Business Strategy of the Specialty Steel Company

Hitachi Metals IR Day 2018

May 25, 2018
Hitachi Metals, Ltd.

Koji Sato
Vice President and Executive Officer
President of the Specialty Steel Company
Business Strategy of the Specialty Steel Company

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1. Message

“Transforming changes into opportunities!”

✔ Focus on “special” steel

✔ Strengthen Monozukuri + Sales

✔ Effective use of large-scaled capital expenditures
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2-1. Performance Overview
(Business Composition)

Top manufacturer in Japan with the No. 1 share in numerous products

- **Rolls, Construction Materials**
  - High-speed steel rolls

- **Soft Magnetic Components and Materials**
  - Amorphous metals
  - FINEMET®

- **Molds and Tool Steel**
  - Cold work tool steel
  - Hot work tool steel

- **Materials for Industrial Equipment**
  - CVT belt materials
  - Piston ring materials

- **Electronic Materials**
  - Lithium-ion battery foil

- **Aircraft- and Energy-Related Materials**
  - Large forging components/materials
  - Turbine blades

**FY2018 Forecast**

- **FY2017**
- **FY2016**
- **FY2018 Target Revenues** ¥320 bn

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2-2. Performance Overview (FY2018 Policy and Strategy)

Basic Policy and Growth Strategy of the Specialty Steel Company

Achieving global growth by focusing on “special” steel

“Gross utilization of know-how”

Monozukuri: Achieving “eye-opening” manufacturing
Sales abilities: Further enhancing the strengths

Reaping the benefits of major investments

FY2018 Medium-term Management Plan: Actual Performance and Goals

<table>
<thead>
<tr>
<th></th>
<th>FY2016</th>
<th>FY2017</th>
<th>FY2018 Plan (¥105 = US$1)</th>
<th>Change vs. FY2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>¥234.7 bn</td>
<td>¥290.6 bn</td>
<td>¥320.0 bn</td>
<td>+10%</td>
</tr>
<tr>
<td>Adjusted operating income</td>
<td>¥23.5 bn</td>
<td>¥27.9 bn</td>
<td>¥31.0 bn</td>
<td>+ ¥3.1 bn</td>
</tr>
<tr>
<td>Adjusted operating margin</td>
<td>10.0%</td>
<td>9.6%</td>
<td>9.7%</td>
<td>+0.1%</td>
</tr>
<tr>
<td>Overseas Sales Ratio</td>
<td>41%</td>
<td>40%</td>
<td>40%</td>
<td>±0%</td>
</tr>
</tbody>
</table>
2-3. Performance Overview
(Major Domestic Production Bases)

- Hitachi Metals Neomaterial North Japan Works (Akita)
- Hitachi Metals Neomaterial North Japan Works (Niigata)
- Hitachi Ferrite Electronics
- Yasugi Works
  - Metglas Yasugi Works
  - Hitachi Metals Precision
- Hitachi Metals Neomaterial (Kagoshima Works)
- Hitachi Metals Neomaterial North Japan Works (Suita Works)
- Japan Aeroforge
- Hitachi Metals Neomaterial North Japan Works (Niigata)
- Hitachi Metals Wakamatsu

*Hitachi Metals Neomaterial (Tsuchiura Works)
Former SH Copper Products

*Okegawa Works
Former Hitachi Metals MMC Superalloy

- Tool steel
- Industrial materials
- Aircraft/energy materials
- Electronic materials
- Rolls, construction materials
- Soft magnetic materials

*After structural reforms made on April 2018
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3-1. Market Environment

- Introduction of tighter environmental regulations
- Increase in demands for energy-efficiency
  ➡ Expansion of demand for environmentally-friendly products

**Combustion engine vehicles**

- Increase in needs for environmental performance

**EV**

- Annual growth of 30% after 2017
  (Includes: HEV combustion engines)

**EV components/materials**
- Battery-related components/materials
- High frequency compliant materials

**Aircraft and energy**

- Large forged products
  - Aircraft engine components/materials
  - Turbine blades and others

**Tool steel**

- Hot work tool steel
- Cold work tool steel

**Source:** Hitachi Metals’ estimate based on various research materials

*Including term for hybrid electric vehicles (HEV) and plug-in hybrid electric vehicles (PHEV)
3-2. Market Environment (by Business Segment)

- **Economy level**
  - Traditional
  - Legacy
  - Emerging

- **Sales volume**
  - Rolls
    - Expansion of Olympic-related demand
  - Tool steel
    - Robust sales in automotive-related combustion + α
  - Industrial Materials
    - Robust automobile-related sales
      - Strength expected to continue
  - Electronic Materials
    - Medium/long-term expansion phase for electronics/batteries
  - Aircraft and energy
    - Engine replacement phase
      - Rapid rise in demand
    - Transition phase of technology
      - Rapid growth expected
  - Soft magnetic

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4-1. Business Overview

<table>
<thead>
<tr>
<th>Revenues/ Adjusted operating income</th>
<th>FY2016 Actual</th>
<th>FY2017 Actual</th>
<th>FY2018 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales ¥234.7 bn</td>
<td>Sales ¥290.6 bn</td>
<td>Sales 320.0 bn</td>
<td></td>
</tr>
<tr>
<td>Profit ¥23.5 bn</td>
<td>Profit ¥27.9 bn</td>
<td>Profit ¥31.0 bn</td>
<td></td>
</tr>
</tbody>
</table>

Record-highs
Jump even higher!

