2018 Medium-term Management Plan Progress Report

May 11, 2017
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1. Review of 2018 Medium-term Management Plan
2. Reflections on FY2016 and Initiatives for FY2017
3. Summary
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Mission

Contribute to society through the development of superior technologies and products

Founding Spirit

“Pioneering Spirit” “Sincerity” “Harmony”

Hitachi Chemical Group Vision

With a pioneering spirit to explore uncharted areas, we develop innovative solutions beyond the boundaries of chemistry, delivering “wonders” that exceed the expectations of customers and society.

Working On Wonders
Basic policy to realize the vision

Deepen research in realms beyond chemicals and strengthen our group’s sophisticated and broad-based technology platform such as Material Technologies, Process Technologies and Evaluation Technologies.

Innovate in all value chains for diverse markets and provide society with new value.

Achieve sustained business growth by generating adequate profits.

Maximize corporate value through collaboration with stakeholders.
Basic policies for 2018 Medium-term Management Plan

Where we want to be in ten years' time

A globally active innovator transcending the boundaries of chemistry, with high functional materials as core and extending to devices, systems and services

Operating margin over 14%

2018 Medium-term Management Plan

Strengthen global business

- Cultivate top share business by changing method of competition
- Accelerate commercialization through open innovation

Strengthen management base

- Build global management infrastructure
- Establish cost structure as a global business leader
Expansion of global top share business through reforms to niche and cluster business structures

**Key measures**

**Niche and Cluster Strategy**

**Niche**

Businesses that should be sustained even if small in scale due to high profitability and strategic intent

**Cluster**

Business groups that can be implemented by sharing strategies for global success through grouping

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Consider withdrawal from low profit business/ non-core business
Key measures
Accelerate commercialization through open innovation

Accelerate commercialization by “Collaborative Creation” using outside resources

Marketing | Business Design | Solution realization | Commercialization

Markets
- Venture companies
- Customer
- Competitors

Use of outside resources (M&A, technology licenses, business tie-ups, etc.)

New Marketing through Collaborative Creation

Innovation Center
(established in FY16)
(Open Laboratory)
*Packaging materials field
*Touch panel field

Development divisions
Packaging Solution Center
Touch Panel Evaluation Center

Research divisions

Solution provision

Hitachi Chemical

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Key measures
M&A/Alliances

Acquire technologies and business platforms from outside the company and accelerate growth

Functional Materials
- Expand alliances across entire value chain
- Gain global competitive advantage through increased scale

Energy Storage Devices and Systems
- Reinforce platform for global operations (increase production facilities and sales offices)

Automotive Products
- Create new business with materials technology at its core
- Establish European development and production bases with a view to expanding into new regions

Life Sciences
- Build foundations for entry into the fields of genetic diagnosis and regenerative medicine
Environmental, Social, and Governance (ESG) Management

Basic Stance on ESG Management
Disclose information in a timely and appropriate manner while taking into account the UN ‘Sustainable Development Goals (SDGs)’ and further enhancing the initiatives.

Environmental
Carbon management (CO₂ emission reduction), product life cycle assessment, water use reduction, etc.

Social
Diversity, creating career opportunities for women, work life innovation, etc.

Governance
Publicize initiatives benefiting stakeholder interests as Corporate Governance Guidelines

Promoting corporate activity that also responds to ESG issues to boost long-term corporate value
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## 2018 Medium-term Management Plan Goals

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<thead>
<tr>
<th></th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales revenue</strong></td>
<td>546.5 billion yen, CAGR 5.6% (FY2012→2015)</td>
<td>554.1 billion yen, Compared to FY2015 1.4%</td>
<td>CAGR 7~8% (FY2015→2018)</td>
</tr>
<tr>
<td><strong>Operating margin</strong></td>
<td>9.7% (9.1%)*1</td>
<td>9.6% (9.7%)</td>
<td>11%</td>
</tr>
<tr>
<td><strong>ROIC</strong></td>
<td>12.7%</td>
<td>12.3%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Advanced functional materials 28.3%</td>
<td>30.1%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Automotive products 6.6%</td>
<td>7.0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Energy storage devices 8.2%</td>
<td>6.0%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>ROE</strong></td>
<td>10.9%</td>
<td>11.1%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>CO₂ emissions</strong></td>
<td>99%</td>
<td>101%</td>
<td>96%</td>
</tr>
<tr>
<td><strong>Percentage of female managers</strong></td>
<td>10.4%</td>
<td>11.6%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

