The Mitsubishi Chemical Holdings Group
Mid-term Management Plan
(FY2011 - FY2015)

APTSIS 15

Presentation to Investors

December 8, 2010

Yoshimitsu Kobayashi
President & Chief Executive Officer
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 information and electronics, performance products, polymers and processed products, pharmaceuticals, carbon and inorganic products, petrochemicals, 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.
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.
MCMC: Mitsubishi Chemical Medience Corporation
Review of the former mid-term management plan, 
**APTSIS 10** (FY2008 - 2010)

The new mid-term management plan, 
**APTSIS 15** (FY2011-2015)

‘Grow, Innovate, and Leap Ahead by orchestrating the Group strengths’

1. Aspiration 2025 and Goal 2015
2. Basic Strategies and Initiatives
3. Enhancing Shareholder Value and Corporate Value
4. Introduction of **KAITEKI** indexes

**Agenda**

FY2008-2010: April 2008 - March 2011

‘Respond to economic contraction by business reform, accelerating innovation, and leaping ahead ’
Operating Results under **APTSIS 10**

**Sharp recovery by structural reforms and leaping ahead**

**Recovering Strength**
- Interest-bearing debt reduction
- Restructuring of loss-generating businesses

**Building Foundation for Growth**
- Established MCHC
- Active capital and R&D investment
- Merger of pharmaceutical business
- TOB of Mitsubishi Plastics
- Integrated performance materials business

**Recover from economic contraction**
- Integrated MRC
- Responded to economic contraction
- Restructured businesses

**KAKUSHIN Plan: Phase 1**
- Interest-bearing debt reduction
- Restructuring of loss-generating businesses

**KAKUSHIN Plan: Phase 2**
- TOB of Mitsubishi Plastics

**Earnings** (Billions of yen)

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating income</th>
<th>ROA (%)</th>
<th>D/E ratio</th>
<th>Net D/E ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2003</td>
<td>98.2</td>
<td>3.4</td>
<td>2.2</td>
<td>0.95</td>
</tr>
<tr>
<td>FY2004</td>
<td>149</td>
<td>5.3</td>
<td>1.6</td>
<td>0.75</td>
</tr>
<tr>
<td>FY2005</td>
<td>134</td>
<td>5.6</td>
<td>0.98</td>
<td>1.06</td>
</tr>
<tr>
<td>FY2006</td>
<td>129</td>
<td>6.1</td>
<td>1.04</td>
<td>1.06</td>
</tr>
<tr>
<td>FY2007</td>
<td>125</td>
<td>8.5</td>
<td>0.99</td>
<td>1.06</td>
</tr>
<tr>
<td>FY2008</td>
<td>8</td>
<td>(1.5)</td>
<td>1.55</td>
<td>1.77</td>
</tr>
<tr>
<td>FY2009</td>
<td>66</td>
<td>1.4</td>
<td>2.16</td>
<td></td>
</tr>
<tr>
<td>FY2010*</td>
<td>203</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*forecasts

**Net sales** (Billions of yen)

- FY2003: 1,925.3
- FY2004: 2,189.5
- FY2005: 2,408.9
- FY2006: 2,622.8
- FY2007: 2,929.8
- FY2008: 2,909.0
- FY2009: 2,515.1
- FY2010*: 3,190.0

**Net income**

- FY2003: 34.5
- FY2004: 55.4
- FY2005: 85.6
- FY2006: 78.5
- FY2007: 100.3
- FY2008: 125.0
- FY2009: 46.0
- FY2010*: 8.2

**After adjusting extraordinary items**

- FY2003: 100.3
- FY2004: 128.6
- FY2005: 164.1
- FY2006: 125.0
- FY2007: 46.0
- FY2008: -67.2
- FY2009: 12.8
- FY2010*: 75.0
### Comparison of the targets and FY2010 forecasts