[$^1$ Excluding Hitachi Tool Engineering's portion
$^2$ Including SH Copper Products before the merger]

[Major trends in FY2017]

- Increase in revenues & profit
- Incorporated business of SH Copper Products
- Demand rose for: lead frames, organic EL components/materials, and cladding materials

“Maximization of sum of marginal profits”

Accommodation of production capacity

[FY2018 Jump-up Plan]

Focus on “special” steel

- “Reaping the benefits of capital expenditure”
- “Monozukuri innovation”

Improved productivity

Carry out: solution sales

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4-2. Business Overview (by Business Segments (Sales))

**Tool steel**
- Increase size of aluminum diecast!
- Global development

**Industrial Materials**
- Automobile application
- Strong environmentally friendly components/materials

**Aircraft/energy**
- Aircraft engine components/materials
- Certification and mass production seeing progress

**Electronic Materials**
- Electronic/battery materials
- Mass production & sales expansion in all areas

**Rolls**
- Capture Olympic-related demand by increasing production capacity

**Soft magnetic**
- EV and power semiconductors recovery expected due to rapid growth of applied products
4-3. Business Overview (Tool Steel)

✔️ “Grow globally”
  — Grow at the base of industries (growth beyond industry areas) —
  ➡️ Post-process business according to country/region
  ➡️ Development and sales expansion of new products

Topics

Large-size aluminum diecast

➡️ Launched operation of 10,000-ton forging press
➡️ Developed new hot work tool steel products

Improved quality precision of cold work molds

➡️ SLD-i®
  From “quasi” mass production to full-scale mass production

Global development

➡️ Provide solutions including post-processing
(Enhance/introduce machine processing, heat treatment, surface treatment facilities for US, China, Asia)

Solution

Surface treatment
Machining
Heat treatment
4-4. Business Overview (Industrial Materials)

✔ “Achieve in making the ultimate combustion engine materials”
  - Accelerate development of high-performance, environmentally friendly products —
  - Grow through co-existence with EV

✔ “Grow by placing an eye on all industry areas”

[New car sales forecast] Source: Hitachi Metals’ estimate based on various research materials

High-performance combustion engine components and materials

- Piston ring materials
- CVT materials
- Turbine wheels

Non-combustion engine components/materials

- Semiconductor manufacturing device-related components/materials
- Fuel battery-related components/materials
- New product development
  - Powder materials for 3D printers, MIM, etc.

Product development/ Market cultivation

Global car sales (million)

Gasoline cars

Natural gas cars

Diesel cars

Combustion engine-related

Gasoline cars

48V+MHEV

FCV: Fuel Cell Vehicle
FCHV: Fuel Cell Hybrid Vehicle
HEV: Hybrid Electric Vehicle
PHEV: Plug-in Hybrid Electric Vehicle
MHEV: Mild Hybrid Electric Vehicle

Sales

¥100.0 bn

FY2016 actual
FY2017 actual
FY2018 plan

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4-5. Business Overview (Electronic Materials)

✔ "Electronics, batteries, Ni, and Cu"
   — Expand sales of high-performance alloys for electronic products from all sides to achieve growth —
   ➡ Establish a supply system of both Ni and Cu components/materials
   ➡ Build a mutually compensating system for battery-related materials, organic EL components/materials, smartphone components/materials, and semiconductor components/materials

Sales

April 2018
“SH Copper Products” merged with “Hitachi Metals Neomaterial” ➡ Tsuchiura Works

Investment for production increase: ¥20.0 bn
(Mar.–Oct. 2019 To be completed in stages)

topics

Cladding materials
Battery-related components/materials
High-end smartphone components/materials

Lead frames
High-reliability lead frame materials

Organic EL
Organic EL-related components/materials

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4-6. Business Overview
(Aircraft and Energy Materials)

✓ Solidify business platform toward “¥60.0 bn sales in FY2025”
— From acquisition of certification to mass production: Compete globally with innovative technology —

Topics

April 2018
Merger with “Hitachi Metals MMC Superalloy” ➔ Establishment of Okegawa Works

