Business Strategy of the Advanced Components & Materials Division
Hitachi Metals IR Day 2019

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Vice President and Executive Officer
General Manager, Advanced Components & Materials Division
Hitachi Metals, Ltd.
Business Strategy of the Advanced Components & Materials Division

[Table of Contents]

1. Business Overview of the Advanced Components & Materials Division
2. Basic Policy of the FY2021 Medium-term Management Plan
3. Action Plan
4. Summary
1-1. Advanced Components & Materials Division Business Overview (1)

Before organizational restructuring

**Magnetic Materials Company**
- Rare Earth Magnets
- Ferrite Magnets
- Ceramic Components

**Specialty Steel Company**
- Soft Magnetic Components and Materials
- Specialty Steel
- Rolls

**Cable Materials Company**
- Electric Wires and Cables
- High Performance Components

After organizational restructuring

**Advanced Components & Materials Division**

**Magnetic Materials / Power Electronics Materials Segment**
- Magnetic Materials Business Unit
- Power Electronics Materials Business Unit

**Wires, Cables, and Related Products Segment**
- Electric Wire and Cable Business Unit
- Automotive Components Business Unit
Advanced Components & Materials Division

Business Overview (2)

Wires, Cables, and Related Products
- Electric Wire and Cable Business Unit
  - Electric Wires and Cables for Rolling Stock
  - Electric Wires and Cables for FA/RoBots
- Automotive Components Business Unit
  - Electronic Components
  - Brake Hoses

Magnetic Materials / Power Electronics Materials
- Magnetic Materials Business Unit
  - Neodymium Magnets
- Ferrite Magnets
- Power Electronics Materials Business Unit
  - Soft Magnetic Components and Materials
  - Ceramic Components
1-3. FY2018 Medium-term Management Plan
Overview of Efforts

<table>
<thead>
<tr>
<th>Organic growth (from capital investment &amp; R&amp;D)</th>
<th>Magnetic Materials / Power Electronics Materials Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduced innovative production lines for magnetic materials (Total investment amount: approx. ¥18.0 billion)</td>
<td></td>
</tr>
<tr>
<td>Established Hitachi Metals San Huan Magnetic Materials (Nantong) Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Increased the production capacity of FINEMET® nanocrystalline magnetic materials</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuous portfolio remodeling</th>
<th>Wires, Cables, and Related Products Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferred the information system business</td>
<td></td>
</tr>
<tr>
<td>Sold the lead frame business</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth through M&amp;A</th>
<th>Magnetic Materials / Power Electronics Materials Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquired Santoku Corporation</td>
<td></td>
</tr>
<tr>
<td>Made the U.S. medical-related HTP-Meds a subsidiary and started the operation of new mass-production works</td>
<td></td>
</tr>
</tbody>
</table>

Reaping the benefits of large-scale capital investments is a challenge.
Business Strategy of the Advanced Components & Materials Division

[Table of Contents]
1. Business Overview of the Advanced Components & Materials Division
2. Basic Policy of the FY2021 Medium-term Management Plan
3. Action Plan
4. Summary
2-1. Basic Policy of the Medium-term Management Plan

**Basic Policy of the Advanced Components & Materials Division**

Expand the growth areas by “reaping the benefits of investments, concentrating resources and creating synergy”

