Progress of APTSIS 10 (FY2008-FY2010)

Basic Concept:
“Respond quickly to economic downturn by restructuring to accelerate innovation and leap ahead”

- Overall Summary
- Business Restructuring
- Organic Growth Strategy
  - Example of Growth Business: FPD-related business
- Innovation Strategy
  - Examples of New Businesses: LiB materials for HEVs, White LEDs, Sustainable resources
- M&A Strategy
- Synergies among Operating Companies

Overview of Basic Policy of Next Medium-term Management Plan, APTSIS 15

- What We Aspire to Be in 2025
- Introduction of KAITEKI Indices
- Basic Policy of APTSIS 15
Change in Portfolio Terminology

Business Portfolio

- **Next-generation Growth Businesses**
- **Existing Growth Businesses**
- **New Businesses**
- **Growth Businesses**
- **Businesses to Be Restructured**
- **Stable Businesses**

In *APTSIS 10*, businesses are categorized and named as shown. However, under our next medium-term management plan, we are renaming the existing growth businesses and the next-generation growth businesses as growth businesses and the new businesses, respectively. For explanations in today’s presentation, we will use the revised terminology following this change.

**List of Abbreviations**

- **MCHC**: Mitsubishi Chemical Holdings Corporation
- **MCC**: Mitsubishi Chemical Corporation
- **MTPC**: Mitsubishi Tanabe Pharma Corporation
- **MPI**: Mitsubishi Plastics, Inc.
- **MRC**: Mitsubishi Rayon Co., Ltd.
- **NSCI**: The Nippon Synthetic Chemical Industry Co., Ltd.
Basic strategy was changed in response to the unprecedented global economic downturn that has continued since autumn 2008.

Original (May 2008)

- **Concept**: Growing, innovating, and leaping ahead
- **Organic Growth**: Shift to high-performance products and high value-added businesses
  - Execute efficient product/business life cycle management
- **Innovation**: Nurture and accelerate seven next-generation growth businesses
- **M&A**: Strategic investment for alliances and M&A

Revised (June 2009)

- **Concept**: Respond to severe economic downturn by restructuring to accelerate innovation and leap ahead
- **Restructuring**: Focus on growth businesses
  - Reduce capital expenditure
- **Organic growth**: Accelerate the focused new businesses
  - White LEDs
  - LiB materials for HEVs
- **Innovation**: Earliest possible realization
  - QUADRANT
  - NSCI
  - Taiyo Nippon Sanso
  - MRC

Overall Summary

Growing, innovating, and leaping ahead

Respond to severe economic downturn by restructuring to accelerate innovation and leap ahead

Restructuring

Organic growth

Innovation

M&A
Business Environment Outlook

On a recovery track in general, although rate differs by industry

- Electrical & Electronics
  - Accelerated shift to LED lighting
  - FPD market is solid as well

- Semiconductor
  - Market recovery

- Health
  - Stable demand

- Housing
  - Demand continues to taper off

- Public works
  - Market continues to contract

- Automobile
  - Weak domestic demand
  - Accelerated shift to HEV, EV, and lightweight

- Steel
  - Recovery track
Consolidated P/L

Profit (Billions of yen)

Net sales
Operating income
Net income

Net sales (Billions of yen)

MTPC inaugurated in Oct. 2007
New MPI inaugurated in Apr. 2008
MRC integrated in Apr. 2010

FY 2005 2006 2007 2008 2009 2010 Forecast

Net income
Operating income
Net sales

MRC integrated in Apr. 2010

New MPI inaugurated in Apr. 2008

MTPC inaugurated in Oct. 2007

Overall Summary

APTSIS 10

Mitsubishi Chemical Holdings Corporation
## Consolidated Operating Income by Segment

### FY2010 Forecast vs. APTSIS 10 Final Year Targets

<table>
<thead>
<tr>
<th></th>
<th>FY2010 forecast</th>
<th>APTSIS 10 final year targets</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics Applications</td>
<td>5.0</td>
<td>39.0</td>
<td>(34.0)</td>
</tr>
<tr>
<td></td>
<td>[17.0]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designed Materials</td>
<td>33.0</td>
<td>22.0</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td>[26.0]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care</td>
<td>64.0</td>
<td>100.0</td>
<td>(36.0)</td>
</tr>
<tr>
<td>Chemicals</td>
<td>34.0</td>
<td>29.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Polymers</td>
<td>23.0</td>
<td>21.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Other</td>
<td>3.0</td>
<td>16.0</td>
<td>(13.0)</td>
</tr>
<tr>
<td>Corporate</td>
<td>(6.0)</td>
<td>(17.0)</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td>[(11.0)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency</td>
<td>—</td>
<td>(20.0)</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>156.0</td>
<td>190.0</td>
<td>(34.0)</td>
</tr>
</tbody>
</table>

### Composition of Operating Income for FY2010 Forecast

- **Health Care**: 40%
- **Performance Products**: 24%
- **Industrial Materials**: 36%
- **Designed Materials**:
- **Electronics Applications**

**Note**: Regarding FY2010 forecast, figures in parentheses are recombined to express figures for segments when APTSIS 10 was formulated.