<table>
<thead>
<tr>
<th></th>
<th>Targets for the final year of <strong>APTSIS 10</strong></th>
<th>FY2010 forecasts*</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronics Applications</td>
<td>14**</td>
<td>4</td>
<td>(10)</td>
</tr>
<tr>
<td>Designed Materials</td>
<td>38**</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>Health Care</td>
<td>100</td>
<td>77</td>
<td>(23)</td>
</tr>
<tr>
<td>Chemicals</td>
<td>29</td>
<td>44</td>
<td>15</td>
</tr>
<tr>
<td>Polymers</td>
<td>21</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>Others</td>
<td>16</td>
<td>3</td>
<td>(13)</td>
</tr>
<tr>
<td>Corporate</td>
<td>(8)**</td>
<td>(8)</td>
<td>0</td>
</tr>
<tr>
<td>Contingency</td>
<td>(20)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>190</td>
<td>203</td>
<td>13</td>
</tr>
</tbody>
</table>

* FY2010 forecasts: Performance Products: 20%; Health Care 37%; Industrial Materials 42%; Others 1%

** Targets for the final year of **APTSIS 10** have been recalculated according to FY2010 segmentation

### Ref. Results of Growth & Innovation Strategies (not including Leaping Ahead (M&A))

<table>
<thead>
<tr>
<th></th>
<th>FY2010 estimates</th>
<th>Change vs. targets for the final year of <strong>APTSIS 10</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronics Applications</td>
<td>4</td>
<td>(10)</td>
</tr>
<tr>
<td>Designed Materials</td>
<td>22</td>
<td>(16)</td>
</tr>
<tr>
<td>Health Care</td>
<td>77</td>
<td>(23)</td>
</tr>
<tr>
<td>Chemicals</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td>Polymers</td>
<td>16</td>
<td>(5)</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>(13)</td>
</tr>
<tr>
<td>Corporate</td>
<td>(8)</td>
<td>0</td>
</tr>
<tr>
<td>Contingency</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>154</td>
<td>(36)</td>
</tr>
</tbody>
</table>
Strategic Investments for Leaping Ahead

Strategic investment (M&A, etc.) accelerated portfolio reforms, increased net sales by ¥640 billion and operating income by ¥49 billion (FY2010 forecasts)

### Major Strategic Investments for Leaping Ahead (approx. ¥250 billion)

<table>
<thead>
<tr>
<th>Action taken</th>
<th>Implementation</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidation of Quadrant through a tender offer of AQUAMIT*</td>
<td>September 2009</td>
<td>Strengthen performance product business</td>
</tr>
<tr>
<td>Consolidation of Nippon Synthetic Chemical Industry</td>
<td>September 2009</td>
<td>Strengthen specialty chemicals business</td>
</tr>
<tr>
<td>Affiliation by equity method of Taiyo Nippon Sanso</td>
<td>September 2009</td>
<td>Strengthen performance product business</td>
</tr>
<tr>
<td>Implementation of tender offer and share exchange to consolidate and wholly own MRC</td>
<td>March 2010 October 2010</td>
<td>Expand global business domain and product portfolio</td>
</tr>
</tbody>
</table>

* Joint venture between MPI and Quadrant founders

### Investments for Growth Strategy (¥15 billion)

MCC: Acquired Freecom, formed capital and business alliance with Pioneer, and invested in OPV modules business
MTPC: Invested in Cytochroma and formed capital & business alliance with Choseido Pharmaceutical
# Restructuring of Businesses

## Accelerated Structural Reforms

<table>
<thead>
<tr>
<th>Restructuring of Businesses (withdrawal &amp; operational restructuring)</th>
</tr>
</thead>
</table>
| **MCC** Petrochemicals | * SM/Derivatives  
* PVC/VCM  
* Caprolactam/Nylon  
* Surfactants  
* PTA |
| **Performance Products** | * Phosphors  
* Epoxy resins  
* Fertilizers  
* Activated carbon  
* Inorganic chemicals |
| **MTPC** | * Consolidations of production and service companies  
* Consolidations of locations |
| **MPI** Industry & Life Infrastructure | * Pipe materials  
* Agricultural materials |
| **MRC** Fibers | * Production consolidation of acetate filament yarns |

