items and increasing the yield per hour. In the future, this line will be established at a plant in Indonesia to expand low-CO₂ emissions manufacturing throughout the NSK Group.

Manufacturing 2 Improving Energy Efficiency in Heat Treatment Processes

The NSK Group uses a great deal of energy in heat treatment processes for parts, accounting for 25% of energy use for all manufacturing processes. The Heat Treatment Working Group, which is made up of personnel from technology departments and each plant, is expanding the conversion from the conventional method of heat treatment in metal furnaces using kerosene and gas, to induction heat treatment using electricity. Metal furnaces require much energy to maintain a high temperature throughout the inside of the furnace. With induction heat treatment, on the other hand, only the parts being treated are heated, and since energy is needed only when heating, energy efficiency can be increased. At present, the list of applicable parts is being expanded through a series of tests.

Manufacturing 3 Deploying Energy Saving Efforts with Spindles to Each Company

The NSK Group uses a great deal of compressed air for the spindles used in grinding processes. The compressors that make that compressed air account for 15% of the energy use in manufacturing processes. The Spindle Working Group, made up of personnel from technology development departments and plants, meets regularly to share information and implement initiatives across plants to reduce the amount of compressed air used.

In fiscal 2015, the Spindle Working Group's efforts included switching from oil-air lubrication to energy-efficient spindles that use grease lubrication, which require less compressed air.

Manufacturing 4 Adoption of Clean Energy at Production Sites in Japan

Aiming to reduce CO₂ emissions intensity, the NSK Group is installing energy-saving equipment and converting to clean energy at production sites in Japan.

Shinwa Seikou Co., Ltd., used to use kerosene in its facility heating system. It updated to a type of air conditioning that uses LPG, thereby reducing its CO₂ emissions by 195 tons per year. The Akagi Plant of NSK Steering Systems Co., Ltd., also switched the power source for heating from kerosene to electricity, reducing its CO₂ emissions by 405 tons per year.

NSK Kyushu Co., Ltd., also switched the power source for heating from kerosene to electricity, reducing its CO₂ emissions by 218 tons per year. It is also planning to completely phase out the use of kerosene in four years through the conversion to electricity. In the future, it will enhance the access to electricity in the plant, in order to expand the installation of highly energy-efficient electric heat pumps with the aim of reducing CO₂ emissions.

Manufacturing 5 Efforts to Introduce Renewable Energy

In fiscal 2015, NSK installed a 40-kW solar power generation system on the roof of its sales site in Hiroshima and began generating power. The Munderkingen Plant of Neuweg Fertigung GmbH in Germany produced 21,450 kWh of electricity through year-round operation of a solar power generation system it started running in fiscal 2014.

Manufacturing 6 Reducing Energy for Lighting

Since LED lighting used to be usable only in places that are not too hot, fluorescent lighting in NSK's plants could only be changed to LED in areas with a good environment. Recently, however, it has become possible to obtain types that can withstand high temperatures, types that can replace mercury lamps, and types for emergency exit lights. Accordingly, the NSK Group has accelerated the adoption of LED lighting.

In addition to being more efficient, the switch to long-life LED lighting has reduced the workload, leading to greater productivity, as the changing of bulbs was an everyday maintenance task at plants that use several thousand to tens of thousands of fluorescent lights.

Manufacturing 7 Initiatives at Production Sites Outside Japan

NSK Micro Precision (M) Sdn. Bhd. in Malaysia reduced its CO₂ emissions by 314 tons per year by switching to high-efficiency air compressors, repairing air leaks in equipment throughout the plant, and adopting LED lighting.

Kunshan NSK Co., Ltd., in China reduced its CO₂ emissions by 1,632 tons per year by replacing motors with high-efficiency models and switching to LED lighting.

The Chennai Plant of Rane NSK Steering Systems Ltd. reduced its CO₂ emissions by 18 tons per year per press machine by connecting power generators to the flywheel of press machines and recovering energy when the machines are stopping.



Press machine improvement
Chennai Plant, Rane NSK Steering Systems

Distribution Initiatives to Improve Transport Efficiency

Under its Environmental Logistics Policy, the NSK Group strives to reduce the environmental impact of transport (reduction of CO₂ emissions). It takes three approaches: improving loading efficiency by combining product distribution and procured part distribution; shortening distances by improving transportation routes; and shifting to modes of transport with lower impact.

In fiscal 2015, however, a decrease in transport by car ferry resulted in a 5.1% increase in CO₂ emissions per ton-kilometer from the fiscal 2011 level, and did not attain the target of a 4% reduction.

In fiscal 2016, the Group will expand initiatives to improve its transport efficiency rate by continuing to combine product and procured parts distribution throughout the NSK Group. Moreover, the Group is looking into rail transport in addition to marine transport to increase the effect of the modal shift.

Offices Energy-Saving Efforts at the Head Office and Sales Divisions

The head office and sales divisions have been making efforts to save energy, including controlling air-conditioning temperatures, turning off lights when not in use, and switching to LED lighting. The head office building is continuing to thoroughly control air-conditioning temperatures, but power consumption increased by 2% compared to the fiscal 2014 level due to an increase in overtime. However, with the integration of three sales offices, the reconstruction of the Hiroshima Nissei Building, and energy-saving activities, offices other than the head office achieved a 9% reduction, resulting in a reduction of around 5% overall. Moreover, NSK encourages offices to switch to the latest environmentally friendly vehicles when updating their fleets, and in fiscal 2015 around 60% of the Company's fleet was hybrid and vehicles with small-displacement engines.

Appendix P. 89 Change in Energy Consumption and CO₂ Emissions (by Region and Country, Production Sites)

Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

● Energy Consumption Data (by Site)