Impact of a review of some business segments and strategic R&D expenses that were charged directly to business segments from Corporate:
- Electronics Applications: ₲12.0 billion
- Designed Materials: ₲7.0 billion

Mitsubishi Chemical Holdings Corporation
### Business Restructuring Progress (1)

**Steady withdrawal from unprofitable businesses and continuing focus on restructuring to strengthen businesses**

<table>
<thead>
<tr>
<th>MCC</th>
<th>Withdrawal/Restructuring</th>
<th>APTSIS 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM/Derivatives</td>
<td>Decision on Yuka Seraya liquidation (SM)</td>
<td>Sep. 2009</td>
</tr>
<tr>
<td></td>
<td>Stock sales of Techno Polymer (ABS resins)</td>
<td>Mar. 2010</td>
</tr>
<tr>
<td></td>
<td>Stock sales of PS Japan (PS)</td>
<td>Oct. 2011</td>
</tr>
<tr>
<td></td>
<td>Shutdown of SM production facility (Kashima)</td>
<td>Mar. 2011</td>
</tr>
<tr>
<td>PVC/VCM</td>
<td>Shutdown of PVC production facility (Mizushima)</td>
<td>May 2009</td>
</tr>
<tr>
<td></td>
<td>Shutdown of production facilities for PVC (Yokkaichi), chlor-alkali/ VCM (Mizushima)</td>
<td>Mar. 2010</td>
</tr>
<tr>
<td>Caprolactam/Nylon</td>
<td>Shutdown of cyclohexane production facility (Mizushima)</td>
<td>Mar. 2011</td>
</tr>
<tr>
<td></td>
<td>Shutdown of production facilities for caprolactam, anone, and ammonium sulfate</td>
<td>Mar. 2011</td>
</tr>
<tr>
<td></td>
<td>Divestiture of nylon business (Kurosaki)</td>
<td>May 2011</td>
</tr>
<tr>
<td>Surfactants</td>
<td>Shutdown of AO/HA production facilities</td>
<td>Apr. 2011</td>
</tr>
<tr>
<td></td>
<td>Withdrawal from glycol ether business</td>
<td>Dec. 2011</td>
</tr>
<tr>
<td>PTA</td>
<td>Creation of global structure</td>
<td>Jun. 2011</td>
</tr>
<tr>
<td></td>
<td>Shutdown of paraxylene production facility (Mizushima)</td>
<td>May 2010</td>
</tr>
<tr>
<td></td>
<td>Shutdown of PTA production facility (Matsuyama)</td>
<td>Dec. 2009</td>
</tr>
<tr>
<td>Performance Products</td>
<td>Merger with Kasei Optonix</td>
<td>Apr. 2009</td>
</tr>
<tr>
<td>Phosphors</td>
<td>Merger with Japan Epoxy Resins</td>
<td>Apr. 2010</td>
</tr>
<tr>
<td>Epoxy resins</td>
<td>Establishment of a JV with Chisso-Asahi Fertilizer</td>
<td>Oct. 2010</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>Stock sales of Calgon Mitsubishi Chemical</td>
<td>Mar. 2011</td>
</tr>
<tr>
<td>Activated carbon</td>
<td>Shutdown of sulfuric acid production facility</td>
<td>Nov. 2011</td>
</tr>
</tbody>
</table>

**Blue text**: restructuring for strengthening business operations

---

Mitsubishi Chemical Holdings Corporation
## Restructuring Progress (2)

### MTPC

<table>
<thead>
<tr>
<th><strong>Pharmaceuticals</strong></th>
<th><strong>Restructuring</strong></th>
<th><strong>APTSIS 10</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic drugs</strong></td>
<td>Tanabe Seiyaku Hanbai and Chosei Yakuhin merged</td>
<td>Apr.</td>
</tr>
<tr>
<td><strong>Production companies</strong></td>
<td>Production companies consolidated to form Mitsubishi Tanabe Pharma Factory</td>
<td>Oct.</td>
</tr>
<tr>
<td><strong>Service support companies</strong></td>
<td>Welfide Service integrated into Tanabe Total Service</td>
<td>Apr.</td>
</tr>
<tr>
<td><strong>Business bases</strong></td>
<td>Headquarters (Osaka), research centers, and logistics sites integrated respectively</td>
<td>Oct.</td>
</tr>
</tbody>
</table>

### MPI

<table>
<thead>
<tr>
<th><strong>Industry &amp; Life Infrastructure</strong></th>
<th><strong>Restructuring</strong></th>
<th><strong>APTSIS 10</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pipe materials</strong></td>
<td>Sales sites consolidated (17→9 sites)</td>
<td>Dec.</td>
</tr>
<tr>
<td></td>
<td>Production sites consolidated (Phase 1: 7→5 sites)</td>
<td>Mar.</td>
</tr>
<tr>
<td></td>
<td>Production sites to be consolidated (Phase 2: 5→4 sites)</td>
<td>Sep.</td>
</tr>
<tr>
<td><strong>Agricultural materials</strong></td>
<td>Agricultural materials business integrated into MKV Dream</td>
<td>Jul.</td>
</tr>
</tbody>
</table>