Withdrawal from unprofitable businesses*

* Net sales: ¥320 billion  
Operating income: (¥17 billion)

Accumulated extraordinary loss: ¥17 billion

JV shall be established in April 2011 to unify naphtha cracker operations of MCC and Asahi Kasei Chemicals in Mizushima

Text in blue: restructuring for strengthening operations

**Fixed cost reduction by ¥32 billion** (FY2010 forecasts)
Basic Strategies and Results

Respond to economic contraction by business reform, accelerating innovation, and leaping ahead

Basic concept of APTSIS 10

Growth Strategy
- Focus on Growth Business
  - FPD components
  - Pharmaceuticals
- Structural reforms
  - Main focus on petrochemicals
  - Significant reduction in CAPEX

Innovation Strategy
- Focused acceleration
  - White LEDs
  - Lithium-ion battery materials for hybrid electric vehicles

Leaping ahead (M&A)
- Prompt realization
  - Quadrant
  - Nippon Synthetic Chemical Industry
  - Taiyo Nippon Sanso
  - MRC

Strategic initiatives under APTSIS 10

- Integrated with MRC
- Steady structural reforms
- Agreed to establish JV to unify naphtha cracker operations of MCC and Asahi Kasei Chemicals in Mizushima

Management index | APTSIS 10 targets | FY2010 forecasts
--- | --- | ---
Operating income | ≥ ¥190 billion | ¥203 billion
ROA | ≥ 6% | 4.6%
GHG emission reductions | ≥ 20% reduction by 2015 | as planned

Despite the severe economic contraction, restructuring of businesses and M&A led to achieving targeted operating income.
Passing Baton from APTSIS 10 to APTSIS 15

Overall
- Strengthen financial position and reduce assets
- Generate integration synergies with MRC
- Address and prevent recurrences of compliance issues

Electronics Applications
- Accelerate business growth in white LED lighting and materials
- Accelerate commercialization of organic photovoltaic modules & materials and organic photo semiconductor businesses

Designed Materials
- Accelerate business growth in lithium-ion battery materials
- Expand functional composite materials business

Health Care
- Approval of late stage pharmaceutical products and favorable growth of new products
- Accelerate global business growth
- Enrich pharmaceutical pipeline beyond APTSIS 15

Chemicals
- Continue restructuring, including Mizushima’s ethylene center
- Maintain stable earnings and operation

Polymers
- Shift to high-performance, high-value-added products
- Global operation
Mid-term Management Plan (FY2011 – 2015)

APTSIS 15

‘Grow, Innovate, and Leap Ahead by orchestrating the Group strengths’
Aspirations 2025 and Goals 2015
### Paradigm shift – More challenging market landscape

<table>
<thead>
<tr>
<th>Environment and resources</th>
<th>Health and Medicine</th>
<th>Economies and markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Decreasing dependence on fossil fuels</td>
<td>✓ Aging population in advanced countries &amp; China, and weakening of social healthcare insurance systems in USA, EU &amp; Japan</td>
<td>✓ Shift of global economy focus to Asia (China &amp; India)</td>
</tr>
<tr>
<td>✓ Greater climate change</td>
<td>✓ Regenerative medicine and telemedicine</td>
<td>✓ Reserve currency: dollar, euro, yen, and RMB</td>
</tr>
<tr>
<td>✓ Using carbon dioxide as raw materials</td>
<td>✓ Robotics and medical care robots</td>
<td>✓ Shift of market economy principles to more controlled, restricted, and economic nationalism</td>
</tr>
<tr>
<td>✓ Depletion and competition for natural resources</td>
<td>✓ Highly personalized healthcare</td>
<td>✓ Shift of competition from among countries to ‘economic blocks’</td>
</tr>
<tr>
<td>✓ Water pollution and shortages</td>
<td></td>
<td>✓ Industrial integration</td>
</tr>
<tr>
<td>✓ Restricted access to water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Ecosystem destruction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Chemical companies that sufficiently contribute to renewable resources and energy, and the environment will only exist**

- **Aging population triggers shift to personalized and diversified healthcare solutions, giving patients access to safer, more effective treatment options**

- **In all business fields, Chinese, Indian, and other Asian players are transforming the international landscape**
At Mitsubishi Chemical Holdings Group companies, we are committed to run our business in a way that delivers “KAITEKI” solutions by putting infinite potential of ‘Good Chemistry’ to work.