**FY2021 Targets**

<table>
<thead>
<tr>
<th></th>
<th>¥ billions</th>
<th>FY2018 Actual</th>
<th>FY2019 Forecast</th>
<th>FY2021 Targets</th>
<th>vs. FY2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>US$1 = ¥111</td>
<td></td>
<td>US$1 = ¥105</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>€1 = ¥128</td>
<td></td>
<td>1 yuan = ¥16.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnetic Materials /</td>
<td>Revenues</td>
<td>137.0</td>
<td>140.0</td>
<td>175.0</td>
<td>+28%</td>
</tr>
<tr>
<td>Power Electronics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Adjusted operating income*2</td>
<td>[2.9%]</td>
<td>4.0</td>
<td>[4.3%]</td>
<td>6.0</td>
</tr>
<tr>
<td>Wires, Cables, and</td>
<td>Revenues</td>
<td>240.1</td>
<td>230.0</td>
<td>245.0</td>
<td>+2%</td>
</tr>
<tr>
<td>Related Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adjusted operating income</td>
<td>[5.2%]</td>
<td>12.5</td>
<td>[4.8%]</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td>ROIC</td>
<td>8.2%</td>
<td>6.1%</td>
<td>11.3%</td>
<td>+3.1%</td>
</tr>
<tr>
<td>Total*1</td>
<td>Revenues</td>
<td>377.1</td>
<td>370.0</td>
<td>420.0</td>
<td>+11%</td>
</tr>
<tr>
<td></td>
<td>Adjusted operating income</td>
<td>[4.4%]</td>
<td>16.5</td>
<td>[4.6%]</td>
<td>17.0</td>
</tr>
<tr>
<td></td>
<td>ROIC</td>
<td>5.5%</td>
<td>3.9%</td>
<td>9.3%</td>
<td>+3.8%</td>
</tr>
</tbody>
</table>

*1 Simple sum before eliminating intersegment revenues  
*2 Adjusted operating income = Revenues – Sales cost – Selling, general & administrative expenses  
*3 ROIC by segment = IFRS operating income *(1 – Tax rate of 30%) / (Average of beginning- and end-year working capital + Average of beginning- and end-year fixed assets)
2-2. Megatrends and Growth Areas

**Megatrends**

**Urbanization**
- Intercity movement of people and goods becomes active.
- High interest in safety and security

**Falling birthrate and aging population**
- Decrease in workforce, and robotization / automation
- Low-cost and human body-friendly medical treatments

**Increasing environmental issues**
- Energy saving (growth of EV use and expansion of railway system)
- Acceleration of the wide-spread use of new energy

**Technological evolution**
- Growth of IoT and big data
- Evolution of sensing technology and connected society

**Growth Areas**

**Automobiles**
- Power Electronics
- Electric Wires & Cables
- Magnets

**FA/Robots**
- Magnets
- Electric Wires & Cables

**Medical Devices**
- Electric Wires & Cables
- Power Electronics

**Rolling Stock**
- Electric Wires & Cables
- Power Electronics
Business Strategy of the Advanced Components & Materials Division

[Table of Contents]

1. Business Overview of the Advanced Components & Materials Division
2. Basic Policy of the FY2021 Medium-term Management Plan
3. Action Plan
4. Summary
Seek Synergy between Magnetic Materials, Power Electronics Materials, and Wires, Cables, and Related Products

Deeply cultivate the automotive and industrial infrastructure markets with the design technology for advanced components and materials at the core

- Magnet wires
- Feed Assy*
- Amorphous metals
- Magnets

* Wiring parts for EV motors
3-2. Automotive Area (2)

Advanced Components & Materials Contributing to Fast-growing Electrification and xEVs*1

- **FINEMET®**
- **SiN substrate**
- **SiC substrate**
- **Magnets**
- **Magnet wires**

**Inverter**
- **FINEMET®**
- **SiN substrate**
- **SiC substrate**
- **Magnets**
- **Magnet wires**

**Suspension**
- **FINEMET®**
- **Soft Ferrite**
- **Amorphous powder**
- **Harness for EPB**

**On-board Charger**
- **FINEMET®**
- **Soft Ferrite**
- **Amorphous powder**

**Motor**
- **Magnets**
- **Magnet wires**
- **Feed Assy**
- **Amorphous metals**
- **Power harness**

**EPS**
- **Magnets**
- **Torque sensor**

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*1: xEV refers to Electric Vehicle (EV), Hybrid Electric Vehicle (HEV), and Plug-in Hybrid Electric Vehicle (PHEV).