Blue text: restructuring for strengthening business operations
Business Restructuring Progress (3)

Continuous fixed cost reduction and accelerated structural reform

Comprehensive fixed cost reduction: ¥32.0 billion in FY2010

- Reduced fundamental cost through structural reform
  - MCC: Fixed cost reduction project
    → ¥13.0 billion incorporated into plan
    - Streamline corporate functions
    - Optimize plant infrastructure giving consideration to withdrawal from businesses
  - MTPC: R&D expenditure and fixed cost reduction
    → ¥16.0 billion incorporated into plan
  - MPI: Cost reduction activities to strengthen business foundation
    → ¥3.0 billion incorporated into plan

Medium- to long-term measures

- Production sites → Fundamental reform in line with growth businesses and new businesses
- Research centers → Build an optimal structure for maximizing synergy toward the accelerating of innovation strategies
- Overseas bases → Build overseas regional strategies that respond to globalization
Business Restructuring Progress (4)

Unified naphtha cracker operations in Mizushima

JV established to unify MCC and Asahi Kasei Chemicals naphtha cracker operations

Objectives

- Downsizing naphtha cracker facilities of both companies
  (MCC: After shutdown of VCM production facility, build optimum production system meeting ethylene demand of 380kt/year)
- Consolidation into single naphtha cracker—timed to correspond with further decrease in ethylene demand (carried out in accordance with demand trends)

Basic framework

- Facilities to be consolidated
  - Naphtha crackers and accompanying facilities of both companies
- Scope of operation
  - Sales of basic petrochemicals and utilities to MCC and Asahi Kasei Chemicals
  - Joint procurement of naphtha feedstock and fractions in shortfall such as C3
  - Rationalization of basic petrochemicals operations, formulation, and implementation of concrete measures to heighten efficiency

Schedule

- Start-up of the JV: April 2011
- Downsizing naphtha cracker facilities of both companies:
  - To be carried out by spring 2012 (MCC: To be executed at time of regular maintenance in May 2011)
- Consolidation into single naphtha cracker: To be carried out in accordance with demand trends
**Business Restructuring Summary**

**Acceleration of restructuring and fixed cost reduction**

<table>
<thead>
<tr>
<th>Restructuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrochemicals</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Performance Products</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MCC</td>
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<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MTPC</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MPI</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Withdrawal from unprofitable businesses (FY2007-FY2009)**

- **Net sales:** ¥300.0 billion
- **Operating income:** –¥15.0 billion
- **Accumulated extraordinary loss:** –¥16.0 billion

**Fixed cost reduction (FY2010)**

- ¥32.0 billion

Blue text: restructuring for strengthening business operations

Fixed Cost reduction

- MCC: Fixed cost reduction project
- MTPC: R&D expenditure and fixed cost reduction
- MPI: Cost reduction activities to strengthen business foundation
## Capital Expenditure, Investment and Others

Response to severe economic downturn →
Reduction of investment through focused selection

### Reduction in capital expenditure, investment and others

<table>
<thead>
<tr>
<th>Three-year plan for FY2008-FY2010</th>
<th>(Billions of yen)</th>
<th>Initial plan</th>
<th>Current</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital expenditure, Investment and others</td>
<td>590.0</td>
<td>335.0</td>
<td>(255.0)</td>
<td>(43%)</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>495.0</td>
<td>275.0</td>
<td>(220.0)</td>
<td>(44%)</td>
</tr>
<tr>
<td>Performance Products</td>
<td>140.0</td>
<td>92.0</td>
<td>(48.0)</td>
<td>(34%)</td>
</tr>
<tr>
<td>Health Care</td>
<td>65.0</td>
<td>58.0</td>
<td>(7.0)</td>
<td>(11%)</td>
</tr>
<tr>
<td>Industrial Materials</td>
<td>140.0</td>
<td>80.0</td>
<td>(60.0)</td>
<td>(43%)</td>
</tr>
<tr>
<td>Corporate and others</td>
<td>150.0</td>
<td>45.0</td>
<td>(105.0)</td>
<td>(70%)</td>
</tr>
<tr>
<td>Investment and others (Ordinary)</td>
<td>95.0</td>
<td>60.0</td>
<td>(35.0)</td>
<td>(37%)</td>
</tr>
<tr>
<td>Actual result</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan</td>
<td>45.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Major Capital Expenditure Progress