*1 Operating margin without other income and expenses  
*2 Per unit of sales compared to the FY2014 results (Major domestic plants)  
*3 Non-consolidated, under age of 45
Reflections on FY2016 and Initiatives for FY2017

**FY2016 Progress**

**Outcomes**

- Increased sales due to new competitive strategies in growth fields
- Better promotion of, and enhanced systems for, open innovation
- M&A (FET*)
- Discontinuation of non-core products (Fineset, Copper foil business, etc.)
- Continual cost reduction

**Issues**

- Delays in the launch of new business
- Slow in responding to commoditization of some products

**External Environment in FY2017**

- Rising prices for raw materials (copper, lead, naphtha)
- Related market trends (based on our market research)
  - Smartphone penetration is seeing nearly the end
  - Growth areas are IoT technology and demand for automotive applications
  - The Japanese and North American markets are slowing, but strong demand in India and the ASEAN region

* FET: FIAMM Energy Technology S.p.A.
### Key Initiatives for FY2017

- Reap results from Niche and Cluster businesses in growth fields
- Speed up commercialization process in new businesses
  (enhance project management following introduction of technology)
- Accelerate alliances in High Functional Materials businesses
- Swiftly leverage synergies with newly consolidated companies
  (HCEN*, FET, and PCT)
- Promote work process reform and continue improving productivity

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* HCEN: Hitachi Chemical Energy Technology Co., Ltd.
Functional Materials Segment

Basic Policy:
Strengthen key businesses through Niche and Cluster strategies

Niche products

FY2016 Progress

- Started mass production and sale of new products for high-definition displays
- Adopted new products for next-generation semiconductor processes
- Developed and began sale of nanoceria slurry, which reduces abrasion
- Secured demand for automotive applications and enhanced production capabilities

Initiatives for FY2017

- Expand share by increasing sales of new products
- Increase sales of nanoceria slurry
- Consider further enhancement of production capabilities

Focus on growth fields and achieve further expansion

ACF

CMP slurry

Anode materials

General purpose ceria

Nanoceria slurry
Cluster businesses

<table>
<thead>
<tr>
<th>FY2016 Progress</th>
<th>Initiatives for FY2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sharply increased sales of packaging materials</td>
<td>• Develop and commercialize next-generation packaging materials and processes</td>
</tr>
<tr>
<td>• Launched collaborative project to create next-generation packaging</td>
<td></td>
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<tr>
<td>• Decided on relocation and expansion of Open Lab</td>
<td></td>
</tr>
<tr>
<td>• Completed grand design for cluster strategy</td>
<td>• Launch new businesses through use of open innovation</td>
</tr>
<tr>
<td></td>
<td>• Propose optimal solutions for automotive applications</td>
</tr>
</tbody>
</table>

Put cluster activities on track, further reinforce business platforms, and reap results
Collaborative project to create next-generation packaging

Take the lead in forming a team of material and equipment manufacturers, including competitors, to propose solutions for next-generation semiconductor packaging (Fan-Out Wafer Level Package)

The materials and equipment lineups in the project

<table>
<thead>
<tr>
<th>Process</th>
<th>Chip lamination</th>
<th>Sealing</th>
<th>Debonding</th>
<th>Circuit formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Materials</td>
<td>Mounter</td>
<td>Temporary fixing material</td>
<td>Carrier</td>
</tr>
<tr>
<td>Hitachi Chemical</td>
<td></td>
<td>-</td>
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</tr>
<tr>
<td>Material &amp; equipment manufacturers</td>
<td>O</td>
<td>O</td>
<td>O</td>
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</tbody>
</table>
Advanced Components and Systems Segment
- Automotive Products