Three decision criteria for corporate activities

- Sustainability
- Health
- Comfort
Our Corporate value is the sum of economic and KAITEKI values

KAITEKI is an integral part of the way we do our businesses

Mitsubishi Chemical Holdings Corporation
## Goals 2015

### Targets for enhancing corporate value

<table>
<thead>
<tr>
<th>Economic Indexes</th>
<th>FY2012</th>
<th>FY2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating income</td>
<td>¥230 billion</td>
<td>¥400 billion</td>
</tr>
<tr>
<td>Growth &amp; Innovation Strategies</td>
<td></td>
<td>¥330 billion</td>
</tr>
<tr>
<td>Leaping ahead (M&amp;A)</td>
<td></td>
<td>¥70 billion</td>
</tr>
<tr>
<td>ROA (income before income taxes)</td>
<td></td>
<td>≥ 8%</td>
</tr>
<tr>
<td>Net debt-to-equity ratio</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Overseas sales ratio</td>
<td></td>
<td>≥ 45%</td>
</tr>
</tbody>
</table>

### Sustainability Index
- Environmental impact
  - reduce by 30% (Japan) vs. FY2005 (17% reduction of GHG)

### Health Index
- Index derived by the degree of difficulty to treat diseases & the number of administered patients
  - increase by 30% vs. FY2009

### Comfort Index
- New products ratio in the Performance Product & the Health Care domains
  - ≥ 35%
Shift to high-performance products and high-value-added business portfolio

Vision 2015 Revenues and Operating Income

Operating Income

¥ 203 billion

Industrial Materials ¥ 89 billion
Performance Products ¥ 42 billion
Health Care ¥ 77 billion

¥ 230 billion

Industrial Materials
Performance Products
Health Care
Leaping Ahead

¥ 400 billion*
* including ‘Leaping Ahead (M&A)’

FY2010 forecast
Net sales : ¥3.2 trillion

FY2012
Net sales : ¥3.6 trillion

FY2015
Net sales : ¥5.0 trillion
APTSIS 15
Strategies and Initiatives
### Assumptions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global economy</td>
<td>Emerging countries driving growth; advanced nations only expanding slowly</td>
</tr>
<tr>
<td>Naphtha price</td>
<td>Naphtha Price: FY2011 - 2012 ¥50,000/kl</td>
</tr>
<tr>
<td></td>
<td>FY2013 - 2015 ¥55,000/kl</td>
</tr>
<tr>
<td>FOREX</td>
<td>¥80/US$</td>
</tr>
<tr>
<td>Intensifying competition</td>
<td>Prioritize in the areas in which we can display our leadership</td>
</tr>
<tr>
<td>in environment &amp; energy businesses</td>
<td></td>
</tr>
<tr>
<td>Medical environment</td>
<td>Biennial drug price revisions and expansion of generics to reduce medical expenditure</td>
</tr>
<tr>
<td>Petrochemicals supply-demand balance</td>
<td>Excess supply, as facilities expanded abroad particularly in Middle East and China, entering in Japanese market</td>
</tr>
</tbody>
</table>
## Business Portfolio

Categorized by profitability, market presence & attractiveness

<table>
<thead>
<tr>
<th>Next-generation Growth Business (6)</th>
<th>Growth Business (11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic photovoltaic modules and materials</td>
<td>White LED lighting and materials</td>
</tr>
<tr>
<td>Organic photo semiconductors</td>
<td>Lithium-ion battery materials</td>
</tr>
<tr>
<td>Advanced performance products</td>
<td>FPD components</td>
</tr>
<tr>
<td>Agribusiness solutions</td>
<td>Performance composite materials</td>
</tr>
<tr>
<td>Healthcare solutions</td>
<td>High performance molding products</td>
</tr>
<tr>
<td>Sustainable resources</td>
<td>Specialty chemicals</td>
</tr>
</tbody>
</table>