### Steady implementation of growth and innovation strategies

**Major capital expenditure**

<table>
<thead>
<tr>
<th>Business domain (Large-scale capital expenditure)</th>
<th>Major capital expenditure (Actual results and plans)</th>
<th>Contribution to net sales in FY2010</th>
</tr>
</thead>
</table>
| **Performance Products**
  Phase II: 22.0  
  APTSIS 10: 32.0 | MAF production capacity increased  
  BPDA production capacity increased  
  Mass-production facility for cathode material for LiB built  
  Optical PET film production facility expanded  
  OPL film for polarizing film production facility expanded  
  Move overseas development of LiB materials for HEVs  
  Increase production capacity of white LEDs | Sakaide  
  Kurosaki  
  Mizushima  
  **Today's topics**  
  FY2005  
  FY2006  
  FY2007  
  FY2008  
  FY2010 Plan | 30.0 |
| **Health Care**
  Phase II: 12.0  
  APTSIS 10: 15.0 | New Medicinal Chemistry building constructed | Yokohama  
  FY2009 | -- |
| **Industrial Materials**
  Phase II: 124.0  
  APTSIS 10: 24.0 | Polycarbonate production facility expanded  
  No. 2 plant of terephthalic acid constructed  
  Polypropylene production facility expanded  
  PTMG production capacity increased  
  EO Center infrastructure reorganized  
  Iso-sorbite polycarbonate pilot plant built | Kurosaki  
  India  
  Kashima  
  China  
  Kashima  
  Kurosaki  
  **FY2005**  
  **FY2006**  
  **FY2007**  
  **FY2008** | 100.0 |
Growth Business Example:
FPD-related Component Materials

Aggressively promote FPD-related component materials business in China and Asia

<table>
<thead>
<tr>
<th></th>
<th>FY2009 Results</th>
<th>FY2015 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>¥77.4 billion</td>
<td>¥170.0 billion</td>
</tr>
<tr>
<td>Profit</td>
<td>¥16.5 billion</td>
<td>¥35.0 billion</td>
</tr>
</tbody>
</table>

Reinforce core material supply capability
Respond to very weak demand for LCD panel core component materials by reinforcing production and sales bases

<table>
<thead>
<tr>
<th></th>
<th>Expansion completed/ Expansion in progress</th>
<th>Future plans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity of new facility</td>
<td>Operation timing</td>
</tr>
<tr>
<td>Polyester film</td>
<td>MPI</td>
<td>15,000 tons</td>
</tr>
<tr>
<td>OPL film</td>
<td>NSCI</td>
<td>15 million m²</td>
</tr>
<tr>
<td>Acrylic sheet</td>
<td>MRC</td>
<td>20,000 tons</td>
</tr>
<tr>
<td>Color resist</td>
<td>MCC</td>
<td>Production system for expansion to be established</td>
</tr>
</tbody>
</table>

Leverage Group synergies for expansion
Share development information of core component materials within the Group and promote business innovation

Rapid rise in investment for large panels in China
- Chinese-state enterprises (BOE, TCL, IVQ, etc.)
- Korean enterprises (SEG, LGD)
- Taiwanese enterprises (AUO, CMI, etc.)
Innovation Strategy Progress

Nurture and accelerate seven new businesses

Control R&D expenditures through selection and concentration

R&D expenditures (FY2008-FY2010)

<table>
<thead>
<tr>
<th>Initial plan</th>
<th>June 2009</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>¥425.0 billion</td>
<td>¥407.0 billion</td>
<td>¥392.0 billion</td>
</tr>
</tbody>
</table>

- White LEDs
- LiB materials for HEVs
- Organic photovoltaic modules
- Organic photo semiconductor
- Sustainable resources
- Chemical components for automobiles
- Personalized medicine

Today’s topic

Conversion efficiency: achieved 7.4% (Mar. 2010)

Business alliance with Pioneer (Launch target: 2011)

Initiate group-wide cross-sectional teams to accelerate development

Development of new cancer marker, stroke marker underway
LiB Materials: Market and Sales/Share Targets

Expand sales/share in line with growth of HEV/EV applications

Four key LiB materials: Market forecast and MCHC sales/share targets

(Billions of yen)

(MCC estimate 2010)
LiB Materials: Business Outlook

*Emphasize thorough quality management and cost reduction, and secure stable worldwide supply capability to increase share*

### Four key LiB materials

<table>
<thead>
<tr>
<th>Features and competitive advantages</th>
<th>Share (%) 2009 → 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrolyte</strong></td>
<td></td>
</tr>
<tr>
<td>• Optimal formula and additive patent</td>
<td>25 → 40</td>
</tr>
<tr>
<td>• Synergy with other materials</td>
<td></td>
</tr>
<tr>
<td><strong>Anode</strong></td>
<td></td>
</tr>
<tr>
<td>• Spherical graphite technology</td>
<td>20 → 35</td>
</tr>
<tr>
<td>• Enhanced features through surface treatment technology</td>
<td></td>
</tr>
<tr>
<td><strong>Cathode</strong></td>
<td></td>
</tr>
<tr>
<td>• Less cobalt cathode</td>
<td>&lt;5 → 10</td>
</tr>
<tr>
<td>• Enhanced output/durability through unique particle design</td>
<td></td>
</tr>
<tr>
<td><strong>Separator</strong></td>
<td></td>
</tr>
<tr>
<td>• Enhanced output, lifecycle, and conservation property through dry process, 3-dimensional pore structure</td>
<td>&lt;5 → 10</td>
</tr>
</tbody>
</table>
# LiB Materials: Investment Plans

