

Magnetic Materials Company

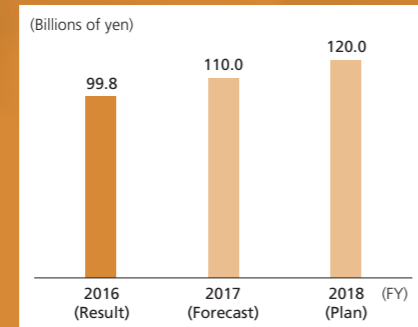
Basic policy of medium-term management plan

Innovate *monozukuri* system to pave the way for growth

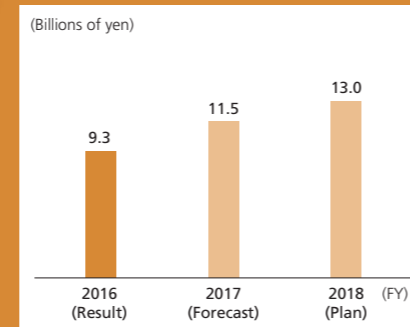
- Strengthen global production system
- Build innovative production lines

Progress vis-à-vis numerical targets

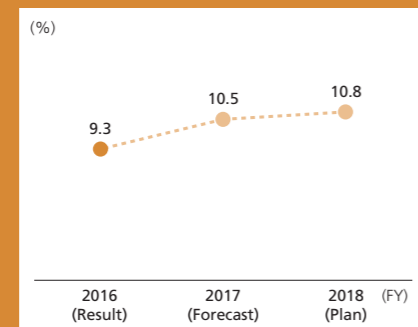
Revenues



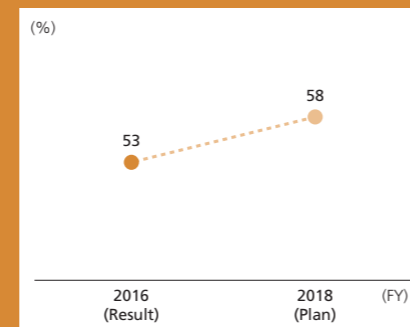
Adjusted operating income



Adjusted operating margin



Overseas sales ratio



Ryouji Akada
President of the Magnetic Materials Company

Investment plans

Investment amount: **¥48.0 billion** (cumulative total for FY2016–FY2018)

Strengthen global production system

- Enhance production capacity
- Integrate plant and research lab
- Introduce innovative production lines
- Optimize material flow

Progress of medium-term plan

Progress

In light of increasing environmental awareness, characterized by tightening regulations for CO₂ emissions and fuel efficiency in various nations and regions, we expect the production volume of xEV to expand dramatically in China and other countries around the world.

To address such demand, we established Hitachi Metals San Huan Magnetic Materials (Nantong) Co., Ltd., which commenced operations in April 2017. At the Kumagaya Works, meanwhile, we started construction of an innovative production line for neodymium magnets and ferrite magnets.

Future priorities

At our new innovative production line, we will deploy new production and IoT technologies to realize high production efficiency. At the same time, we will relocate the Magnetic Materials Research Laboratory from the Yamazaki district (Mishima-gun, Osaka) to the Kumagaya district, thus unifying our innovative production line and plant to expedite development of technologies that reflect customer needs.

Through these measures, we will position the Kumagaya Works as a "mother plant" in which the neodymium magnet business and the ferrite magnet business are centrally controlled.

The information system component business of the Magnetic Materials Company will also be centralized within the Kumagaya Works. By consolidating our production bases, we will innovate our *monozukuri* system and speed up development of new manufacturing technologies for our production facilities, including those overseas, and thus expand business.

In technology development, we will increase technology to limit use of heavy rare earth elements for neodymium magnets in an effort to significantly reduce use of heavy rare earth elements. In ferrite magnets, we will develop new compositions and deploy microstructure control technologies and grinding technology for thin products to achieve advances in performance and downsizing.

In addition, we will aggressively invest in magnet alloy manufacturing processes and recycling processes, with the aim of optimizing material flow.

Carry out *monozukuri* innovations: Innovative production lines

Improve quality and maximize productivity through thorough automation and use of IoT

Construct a new, innovative production line for neodymium magnets and ferrite magnets in the Kumagaya district

Respond to demand of the continuously growing automotive-related market with "quality and quantity"



Image of completed plant

Neodymium magnet plant (Started construction in Apr. 2017)

Adopt a new method in the heavy rare earth diffusion process

Ferrite magnet plant (Started construction in Feb. 2017)

Enhance production lines to address small and thin shapes

Expand China business

Create competitive products with the same quality as those made in Japan

Hitachi Metals San Huan Magnetic Materials (Nantong) Co., Ltd.

Location: Nantong, Jiangsu Province, China
Inv. ratio: Hitachi Metals: 51% Zhong Ke San Huan: 49%
Production capacity: 1,000 tons/year (FY2017) ⇒ 2,000 tons/year
Sales goal: ¥10.0 billion (FY2018)

Introduce proprietary heavy rare earth diffusion technology



Exterior of plant Opening ceremony Launch ceremony

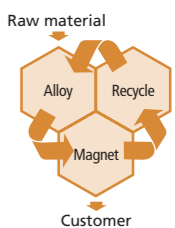
Optimize material flow

Conduct unified operation management of manufacturing and recycling process of magnet alloys

Improve efficiency with consistent process design for magnets

Achieve a smooth flow of effectively utilizing recycled materials

Improve quality management through all processes



Aggressive investment in the magnet alloy manufacturing process and recycling process