**Contribution to operating income from growth Business**

- **64%**
- FY2010

<table>
<thead>
<tr>
<th>Business to be restructured (15)</th>
<th>Cash-generating Business (18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha crackers, etc.</td>
<td>Recording media</td>
</tr>
<tr>
<td></td>
<td>Performance films</td>
</tr>
<tr>
<td></td>
<td>Food ingredients</td>
</tr>
<tr>
<td></td>
<td>Diagnostics &amp; support for new pharmaceutical development</td>
</tr>
<tr>
<td></td>
<td>Terephthalic acid</td>
</tr>
<tr>
<td></td>
<td>Coke</td>
</tr>
<tr>
<td></td>
<td>PHL/BPA/PC</td>
</tr>
<tr>
<td></td>
<td>PP</td>
</tr>
</tbody>
</table>
# Strategies

## Grow, Innovate, and Leap Ahead by orchestrating the Group strengths

<table>
<thead>
<tr>
<th>Strengthening Fundamentals</th>
<th>Generate synergies, improve financial position, and reform business structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Strategy</td>
<td>• Accelerate transformation to deliver high-performance products and high-value-added businesses</td>
</tr>
<tr>
<td></td>
<td>• Expand green businesses</td>
</tr>
<tr>
<td></td>
<td>• Develop new medicines to fulfill unmet medical needs</td>
</tr>
<tr>
<td></td>
<td>• Operate globally</td>
</tr>
<tr>
<td></td>
<td><strong>Deliver KAI TEKI solutions by pursuing Sustainability, Health, and Comfort</strong></td>
</tr>
<tr>
<td>Innovation Strategy</td>
<td>Build new businesses for the future</td>
</tr>
<tr>
<td>Leaping Ahead (M&amp;A)</td>
<td>Invest strategically in alliances and acquisitions</td>
</tr>
</tbody>
</table>
Growth Strategy

Accelerate transformation to high-performance and high-value-added business portfolio by orchestrating the Group strengths

◆ Performance Products
  - Expand high-performance and high-value-added businesses by integrating key technologies and know-how
  - Expand green businesses
  - Accelerate global expansion

◆ Health Care
  - Strengthen sales of current major products by LCM *
  - Maximize profit by new ethical drugs and increase approved products in USA, EU and China
  - Strengthen pipeline to fulfill unmet medical needs

◆ Industrial Materials
  - Globalize operations and accelerate increasing value-added product ratio (strengthen ties with regional partners)
  - Balanced growth with product chain optimization
  - Complete restructuring in Japan
Strategy for Innovation

Accelerate launch of next growth drivers

Challenge the changing market landscape

**Timeline**

- White LED lighting and materials
- Lithium-ion battery materials for HEVs
- OPV modules and materials
- Organic photo semiconductor
- Sustainable resources
- Advanced performance products
- Healthcare solutions
- Healthcare solutions
- Agribusiness solutions

**Chemical components for vehicles**

*food, water, housing, and apparel
Invest decisively to grow and innovate

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>1,000</td>
<td>420</td>
<td>580</td>
</tr>
<tr>
<td>(Cash Flow-base)</td>
<td>(940)</td>
<td>(340)</td>
<td>(600)</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>750</td>
<td>280</td>
<td>470</td>
</tr>
</tbody>
</table>

(Billions of yen)

**Investments and R&D**

- **Electronics Applications**: 120 (Billions of yen) 70 190 (11%)
- **Designed Materials**: 150 (Billions of yen) 320 460 (27%)
- **Health Care**: 150 (Billions of yen) 410 560 (32%)
- **Chemicals**: 120 (Billions of yen) 30 150 (9%)
- **Polymers**: 90 (Billions of yen) 200 260 (14%)
- **Corporate, etc.**: 40 130 (7%)
Leaping Ahead (M&A)