Increase and strengthen global production capabilities through continuing capital expenditure

<table>
<thead>
<tr>
<th>Raw materials for anodes:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JV establishment with China’s QINGDAO GR-TAIDA CARBON (May 2010)</td>
<td></td>
</tr>
<tr>
<td>Anodes:</td>
<td></td>
</tr>
<tr>
<td>Production facility expansion (Sakaide) [December 2010] → + 2,000 tons</td>
<td></td>
</tr>
<tr>
<td>Cathodes:</td>
<td></td>
</tr>
<tr>
<td>Production facility expansion (Mizushima) [October 2010] → + 1,600 tons</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Current Capacity</th>
<th>Planned Investment by 2015 (Billions of yen)</th>
<th>Target Capacity</th>
<th>Production Site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrolyte</strong></td>
<td>8,500 tons/year</td>
<td></td>
<td>50,000 tons/year</td>
<td>domestic and overseas</td>
</tr>
<tr>
<td><strong>Anode</strong></td>
<td>3,000 tons/year</td>
<td></td>
<td>35,000 tons/year</td>
<td>domestic and overseas</td>
</tr>
<tr>
<td><strong>Cathode</strong></td>
<td>600 tons/year</td>
<td></td>
<td>15,000 tons/year</td>
<td>domestic</td>
</tr>
<tr>
<td><strong>Separator</strong></td>
<td>12 million m²/year</td>
<td></td>
<td>72 million m²/year</td>
<td>domestic</td>
</tr>
</tbody>
</table>

Total: ¥30.0 billion

Expected sales: ¥80.0 billion (FY2015)
White LEDs: Business Outlook

Utilize technological superiority and Verbatim’s sales network to establish a highly profitable business model.

Global development of KAITEKI lighting

High color rendering, dimmable, & tuneable lighting

Added-value

High

Value Chain

In-house component materials

OEM, outsourcing

Modules

Lighting apparatus

Phosphors

Substrates

Sealants

Chips

Exhibited at Frankfurt Light+Building Show in April 2010

(Launch from 2010)

Mitsubishi Chemical Holdings Corporation
White LEDs: Market and Sales/Share Targets

Aim to achieve combined sales of ¥100.0 billion for component materials, modules, and lighting apparatus and increase shares for GaN substrates and phosphors in 2015

Sales target for component materials and lighting apparatus

Share target for component materials (2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales of component materials (Billions of yen)</th>
<th>MCHC share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>¥57.0 billion</td>
<td>35%</td>
</tr>
<tr>
<td>2011</td>
<td>¥20.0 billion</td>
<td>22%</td>
</tr>
<tr>
<td>2012</td>
<td>¥1.7 billion</td>
<td>14%</td>
</tr>
<tr>
<td>2013</td>
<td>¥11.5 billion</td>
<td>14%</td>
</tr>
<tr>
<td>2014</td>
<td>¥50.0 billion</td>
<td>40% → 50%</td>
</tr>
<tr>
<td>2015</td>
<td>¥20.0 billion</td>
<td>50%</td>
</tr>
</tbody>
</table>

GaN substrates

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales of module and lighting apparatus (Billions of yen)</th>
<th>MCHC share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>¥1.7 billion</td>
<td>14%</td>
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</table>
## White LEDs: Investment Plans

**Proactive investment in highly competitive superior GaN substrates and phosphors**

<table>
<thead>
<tr>
<th></th>
<th>Current status</th>
<th>Planned investments by 2015</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GaN substrates</strong></td>
<td>• Recorded sales for use in laser diodes</td>
<td>¥15.0 billion</td>
<td>• Expand gas-phase method capabilities by FY2010 20-fold increase vs. FY2010</td>
</tr>
<tr>
<td></td>
<td>• Sales for use in lighting</td>
<td></td>
<td>• Establish new liquid-phase method mass production facilities by FY2015 200-fold increase vs. FY2010</td>
</tr>
<tr>
<td></td>
<td>• The leader in the differentiated technology (m-plane)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phosphors</strong></td>
<td>• Exclusive sales for red phosphor</td>
<td>¥7.0 billion</td>
<td>• Expand production capacity 6-fold increase vs. FY2010</td>
</tr>
<tr>
<td></td>
<td>• Expanding sales for green and yellow phosphors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Module and lighting apparatus:** Supply on OEM basis
- **Chips:** Phase 1 – Expand own capabilities for nUV chips (100 million pieces/month)
  - Phase 2 – Supply on OEM basis (1 billion pieces/month)
- **Strengthening of sales system:** Verbatim brand + M&A of sales companies
White LEDs: Technology Development Roadmap