Basic policy: Strengthen base to become a global top supplier

**FY2016 Progress**
- Established new products plans
- Entered copper-free pad domain and secured orders in the North American market
- Expanded global orders of turbo engine components
- Searched for material technology synergy

**Initiatives for FY2017**
- Accelerate reliability assessment with a view to full-scale entry into European market
- Increase suitability for next-generation automotive applications
- Open new design center in Thailand
- Expand sales of high-value added products
- Make the German company ISOLITE GmbH a consolidated subsidiary

Further accelerate global expansion
Share acquisition of ISOLITE GmbH

Sales Revenue 64.3 million €
(End of Dec. 2016)

To acquire thermal management business, and European base as well as sales channels

- Supply chain capable of swiftly responding to customer demands (material development, mold manufacturing, design, production, and sales)
- Ability to make design proposals to automakers and work jointly with them on design and development
- Expand both companies’ business by cross-selling
- Speed up development of environmentally friendly products through synergies in thermal insulation technology
- Propose heat management solutions for engine and exhaust parts, etc.

Pipes connected to turbochargers, covered by ISOLITE’s thermal insulation products
Advanced Components and Systems Segment

- Energy Storage Systems

Basic Policy:
Establish presence in global markets through increased scale

Industrial batteries: Bolster capturing of demand in growth areas

FY2016 Progress

• Generated synergy with Hitachi Chemical Energy Technology
• Amassed experience in global new energy trials
• Slow response to falling lithium-ion battery prices

Initiatives for FY2017

• Reinforce efforts to expand sales in global telecommunications field
• Use results of trials to accelerate shift from stand-alone battery sales to systems and service business

Provide energy storage solutions focused on global needs, as a battery-maker that understands systems
Automotive batteries: Capture global demand by expanding bases

FY2016 Progress

- Acquired European business base through consolidation of FET in Italy
- Delays in improving productivity at Hitachi Chemical Asia Thailand

Initiatives for FY2017

- Introduce our idling stop system battery technologies to FET and prepare for mass production
- Strengthen manufacturing capabilities with technical support from Japan

Establish a presence in global markets by maximizing synergy and reinforcing profit base
FET becomes a consolidated subsidiary of the Hitachi Chemical Group

Sales Revenue  425.8 million €  
(End of Dec. 2015)

- To acquire base for production of automotive and industrial batteries using lead-acid technology
- Expand global sales channels with focus on Europe and America
- Possesses global sales network centered on Europe
- 15% share of automotive battery market and 11% share of industrial battery market in Europe

Use European brand strength, production base, and sales network to expand business in the global market

Automotive lead-acid batteries manufactured by FET

Industrial lead-acid batteries manufactured by FET
Basic Policy:
Cultivate future foundation business based on materials technology and diagnostic medicine business

**FY2016 Progress**

- Started large-scale clinical trials with the University of Texas MD Anderson Cancer Center focused on genetic analysis of circulating tumor cells
- Decided to acquire 100% stake in US company PCT, LLC
- Began construction of development and production facility in Japan for regenerative medicine cells, etc.

**Initiatives for FY2017**

- Establish foundation for genetic diagnosis business
- Draw up grand design for PCT global expansion
- Proceed with establishment of Japan business (complete production facility)

Develop business platforms through use of outside technologies
Regenerative medicine cell global market forecast by application
(Source: compiled from Ministry of Economy, Trade and Industry data)

Medium-term target market
Cancer immunotherapy

Long-term target market
Expand into somatic stem cell and iPS cell fields

Cancer immunotherapy cell culture process and target domain

Our business domain
(Outsourced cell production services, development and sale of consumables)
Basic Policy:
Achieve dynamic growth, including consideration of large projects

**FY2016 Progress**

- Prepared for alliances based on growth strategy
- Negotiated with ISOLITE for acquiring the stock
- FET became a consolidated subsidiary
- Decided to acquire 100% stake in PCT

**Initiatives for FY2017**

- Accelerate alliances/M&A
- Steadily generate synergy with newly consolidated companies
**Basic Policy:** Invest in growth areas as much as 1.5 times the previous Medium-term Plan

- Relocation and expansion of Open Lab
- Generate synergies with FET and HCEN
- Facilities for outsourced production of regenerative medicine cells
- Work Life Innovation for indirect operations (IT investment, etc.)