*2: Electric Power Steering  
*3: Electrical Parking Brake
3-3. Automotive Area: Power Electronics Materials (1)

- **Expand the soft magnetic components and materials business**

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINEMET® Ribbon</td>
<td>• Start the operation of new line of Metglas Yasugi Works (Four times capacity of the existing line)</td>
</tr>
<tr>
<td>FINEMET® Applied Product</td>
<td>• Increase the production capacity at production sites in Thailand</td>
</tr>
<tr>
<td>Soft Ferrite</td>
<td>• Launch production at production site in Philippines (Start mass production in Jan 2020)</td>
</tr>
</tbody>
</table>

**FY2021 Sales Target for Soft Magnetic Components and Materials: 1.4 times (vs. FY2018)**
Expand the Ceramic Components business

**SiN substrate**
- Start the mass production of high thermal conductive components (130 W/m-K) (2Q FY2019)
- Increase production capacity in Japan

**SiC substrate**
- Expand the SiC substrate business by deepening abrasive technology

**Inverter**

**Power module**

**SiN (silicon nitride) substrate**

Insulating substrate equipped with both high thermal conductivity and mechanical strength

Contribute to downsizing and cost reduction of water-cooling machine

**FY2021 Sales Target for Ceramic Components:**
2.2 times (vs. FY2018)
Enhance new product development

Amorphous Motor

Develop motor core using low iron-loss amorphous metals

News Release October 24, 2018

Target the motor core components market for growing xEVs.

On-board Charger (OBC)

Develop high-efficient OBC using our soft magnetic components and materials, jointly with Fraunhofer IISB

News Release April 16, 2019

Expand the business of soft magnetic components and materials for OBC
3-6. Automotive Area: Automotive Electronics Components

Strengthen the global production system

- Increase the production capacity of harnesses for EPB at the production sites in Thailand and Vietnam (start operation in 2020)
- Expand the Feed Assy business at the production sites in Japan and China
- Accelerate the development of new sensors

Automotive Electronic Components

Increase the production capacity of harnesses for EPB
Vietnam: Cable
Thailand: Harness

FY2025 Sales Target for Automotive Electronic Components:
1.7 times (vs. FY2018)
3-7-1. Automotive Area: Magnet Wires and Magnetic Materials

- Promote the adoption of HiFC™
- Start the mass production of new high-speed lines at the production sites in Japan and Thailand.
- Expand the sales of differentiated products (high PDIV* wires and surge-resistant wires)

*PDIV: Partial Discharge Inception Voltage

- Promote the certification of new lines
- Expand the lineup of less-heavy rare-earth magnets

- Integrated the control of raw materials process
  - Established an integrated production system by making Santoku a subsidiary

- Limited the use of heavy rare-earth
  - Expanded the lineup of less-heavy rare earth magnets (Incorporated in automotive, industrial and home electric areas)

- Increased the production capacity
  - Invested in new lines in the Kumagaya region
    - Neodymium magnets (Started operation in Apr 2018)
    - Ferrite magnets (Started operation in Feb 2018)

- Produced 100% of magnet alloys in-house
- Reduced the resource risk
- Production capacity: 1.3 times

Initial target for capacity utilization was not reached and profitability decreased.
3-7-3. Magnetic Materials Business: Key Measures (FY2021 Medium-term Management Plan)

- Improve the profitability of the Magnetic Materials Business

Increase the production capacity of new line

- Improve the capacity utilization
- Realize a structure with a smaller number of personnel

Optimize the global production system

- Improve profitability and expand new orders by enhancing cost competitiveness at overseas sites.