Achieve cost reductions for high-performance GaN substrates through technological innovation

Current production: Hydride Vapour Phase Epitaxy (HVPE)

- Industrial differentiation technology
  - Increase crystal size
    - c-plane → Higher quality and performance with m-plane
    - Introduce liquid-phase (ammonothermal) method products
    - Collaborate with Prof. Shuji Nakamura (UCSB)
    - Grow 2-inch crystals
      - (Conventional 0.05mm/day → 0.6mm/day As of May 2010)
  - Lower limit of gas-phase method (expected)
    - Increase crystal size
- Laser application
- LED application
- Electronic device application (forecast)


- Grow 2-inch crystals
- Cut 10mm substrate
- 2nd target
- Final target

*Collaborate with Prof. Shuji Nakamura (UCSB)
*Grow 2-inch crystals
(Conventional 0.05mm/day ⇒ 0.6mm/day As of May 2010)
Sustainable Resources: Bio-Engineering Plastic Market Development

Bio-engineering plastic

- Biomass material (isosorbide polycarbonate)
- Excellent transparency, light resistance and surface characteristics
- Produced under the “melt process” developed in our PC business which is environmentally friendly and enables diverse applications
  - 2010: Start operations at pilot plant
    (Sample output in August)
  - 2012: Plan to complete commercial-scale plant
  - 2015: Target production capacity of 20,000 tons

High-performance applications
- Glass substitute
- Optical material
- Chassis/housing
- Light-resistant material
- Layered transparent sheet

Environmentally friendly
- Adheres to laws/regulations
- LCA value
- BPA free

Industrial material, automotive fields

- Electric, electronic fields
- Optical, energy fields

Pilot plant (Kurosaki)

Images
Sustainable Resources:
GS Pla® Market Development

- Expand application by leveraging biodegradability characteristic
- Production technology amassed in polyester business (PET, PBT)
  - Currently producing at small-scale plant (Sales target in FY2010: 2,000 tons)
  - 2013: Commence commercial plant operation
  - 2015: Production capacity target: 20,000 tons
- R&D and practical application of biomass materials
  - 2010: Study on collaboration with PTT Plc. (Thailand)

Agricultural sector

Launched in April 2010

- Neat resin
- Starch compounds

Paper lamination

- Cultivating applications for catering industry
- 50% biomass products

Grade development

- Polymer alloy with other materials and biomass products
- Biodegradable test
- Using GS Pla®
- Using polyethylene
Leap Ahead (M&A) Strategy Progress

Accelerate portfolio restructuring by forging ahead (M&A)
Net sales increase approx. ¥630.0 billion and operating income approx. ¥35.0 billion (FY2010)

Invest approx. ¥250.0 billion in M&A

Current Status of Strategic Investment

<table>
<thead>
<tr>
<th>Company</th>
<th>Detail</th>
<th>Timing of implementation</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUADRANT</td>
<td>Became a consolidated subsidiary through TOB by AQUAMIT*</td>
<td>September 2009</td>
<td>Strengthen functional product business</td>
</tr>
<tr>
<td>NSCI</td>
<td>Became a consolidated subsidiary</td>
<td>September 2009</td>
<td>Strengthen specialty chemicals business</td>
</tr>
<tr>
<td>Taiyo Nippon Sanso</td>
<td>Became an equity-method affiliate</td>
<td>September 2009</td>
<td>Strengthen businesses related to performance product businesses</td>
</tr>
<tr>
<td>MRC</td>
<td>Became a consolidated subsidiary through TOB To be a wholly-owned subsidiary through share exchange</td>
<td>March 2010 Scheduled for October 2010</td>
<td>Expand corporate scale and growth businesses and accelerate global business development</td>
</tr>
</tbody>
</table>

*Joint venture between group of founders of MPI and QUADRANT

Current Status of Non-Strategic Investment

MCC: Acquisition of Freecom, capital and business alliance with Pioneer, investment in OPV business
MTPC: Investment in Cytochroma, capital and business alliance with Choseido Pharmaceutical

**MCC:** Investment in white LEDs, OPV business, and LiB materials for HEVs

¥15.0 billion

¥45.0 billion (plan)
Synergy Summary

- Aim to achieve cost synergies of ¥3.0 billion and business operation synergies of ¥7.0 billion by FY2012
- Conduct examination for both companies to pursue synergies on a continuing basis with the aim of achieving further effects

Reference regarding announcement of management integration with MRC on November 19, 2009

By FY2012, realize:

- **Cost synergies**
  (Share infrastructure for logistics, procurement, and other areas)
  → ¥3.0 billion or more

- **Business synergies**
  (Water treatment, carbon fibers, and specialty chemicals)
  → ¥7.0 billion or more

- **R&D synergies**
  → +α
Secure cost synergies worth ¥3.0 billion or more by FY2012 by sharing infrastructure, clarify potential synergies among operating companies, and start planning concrete measures