**Amount of Investment (billion yen)**

- **FY2016:** 39.9
- **FY2017:** 60.0

Accelerate investment in growth fields and cost structure improvements
Strengthening Our Management Base

Build global management infrastructure

**FY2016 Progress**
- Introduced orientation program (for M&A and mid-career recruits)
- Developed and operated consistent management grading system to ensure optimal assignment of personnel

**Initiatives for FY2017**
- Develop and implement common level-specific educational programs
- Introduce IT systems aimed at visualization of HR information

Reinforce management infrastructure to suit diversification of human resources
Establish a cost structure as a global business leader

**FY2016 Progress**

- Decided to make major investment in streamlining production at overseas bases (robotics, automation, etc.)
- Implemented business process engineering cycle (BPEC) in some departments

**Initiatives for FY2017**

- Reap benefits
- Examine investment in further streamlining
- Expand application of BPEC
- Start to reap benefits in front-runner departments (automation of operations, cessation of non-core operations, etc.)

Achieve optimal fixed cost ratio through united efforts by all group companies
Environmental

Reducing CO₂ emissions in the Group

**FY2016 Progress**
- CO₂ emissions per unit of production deteriorated, increase in conjunction with expansion of business activities, etc.

**FY2017 Initiatives**
- Reinforce energy-saving measures in facilities where emissions per unit of production deteriorated
  - Stimulate Energy Conservation Committee activities through greater visualization of emissions per unit of production
  - Raise awareness of CO₂ costs

Reducing environmental load through LCA

Identify and reduce environmental load throughout the value chain by conducting life cycle assessments for major products

**FY2016 Progress**
- Initiated life cycle assessments on some of the major products

**FY2017 Initiatives**
- Expand scope of life cycle assessments and take measures to reduce environmental load
Progress with ESG Management

Social

Promoting career opportunities for women

- Conducted career interviews with women, clarified issues
- Selected for the first time in the index of “Nadeshiko Meigara”, which awards companies that excel in career opportunities for women

- Secure pool of human resources, train and produce candidates for management positions
- Create an environment where women can play active roles
  (further encourage flexible working styles, continue training to raise awareness and change behavior of male managers)

Work Life Innovation

- Introduced discretionary working system
- Visualize indirect operation processes and problem analysis

- Reform indirect operations
  (cessation/simplification of non-core operations, automation of routine work, etc.)
- Enhance remote office environment
  (increase number of mobile PCs, etc.)
Progress with ESG Management

Governance

- Reinforcing governance by increasing the number of independent outside directors*

<table>
<thead>
<tr>
<th></th>
<th>FY2015</th>
<th>FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent outside directors</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

- Upgrading and implementing corporate governance guidelines

  FY2016 Progress
  - Appointed diverse outside directors (2 non-Japanese, 1 woman)
  - Self-evaluation of Board of Directors’ effectiveness with assistance of outside organization
  - Audit of group companies by outside directors (auditors)

  FY2017 Initiatives
  Establish processes for selection and training of candidates for next-term successors by Board of Directors

* Independent directors as determined by the Tokyo Stock Exchange
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### FY2017 Financial Target

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<th></th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2017 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales revenue (billion yen)</td>
<td>306.8</td>
<td>309.2</td>
<td>316.4</td>
</tr>
<tr>
<td>Life Sciences, etc.</td>
<td>105.8</td>
<td>116.1</td>
<td>154.2</td>
</tr>
<tr>
<td>Energy storage devices</td>
<td>126.9</td>
<td>124.3</td>
<td>131.3</td>
</tr>
<tr>
<td>Automotive products</td>
<td>9.7</td>
<td>9.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Operating Margin (%)</td>
<td>7.0</td>
<td>4.5</td>
<td>8.1</td>
</tr>
</tbody>
</table>

* Operating margin without other income and expenses
Dividends

Dividend increased by 5 yen in FY2016

Continue policy of paying stable dividends aimed at a payout ratio of around 30%
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