Demonstrate synergies of the 3 bases

Yasugi Works

24-ton VIM
Large VAR
High-speed forging machine

Okegawa Works

Made into consolidated subsidiary
840-ton ring mill ➔ Launch of Okegawa Works

Japan Aeroforge

50,000-ton die forging press

Topics

December 2017
Obtained certification of IHI corporation’s aircraft engine-related components/materials

• Improve operation rate of hot working facilities
• Enhance machining
• Utilize CAE to reduce design costs and certification period

Developing new alloy and new process

Metallurgical Research Laboratory in Yasugi

Sales

¥100.0 bn

FY2016 actual
FY2017 actual
FY2018 plan

2010 2015 2020

VIM: Vacuum Induction Melting & Casting, ESR: Electro-Slag Remelting
VAR: Vacuum Arc Remelting, CAE: Computer Aided Engineering

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4-7. Business Overview (Soft Magnetic Materials)

✔ “Transition to power electronic materials innovator”
→ Expand soft magnetic components/materials and ceramic businesses in the rapidly growing power electronics market

Established Power Electronics Business Promotion Office

Topics
Apr. 2018

Keep up with the speed of market needs!
Respond to improved energy efficiency, sophistication of information communication

Expand soft magnetic components/materials and ceramic businesses in the rapidly growing power electronics market

Amorphous for distribution transformers

FINEMET®
SiC products

Si products

GaN products

Soft ferrite

Metal powder

Amorphous

Market demand

SiC products

Next-generation vehicle installation domain

Fits perfectly to next-generation demand

Electronics

Medical

Communication

Automotive

EV

Motor

Industrial infrastructure

Energy

Railway

FINEMET® for wireless charging

Operating frequency [Hz]

Power conversion capacity [W]
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## 5-1. Business Risks and Responses

### External environmental risks

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<tr>
<th>Raw materials, subsidiary materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counter-measure:</td>
</tr>
<tr>
<td>➡️ Price revision</td>
</tr>
<tr>
<td>➡️ Introduction of surcharge system</td>
</tr>
</tbody>
</table>

### Automobile market

- Sluggish growth of combustion engine market
- Delay in EV market development

<table>
<thead>
<tr>
<th>Counter-measure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>➡️ Expand size of non-combustion engine business</td>
</tr>
<tr>
<td>➡️ Develop new business (e.g. 3D powder business)</td>
</tr>
</tbody>
</table>

### Rise of protectionism

- Drop in price competitiveness (protective tariffs, anti-dumping)

<table>
<thead>
<tr>
<th>Counter-measure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine trends and take proactive responses</td>
</tr>
</tbody>
</table>

### Internally potential risks

**Insufficient melting ability**

| Counter-measure: | Examine in FY2018 |

**Dependency on short life cycle products** (e.g. mobile devices)

| Counter-measure: | Diversify into: batteries, organic EL, and semiconductor-related |

**Overcoming risks by:**

- Focusing on “special” and high-quality steel
5-2. Business Risks and Responses (Efforts towards Price Revision)

**Market price of graphite electrodes**

- **FY2017**
  - Raw materials (alloy)
  - Subsidiary materials (e.g. electrodes)
  - Surge in market prices

- **2H FY2017**
  - Delay in revision of product sale prices

**Market price of cobalt**

- **Sources:** Hitachi Metals’ estimate based on various research materials

**Mitigation of influence due to surge in raw and subsidiary materials prices**

- Recovery expected in 2H FY2018

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*Figures and data are subject to change based on market conditions.*
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6. FY2025 Vision

Continuous growth
Continuous growth of each business sub-segments drives the company’s over-all profit

Adjusted operating margin (%)

- Rolls
- Soft magnetic
- Aircraft/energy
- Industrial Materials
- Electronic Materials
- Tool steel

Revenues (/Fiscal Year)
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Achieve growth globally by focusing on “special” steel

Specialty Steel Company
FY2018 Plan
Revenues: ¥320.0 bn
Adjusted operating income: ¥31.0 bn (9.7%)
Information on Risks Inherent in Future Projections

This document contains forward-looking statements—such as results forecasts and management plans—that are not historical facts. All such forward-looking statements are based upon 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. Factors causing such differences include, but are not limited to, the following:

• Changes in economic conditions and regulations in the main markets where the Company operates, particularly Japan, the United States, Asia and Europe
• Sudden changes in technological trends
• Changes in the competitive advantage and the capabilities of the Company and its subsidiaries and affiliates to develop and commercialize new products and businesses
• Fluctuations in the status of product markets, exchange rates and international commodity markets
• Changes in the financing environment
• The capability of the Company and its subsidiaries and affiliates to cope with fluctuations in product supply and demand, the status of product markets, exchange rates and international commodity markets
• Protection of the Company’s intellectual property, and securing of licenses to use the intellectual property of other parties
• Changes in the status of alliances with other parties for product development, etc.
• Fluctuations in Japanese stock markets