Potential synergies from sharing infrastructure among operating companies:

<table>
<thead>
<tr>
<th>Principal infrastructure</th>
<th>Areas examined for synergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics</td>
<td>Consolidate common bases and raise efficiency of transport operations</td>
</tr>
<tr>
<td>Procurement</td>
<td>Joint purchasing of engineering-related materials, packaging materials, indirect materials, and others</td>
</tr>
<tr>
<td></td>
<td>Increase purchases of raw materials and products within the Group</td>
</tr>
<tr>
<td>Systems</td>
<td>Reduce costs by sharing information systems</td>
</tr>
</tbody>
</table>

- **Logistics costs**
  - MTPC: 2%
  - MCC: 18%
  - MRC: 8%
  - MPI: 10%
  - Others: 62%
  - Total amount approx. ¥110.0 billion

- **Materials costs**
  - Mitsubishi Chemical Engineering: 39%
  - Kyowa Business: 18%
  - MRC: 13%
  - MPI + MTPC: 11%
  - Indirect materials, others: 3%
  - Total engineering materials: 86%
  - Total amount approx. ¥190.0 billion
## Business and R&D Synergies

Aim to secure ¥7.0 billion or more in cost reductions through business and R&D synergies in FY2012. Clarify potential synergies among operating companies and start planning concrete measures.

### Today’s topics

<table>
<thead>
<tr>
<th>Segment</th>
<th>Potential synergy areas</th>
<th>Study examples</th>
</tr>
</thead>
</table>
| Designed Materials | Specialty chemicals | • Collaborate in light curing resins and resin additives  
• Collaborate in water-based emulsions (effective utilization of manufacturing, sales, and R&D resources) |
|     | Businesses engaging in similar areas | • Collaborate in food ingredients and environmental analysis business |
|     | Display-related film field | • Collaborate in materials for FPD front plates  
• Develop optical materials through the use of MRC’s optical design technologies |
|     | Plastic sheet business | • Strengthen product lineup and sales routes |
| Polymers | CF composites | • Collaborate in industrial applications, automotive fields (drive shafts, structural materials fields), and other fields |
| Health Care | Water treatment membranes and equipment for medical care | • Utilize domestic and overseas sales bases |
| Chemicals | R&D in industrial materials domain | • Improve productivity through catalyst improvements and enhanced process efficiency by utilizing technology platforms of MCC and MRC |
| Polymers | Market competitiveness by utilizing mutual sales channels | • Develop the market for performance polymers and strengthen technology development |
| Others | Water treatment and engineering businesses | • Strengthen water treatment business  
• Raise business efficiency through engineering integration |
Organize the Aqua Business Bloc at MRC in July 2010 and restructure and integrate water treatment businesses of MCC and MRC and engineering businesses in October 2010.

**Example of Business Synergies: Water Treatment and Engineering Businesses**

**MCHC**

**MCC**
- Mitsubishi Chemical Engineering
- Nippon Rensui

**MRC**
- Mitsubishi Rayon Engineering
- Mitsubishi Rayon Cleansui

**Strengthen engineering technologies**

**Comprehensive engineering company:**
- To be inaugurated in October 2010

**Engineering business**
- Contracting division
- External sales division
- Facilities management and maintenance

**Comprehensive water solutions business**

**Aqua Business Bloc:**
- To be organized in July 2010

**Water treatment-related business**
- Water treatment membrane
- CLEANSUI
- Pure water
- Ultra-pure water
- Flocculants
- Operation & maintenance

**Cooperation**

Synergies among Operating Companies

Example of Business Synergies:
Water Treatment and Engineering Businesses
Example of business synergies: Specialty Chemicals

Example of synergies in specialty chemicals:
Gain market competitiveness in new water-based coating materials

**MRC strengths**
- **Technology**
  - DIANAL (acrylic design)
  - Coating formulation, Coating evaluation
- **Production**
  - Large, specialized facilities
  - Global bases
- **Sales**
  - Secure existing business
  - Market-in approach

**MCC strengths**
- **Technology**
  - APTOLOK (PP self-emulsification)
  - MITEC (urethane design)
  - Analysis
- **Production**
  - Diversified, small lot to semi-mass-production
  - Extruded emulsification
- **Sales**
  - Independent route
  - Detailed MTS (Market Technical Service)

**Market Forecast**

<table>
<thead>
<tr>
<th>(Billions of yen)</th>
<th>2008</th>
<th>...2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject of synergy study

- Personal care resins
- Functional film materials
- Non-halogen
- Functionalization
- Emulsions
- UV

Composition

Substantial increase in water content ratio

(Automobile interior and exterior plastic coating)

(Restore and integrate
Share, newly apply)

(Dirt shedding coating for building exteriors)

Strengthen through integration

New proposals
New production methods

Automobile interior and exteriors
Building exteriors

Subject of synergy study

Mitsubishi Chemical Holdings Corporation
R&D Synergies

Make efficient use of management resources by integrating and consolidating overlapping/related themes while bringing together the strong fields in each company and dramatically raising technology levels.