- Neodymium magnets
  - Start full-scale mass production (Apr 2019)
  - Pacific Metals Co., Ltd.
    - Kumagaya Works
  - Hitachi Metals San Huan Magnetic Materials (Nantong) Co., Ltd.
    - San Technology, Inc.
  - PT. HITACHI METALS INDONESIA

- Ferrite magnets
  - Further expand sales in the Asian market

FY2021 Adjusted Operating Margin for Magnetic Materials: 10%
3-8. FA/Robots Area

- Increase market share through differentiation
  - Increase market share through technology featuring thinner and lighter design and longer-life performance
  - Agile investment decision-making responding to market changes (Japan, China, and Vietnam)

FY2021 Sales Target for Electric Wires and Cables for FA/Robots: ¥10.0 billion
### Develop and Expand the Sales of New Products

**[Power Electronics Materials]**
- Develop and expand the share of scintillator material that supports higher-performance CT scanner

**[Wires, Cables, and Related Products]**
- Expand the sales of combination product of catheter and cable
- Mass production and machine automation of new probe cable products

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**FY2021 Sales Target for the Medical Area: 1.3 times**
(vs. FY2018)
3-10. Rolling Stock Area

- Expand market share in the growing Chinese high-speed railway market.

- Expand sales in the European market by suggesting a solution through cable navigation.

FY2021 Sales Target for the Rolling Stock Area: ¥14.0 billion
3-11. Investment Plan

**Concentrate investment in the growth areas**

| Power Electronics Materials | - Enhance the global production system for soft magnetic components and materials  
<table>
<thead>
<tr>
<th></th>
<th>- Increase the production capacity of ceramic products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive Components</td>
<td>- Increase the production capacity of harnesses for EPB at the production sites in Thailand and Vietnam</td>
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**Capital Expenditure for FY2019 to FY2021: ¥69.0 billion**  
(76% vs. the previous Medium-term Management Plan)
Business Strategy of the Advanced Components & Materials Division

[Table of Contents]
1. Business Overview of the Advanced Components & Materials Division
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3. Action Plan
4. Summary
4-1. Expand the Growth Areas

Restructuring a profitable portfolio by accomplishing “Only 1, No.1”

<table>
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<tr>
<th>Growth Areas</th>
<th>FY2018 Actual</th>
<th>FY2021 Targets</th>
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<tr>
<td>Revenues [AOP ratio]</td>
<td>¥377.1 billion [4.4%]</td>
<td>¥420.0 billion [9.8%]</td>
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</table>

- **Electric wires and cables for construction**
- **Brake hoses**

**Core Areas**

- **Automotive electronic components**
  - Neodymium magnets and ferrite magnets
  - Soft magnetic components and materials, SiC substrate, and SiN substrate
  - Magnet wires and electronic components

- **FA**
  - Neodymium magnets
  - Electric wires and cables for FA/Robots

- **Medical devices**
  - Medical wires and tubes
  - Scintillator materials

- **Rolling stock**
  - Electric wires and cables for rolling stock
  - Soft magnetic components and materials, SiC substrates, and SiN substrates
4-2. Summary

Basic Policy of the Advanced Components & Materials Division

Expand the growth areas by “reaping the benefits of investments, concentrating resources, and creating synergy”

FY2021 Targets for Advanced Components & Materials Division

- Revenues: ¥420.0 billion
- Adjusted Operating income: ¥41.0 billion (9.8%)
- ROIC: 9.3%
Information on Risks Inherent in Future Projections

This document contains forward-looking statements, such as results forecasts, management plans and dividend forecasts, that are not historical facts. All such forward-looking statements are based upon all available information and upon assumptions and projections that were deemed reasonable at the time the Company prepared this document. Changes to the underlying assumptions or circumstances could cause the actual results to differ substantially. The factors causing such differences include, but are not limited to, the following:

- Risks associated with market conditions related to product demand
- Risks associated with changes in raw material prices
- Risks associated with financing activities
- Risks associated with changes in foreign exchange rates
- Risks associated with changes in the value of securities
- Risks associated with the global expansion of businesses
- Risks associated with competitiveness and development and commercialization of new technologies and products
- Risks associated with intellectual property rights
- Risks associated with environmental regulations
- Risks associated with product defects
- Risks associated with laws and regulations, and official regulations
- Risks associated with earthquakes and other natural disasters
- Risks associated with information security
- Risks associated with retirement benefit obligations
- Risks associated with relationship with the parent company
- Risks associated with M&A
- Risks associated with securing talent