Strategically allocate resources in alliances and acquisitions to expand businesses

Priorities:
- Strengthen Growth and Next-generation Growth Businesses
- Accelerate global expansion
- Performance Products and Health Care domains
Performance Products
Performance Products - Strategies

Accelerate launch of green businesses, pursue further value-addition, and reach out to global markets

**Growth Strategy**
- Expand high-performance and high-value-added businesses
  - Performance composite materials, high performance molding products, specialty chemicals
- Expand green businesses
  - White LED lighting and materials; lithium-ion battery materials
- Accelerate global expansion
  - FPD components, water treatment system and services

**Innovation Strategy**
- Building & expanding new businesses for the future
  - OPV modules and materials, organic photo semiconductors, advanced performance products, agribusiness solutions

**Cash-generating Business**
- Increase profit steadily
  - Recording media, performance films, food ingredients
**Growth Strategy (1)**

**Expand high performance & value-added businesses**

### Designed Materials

- **Performance composite materials**
  - **Net Sales:** ¥42 billion (FY2010) → ¥110 billion (FY2015)
  - The industry top group
  - Expand high-performance composites and component businesses by integrating technologies in pitch-based/PAN-based carbon fibers and thermoplastics
  - Expand capacity

<table>
<thead>
<tr>
<th>Global market size</th>
<th>Total CF</th>
<th>Unit: ton/y</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2010</td>
<td>FY2015</td>
<td></td>
</tr>
<tr>
<td>MCHC Gr.'s production capacity</td>
<td>CF-PAN</td>
<td>7,400</td>
</tr>
<tr>
<td>CF-Pitch</td>
<td>1,000</td>
<td>1,450</td>
</tr>
</tbody>
</table>

- Strengthen alumina fiber business with continued top mkt share (MAFTEC for automobile emission controls and heat insulating application in steel furnaces etc.)

### High performance molding products

- **Net Sales:** ¥55 billion (FY2010) → ¥80 billion (FY2015)
  - Expand business in automotive, semiconductor, food processing, and energy sectors by delivering products w/ integrated technologies in engineering plastics, resins, carbon & glass fibers
  - Extend operation from Europe to China and Asia

### Specialty chemicals

- **Net Sales:** ¥73 billion (FY2010) → ¥110 billion (FY2015)
  - Expand coating materials for automotive and motorcycle in China, Indonesia, and Thailand
  - Ramp up capacity to 10,000 t/y by FY2015
  - Strengthen environment-friendly water-borne emulsion business
  - Expand UV curable coating materials business
  - Expand epoxy resin businesses for semiconductors

Mitsubishi Chemical Holdings Corporation
### APTSIS 15: Performance Products

#### Growth Strategy (2)

**Electronics Applications**

**White LED lighting & materials**
- **Net Sales:** ¥14 billion (FY2010) → ¥100 billion (FY2015)
- **Global leader in FY2015**
- Market leader in GaN substrates, phosphors, and encapsulant
- Market creation of KAIKEKI lighting globally
- New liquid phase production facilities: boost capacity 200-fold by FY2015
- Global target market shares in FY2015:

<table>
<thead>
<tr>
<th>FY2015 targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>GaN substrate</td>
</tr>
<tr>
<td>Phosphors</td>
</tr>
<tr>
<td>Encapsulants &amp; packaging materials</td>
</tr>
</tbody>
</table>

**Designed Materials**

**Lithium-ion battery materials**
- **Net Sales:** ¥17 billion (FY2010) → ¥80 billion (FY2015)
- **Global leader in FY2015**
- Start global operation in JPN, EU, USA, and China for HEVs and EVs
- Global target share in FY2015 and production capacity expansion by FY2015:

<table>
<thead>
<tr>
<th>FY2015 targets</th>
<th>FY2010</th>
<th>FY2015 targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrolytes</td>
<td>8,500 t/y</td>
<td>50,000 t/y</td>
</tr>
<tr>
<td>Anodes</td>
<td>3,000 t/y</td>
<td>35,000 t/y</td>
</tr>
<tr>
<td>Cathodes</td>
<td>600 t/y</td>
<td>15,000 t/y</td>
</tr>
<tr>
<td>Separators</td>
<td>12 million m²/y</td>
<td>72 million m²/y</td>
</tr>
</tbody>
</table>
**Growth Strategy (3)**

**Accelerate global operation**

### Designed Materials

**FPD components**

- **Net Sales:** ¥103 billion (FY2010) ➔ ¥190 billion (FY2015)
- **Global top**
  - Expand business in China (panel assembly for FPD shift to China from Japan, Korea, and Taiwan)
    - panel market volume: 95 million m2/y (FY2010) ➔ 140 million m2/y (FY2015, estimated)
    - increase capacity in OPL film; set up PET film production facility in China (FY2013); and increase capacity in acrylic resin plate for light guiding plate application
  - Sustain market share by ensuring competitive quality and cost
    - expected market share in FY2015

<table>
<thead>
<tr>
<th>OPL film for LCD</th>
<th>PET film</th>
<th>Acrylic sheet*</th>
<th>RGB resists</th>
<th>Adhesive sheet for touch panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>40%</td>
<td>20%</td>
<td>25%</td>
<td>40%</td>
</tr>
</tbody>
</table>

* dominant share in large light guide plate; 60% share in MMA light guide plate applications

### Water treatment system & services

- **Net Sales:** ¥27 billion (FY2010) ➔ ¥70 billion (FY2015)
  - Expand industrial wastewater reclamation business using MBR (membrane bioreactor) process in China and Southeast Asia with competitive PVDF membranes
    - production increase in China for membranes and units
    - alliance with engineering companies in major areas in China
  - Expand global sales of CLEANSUI in China and Asia

---

Mitsubishi Chemical Holdings Corporation

*Good Chemistry for Tomorrow*
### Innovation Strategy

**Building and expanding new businesses for the future**

#### OPV modules and materials
- Target net sales: ¥50 billion (FY2015)
- Accelerate new market creation of OPV modules for building- and automotive-integrated photovoltaics and enter the market (FY2012)
- Improve performance of OPV cell efficiency from 12% (FY2012) to 15% (FY2015)
- Target 30% market shares for materials such as barrier films and sealants

#### Organic photo semiconductor
- Target net sales: ¥30 billion (FY2015)
- Launch ‘evaporated OLED Lighting’ (FY2011) and pre-market high-end lightings
- Commercialize mass produced ‘solution OLED device’ (FY2014)

#### Advanced performance products
- Target net sales: ¥20 billion (FY2015)
- Deliver products for automobile, energy, environment & industrial markets
  - Gas diffusion layer for fuel cell, CFRTP (Carbon Fiber Reinforced Thermo Plastics) prepreg, large size fiber composites, moth’s eyes film (non-reflection), AQSOA

#### Agribusiness solutions
- Target net sales: ¥10 billion (FY2015)
- Deliver cost competitive plant production system & materials (including plants for medicinal use)
- Research in water-saving agricultural system
APTSIS 15: Performance Products

Cash-generating Business

Electronics Applications

Recording media

- Net Sales  ¥74 billion (FY2010)  ➔  ¥100 billion (FY2015)
- Global top
  ✓ Target ‘total storage media’ top brand (Verbatim)
     - target market share in FY2015: optical discs 20%; HDD etc. 10%
     - be a market leader in organic dye-based blu-ray disc

  (Enter in LED lighting business and expand by taking advantage of Verbatim sales channel*)

  * LED lighting earnings not included in net sales

Designed Materials

Performance films

- Net Sales  ¥53 billion (FY2010)  ➔  ¥70 billion (FY2015)
- Stable earnings in food packaging business by rationalization
- Reach out to new markets in non-food applications
  - medical applications; batteries, and alcohol beverage

Food ingredients

- Net Sales  ¥15 billion (FY2010)  ➔  ¥30 billion (FY2015)
- Start compounding ingredients business in China w/ unique emulsifiers as key materials
- Expand business foundation by leveraging fermentation technologies (e.g. erythritol) and partnerships
APTSIS 15: Performance Products