- **Specialty chemicals**
  - Coating materials, emulsions, UV material, and others
- **Fundamental technologies**
  - Catalyst technology, biotechnology, materials analysis, and production technology

- **Carbon fiber/composite materials**
- **Film sheets**
  1) Use acrylic materials
     - Combine acrylic materials that have superior weather resistance
  2) Provide surface functions
     - Precision forming, coating
- **Fundamental technologies**
  - Molding processing, forming technologies, technologies for surface functionalization

- **Fields that fuse pharmaceuticals and diagnosis**
  1) R&D on biomarkers
  2) Development of cerebral infarction markers and cancer markers
  3) Fundamental technologies
     - Proteomics/metabolomics, Health information technology

Based on actual results of consolidated R&D expenditures in FY2009 (Billions of yen)

- MTPC 88.7
- MRC 14.9
- MCC 39.4
- MPI 8.7
**“Climate Change and Natural Resources”**
- Concern about rising cost and depletion of fossil resources will grow.
- Climate change will worsen.
- Will see development of the utilization of CO₂ as a carbon resource.
- Depletion will cause hoarding of natural resources and competition will intensify.
- More contamination and greater shortage of water resources.
- Ecosystems will be destroyed.

Chemical businesses that consume significant fossil resources will undergo a shakeout, and only those that contribute to renewable resources, energy, and the environment will prosper.

**“Health Care”**
- Low birth rate and aging population in developed nations and China, etc., will lead to collapse of healthcare insurance systems.
- Regenerative medicine and robotic equipment will be widely used as lifespan continues to expand.
- Advanced diagnostic technology and information technology will bring about use of remote medical care and robotics in medicine.
- The need for advanced personalized medicine will increase.

Health care will shift to personalized medicine because the traditional blockbuster sales model will disappear, etc.

**“Economy & Markets”**
- Asia will become center of global economy (China and India).
- Three key currencies will be U.S. dollar, Euro, and Yuan.
- Market economy principles will shift to those driven by controls, regulations, and national interest.
- Competition among nations will divide the global economy into blocks.
- Combining industries will accelerate.

There will be a major global reorganization in each business domain, notably Asian companies, especially in China and India.
MCHC corporate value is the sum of traditional corporate value and KAITEKI value.

**MCHC Corporate Value**

- Traditional fundamental corporate value
  - Operating income
  - Growth rate
  - ROA
  - ROE
  - Sales
  - Profit ratio

- KAITEKI
  - Sustainability (Environment, Resources)
  - Health
  - Comfort

**MCHC Group Businesses**
APTSIS 15: Formation of KAITEKI Indices

Clarify indices for a KAITEKI society and link with business

**KAITEKI society in 20-50 years**

- Ubiquitous information networks
- Infrastructure for future society
- Increased functionality of clothing, food, and housing

**What we aspire to be in 2025**

- Switch to sustainable resources and energy
- Minimize burden on the environment
- Preventive medicine
- Personalized medicine
- Medical care for an aging society

**KAITEKI indices looking toward 2025**

- Discussion of candidate indices

**Link between business and indices**

**Contribute to**

- Comfort
- Sustainability (Environment, Resources)
- Health

**MCHC Group Businesses**

- Preventive medicine
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**APTSIS 15: Basic Policy**

**Name:** APTSIS 15

**Period:** Five years from FY2011 to FY2015
   - Phase 1: FY2011 - FY2012
   - Phase 2: FY2013 - FY2015

**What we aspire to be in 2015**
- MCHC corporate value: Plan to announce numerical targets
  (Basic indices + KAITEKI indices)
- **Target**
  - Net sales: ¥4.7 trillion
  - Operating income: ¥400.0 billion
  - Overseas sales ratio: 45% or higher
Sustainable Development of Our Company and the World

Proposal of “Management of Sustainability” (MOS Axis)

*Financial Capitalism = Shareholder Capitalism + Market-driven Capitalism
Our Aspirations

Realizing **KAITEKI**

**Business Domains**

- Daily Necessities
- Information & Electronics
- Medicine
- Environment
- Energy

**Decision Criteria for Corporate Activities**

- Sustainability
- Health
- Comfort

**Group Philosophy**

*Announcement of APTSIS 15 planned on December 8, 2010*
The forward-looking statements are based largely on information available as of the date hereof, and are subject to risks and uncertainties which may be beyond company control. Actual results could differ largely, due to numerous factors, including but not limited to the following: Group companies execute businesses in many different fields, such as petrochemicals, carbon and inorganic products, information and electronics, pharmaceuticals, polymers and processed products, and these business results are subjected to influences of world demands, exchange rates, price and procurement volume of crude oil and naphtha, trend of market price, speed in technology innovation, National Health Insurance price revision, product liabilities, lawsuits, laws and regulations.