

# Environmental Activity Report and Results

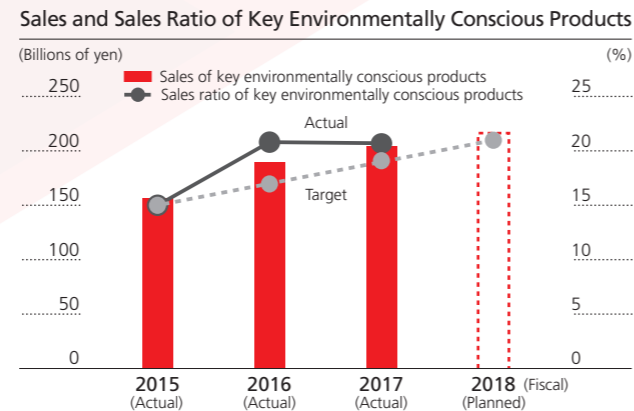
Recognizing the importance of protecting the environment, we will ensure effective and environmentally conscious utilization of limited natural resources in order to bestow a clean environment to the next generation. Through creation of new products and businesses that bring new value to society, we 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 2017, we succeeded in raising the actual sales ratio of key environmentally conscious products to 20.7%, well above the target ratio of 19%. 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.



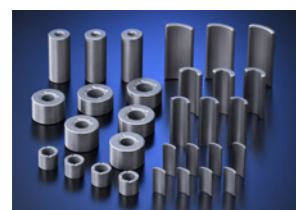
● **Introducing new products contributing to reduced environmental loads**



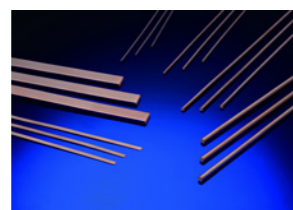
**HINEX™ series of long-life High-Speed Steel (HSS) rolls**  
 Specialty Steel Company  
 HINEX™ is an HSS roll made using a new production method, which displays superior resistance to abrasion and roughness. In addition, a roll designed to prevent damage during rolling has been developed and is currently being marketed.



**High strength lightweight ductile cast iron OMEGA KNUCKLE®**  
 Functional Components Company  
 OMEGA KNUCKLE® maintains strength and rigidity while realizing a light weight (17% lighter than our previous product) through a thin-walled, semi-hollow cross-sectional structure.



**High-performance ferrite magnets (NMF™ -12J, 12K, 15G, 15J)**  
 Magnetic Materials Company  
 Began mass production of the NMF™-15 series, featuring ferrite magnets with the world's best magnetic properties, as well as products with high coercive force (NMF™ -12J, 12K) for EVs, etc.



**HiFC™ high-performance pure copper Cable Materials**  
 Cable Materials Company  
 This material gets softer at low temperatures than oxygen-free copper, and machining strain can be removed with less annealing energy. Excellent electrical conductivity helps make devices more efficient and conserve energy (received the 21st Century Invention Prize of the FY2014 National Invention Awards)

## 2 Waste Reduction and Resource Recycling Measures

● **Reducing landfill waste and promoting recycling through sand recycling**

The United States-based Waupaca Foundry, Inc. (WFI) produces gray cast iron and ductile cast iron castings. In fiscal 2016, WFI introduced a sand recycling system at Plant 5, and in fiscal 2017 became capable of recycling 30% of foundry sand used in production. As a result, WFI as a whole reduced its waste generation by 23,000 tons from the previous fiscal year, contributing to a 33,000-ton reduction in final landfill waste. WFI improved its waste generation by approximately 12% in terms of dissolved weight per production unit, and by 3.8% in terms of recycling rate. Plant 5 is planning to promote the expanded use of recycled sand. One of its targets is to use 75% recycled sand in its core sand, which is equivalent to 55,000 tons of recycled foundry sand per year.

WFI will continue to promote the sustainable use of resources, such as reducing waste generation and final landfill waste, recycling and reusing foundry sand, and making effective use of slag.



Sand recycling system adopted by Plant 5

## 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

HMJ, Ltd. participated in the "Harmony Forest" corporate participation forestation program in Shimane Prefecture, planting 460 sawtooth oak trees to reduce CO<sub>2</sub>.



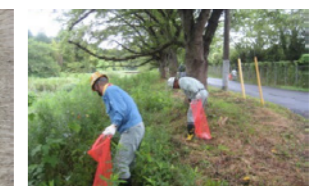
Participation in Harmony Forest activities  
 Activities to reduce CO<sub>2</sub> in the corporate participation forestation program in Shimane Prefecture (HMJ, Ltd.)

### 2. Ecosystem preservation activities

Hitachi Ferrite Electronics, Ltd. participated in group cleanup activities by removing trash at the Tottori Sand Dunes to protect the ecosystem of the Sea of Japan. In addition, Ibaraki Works of Hitachi Metals, Ltd. carried out cleanup activities along the Juo River, together with community residents. We will continue to work to protect the ecosystems in our local communities.



Participation in group cleanup activities at the Tottori Sand Dunes (Hitachi Ferrite Electronics, Ltd.)



Cleanup activities along the Juo River (Ibaraki Works, Hitachi Metals, Ltd.)

## 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 2017, CO<sub>2</sub> emissions from the Hitachi Metals Group's business activities increased by 105 thousand tons year on year, to 2,778 thousand tons.\* Meanwhile, net sales CO<sub>2</sub> emissions per unit improved by 4.2%.

The Hitachi Metals Group carries out energy-saving activities coordinated with its *monozukuri* to reduce CO<sub>2</sub> 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 CO<sub>2</sub> emissions, followed by coke and town gas, respectively. In Japan, the power company CO<sub>2</sub> emissions coefficient is based on the "power supplier emissions coefficient" announced by the Ministry of the Environment; outside Japan, it is based on the 2010 IEA "country-specific conversion coefficient."

## Trends in CO<sub>2</sub> Emissions and CO<sub>2</sub> Emissions Per Unit

