

Environmental Activity Report and Results

Recognizing the importance of protecting the environment, we will ensure effective and environmentally conscious utilization of limited natural resources in order to bestow a clean environment to the next generation. Through creation of new products and businesses that bring new value to society, we will base our sustainable growth on the provision of high quality products in harmony with the environment.

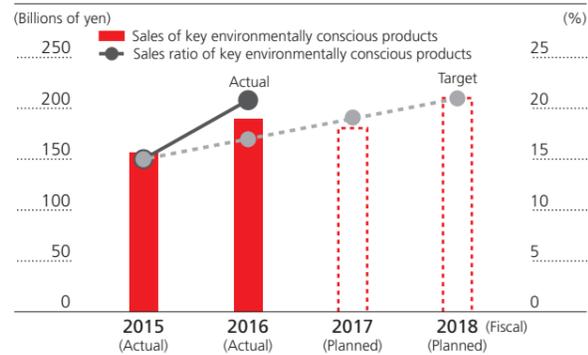
1 Key Environmentally Conscious Products

● **Increasing sales of key environmentally conscious products**
 “Key environmentally conscious products” are products targeted for growth based on management strategy. Those products contribute significantly to resolving environmental issues such as climate change and efficient use of resources.

In fiscal 2016, we succeeded in raising the actual sales ratio of key environmentally conscious products to 20.8%, well above the target ratio of 17%. This achievement is attributable to the expansion of applicable products along with sales growth.

We will continue to expand sales of these products in line with our management strategy, while seeking to contribute to the resolution of society's environmental issues.

Sales and Sales Ratio of Key Environmentally Conscious Products



● Main key environmentally conscious products

SLD-i™, a new type of cold-rolled die steel
 Specialty Steel Company

Realizes reduced heat treatment dimensional change, less aging, and improved abrasion resistance, compared to standard cold-rolled die steel (SKD11, etc.).

Previously: 8% Cr steel, SKD11 (SLD) | SLD-i

Base materials only (softer than carbides, easily abraded)



HERCUNITE™ heat-resistant cast components for engine and exhaust systems
 Functional Components Company

The high temperature resistance of these components helps increase engine fuel efficiency and clean emission.

NEOMAX® neodymium magnets for hybrid and electric vehicles
 Magnetic Materials Company

The world's best magnetic properties of these magnets help improve the fuel efficiency of hybrid and electric vehicles. We have developed magnets with higher heat resistance and magnetic force, while reducing the use of heavy rare earth elements (dysprosium, etc.).



POLYENEX™ series of wires and cables for rolling stock
 Cable Materials Company

Lightweight products that have been certified under the world's major international standards, including an EN standard, with superior flame resistance, low smoke emission, and low toxicity.

2 Waste Reduction and Resource Recycling Measures

● Process for using the carbothermal reduction method to recycle rare earth materials from sludge produced in the magnet manufacturing process

Recycling of sludge*¹ produced in the manufacture of neodymium magnets traditionally used large amounts of acid and alkali, and the residue was disposed of as industrial waste in landfills. We have developed a carbothermal reduction method*² that treats sludge as iron ore, thus setting up a resource recycling process that makes it possible to reuse not only the magnets' rare earth elements but also iron elements as pig iron*³, while also minimizing the use of acid and alkali.

Received the Rare Metal Recycling Award of the FY2016 Awards for Resources Recirculation Technologies and Systems



Slag (left) and pig iron (right) refined by the carbothermal reduction method

*1 Sludge: Magnet processing involves pouring water (grinding fluid) over the magnets, resulting in sludge that is a mixture of processing scraps and water.
 *2 Carbothermal reduction method: A method in which sludge, treated as iron ore, is heated along with carbon, allowing rare earth elements to be recovered as slag (material that rises to the surface of sludge).
 *3 Pig iron: Iron that is extracted from iron ore reduced in a blast furnace or electric furnace.

3 Consideration for the Preservation of Ecosystems

The Hitachi Metals Group promotes ecosystem preservation measures that include tree planting and forest conservation activities, cleanup activities in areas surrounding factories, and environmental education.

1. Examples of major tree planting and forest conservation activities

Tohoku Rubber Co., Ltd., Kitanihon Sales Office of Hitachi Metals, Ltd., and Hitachi Metals Trading, Ltd. planted trees in the 2016 Millennium Hope Hills Tree Planting Festival, organized by the city of Iwanuma, Miyagi Prefecture, which was affected by the Great East Japan Earthquake.



Participated in the Millennium Hope Hills Tree Planting Festival
 Trees for disaster prevention were planted in an area hit by the tsunami in the Great East Japan Earthquake as a measure to weaken the effects of tsunamis and secure evacuation sites. (Tohoku Rubber Co., Ltd., Kitanihon Sales Office, Hitachi Metals Trading, Ltd.)

2. Ecosystem preservation activities

As an initiative to protect the ecosystem of Kasumigaura, SH Copper Products Co., Ltd. planted floating heart, a water plant, to help restore the habitat of small fish. Waupaca Foundry, Inc. created an ecopark and carried out tree planting activities. We will continue making efforts to protect the ecosystems in surrounding areas.



Participated in activities to protect the ecosystem of Kasumigaura (SH Copper Products Co., Ltd.)



Carried out ecopark (ecosystem preservation) activities (Waupaca Foundry, Inc.)

The Hitachi Group's Environmental Vision

The Hitachi Metals Group promotes a Low-Carbon Society, Resource Efficient Society, and Harmonized Society with Nature as the three key pillars of the Hitachi Group's Environmental Vision. We aim to realize both higher quality lifestyles and a sustainable society by resolving environmental issues through the social innovation business in collaboration with our stakeholders. In addition, we will fulfill our required role to achieve Hitachi's long-term environmental targets called Hitachi Environmental Innovation 2050.

URL for Hitachi Environmental Vision and Environmental Innovation 2050
<http://www.hitachi.com/environment/vision/index.html>



Prevention of Global Warming

In fiscal 2016, CO₂ emissions from the Hitachi Metals Group's business activities decreased by 98 thousand tons year on year, to 2,633 thousand tons.* Meanwhile, net sales CO₂ emissions per unit increased 7.7%. The primary reason for the increase was that the impact from a 10.5% decrease in net sales became greater.

The Hitachi Metals Group carries out energy-saving activities coordinated with its *monozukuri* to reduce CO₂ emissions. Specifically, these activities include omitting excess processes, improving efficiency, obtaining higher yield rates, and introducing energy-saving equipment.

*Electricity accounts for 62% of the Hitachi Metals Group's CO₂ emissions, followed by coke and town gas, respectively. In Japan, the power company CO₂ emissions coefficient is based on the "power supplier emissions coefficient" announced by the Ministry of the Environment; outside Japan, it is based on the 2008 IEA "country-specific conversion coefficient."

Trends in CO₂ Emissions and CO₂ Emissions Per Unit