Operating Income and Resource Allocation Plan

Accelerate launch of green businesses, pursue further value-addition, and reach out to global markets

### Operating Income

<table>
<thead>
<tr>
<th>FY2010</th>
<th>FY2012</th>
<th>FY2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash-generating Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business to be restructured</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Resource allocation plans

**APTSIS 10**

<table>
<thead>
<tr>
<th>FY2008-2010*</th>
<th>FY2010**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>140</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>75</td>
</tr>
</tbody>
</table>

*FY2010 forecast

**Including MRC

**APTSIS 15**

<table>
<thead>
<tr>
<th>FY2011-2015</th>
<th>5 year average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>440</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>210</td>
</tr>
</tbody>
</table>

Billions of yen

Mitsubishi Chemical Holdings Corporation
Health Care - Strategies

Accelerate to be a global research-driven pharmaceutical company and deliver healthcare solutions

- **Growth strategy (ethical drugs)**
  - Strengthen sales of current major products by LCM (life cycle management)
  - Maximize profit by new ethical drugs and increase approved products in USA, EU and China
  - Strengthen pipeline to fulfill unmet medical needs

- **Innovation strategy (healthcare solutions)**
  - Deliver healthcare solutions through pharmaceuticals and diagnostics
  - Collaboration among the Group healthcare-related operations

- **Cash-generating Business**
  - Stabilize earnings from Cash-generating Businesses
    - Diagnostics & support for new pharmaceutical development
    - Generics
Pipeline for growth (ethical drugs)

JAPAN
- MT-4666
- Phase 1
  - MP-124
  - MP-136
  - TA-8995
  - MT-3995
  - GB-1057
- Phase 2
  - MP-435
  - MP-214
- Phase 3
  - MP-513
  - APTA-2217
  - MP-424
  - BK-4SP
  - CNTO148
  - Filed

USA, EU
- Phase 1
  - TA-7284
  - MP-136
  - MT-3995
  - GB-1057
- Phase 2
  - MCI-186
  - MP-513
  - MT-2832
  - T-0047
- Phase 3
  - MCI-196
  - MP-146
  - TA-7284
  - TA-1790

Expecting high profitability; targeted to be launched by 2015
Blue text: Out-license

APTSIS 15: Health Care
Mitsubishi Chemical Holdings Corporation
Profit maximization by new products (ethical drugs) in Japan

- **Current main products**
  - **Remicade**: expand sales by approval of dose escalation for Clone disease, etc.
  - Current main products (e.g. Radicut): maintain profit by approval of additional new formulation, large size clinical trials, and approval of additional indications

**New products**
- MP-513, TA-7284 (Type 2 Diabetes mellitus)
- CNTO148 (Rheumatoid arthritis)
- FTY720 (Multiple sclerosis)
- MP-424 (Chronic hepatitis C)
- Escitalopram (Antidepressant)

**Effective product life cycle management**
- (additional indication, etc.)

**Filed by Mochida in FY2010 (to be co-marketing with Mochida)**
- MP-513: P3, scheduled to be filed in FY2012; TA-7284: P2
- Filed by Janssen in FY2010 (to be co-marketing with Janssen)
- P2, scheduled to be filed in FY2010 by MTPC (to be co-marketing with Novartis)
- P3, scheduled to be filed in FY2010 by MTPC (licensed-in from Vertex)

**Mitsubishi Chemical Holdings Corporation**
**Growth Strategy (3)**

Global launch of approved products in USA, EU and China

**USA**
- USA as prioritized area to invest resources
- Early approval and launch with developing products for kidney therapeutics in USA & EU

**China**
- Strategy and initiatives for obtaining approval of development candidates
- Increase the market presence by sales expansion of current products and in-licensed products

1. Introduction of products to China (e.g. *Radicut* and *Talion*)
2. New products: MP-424 (chronic hepatitis C)
   - MP-513 & TA-7284 (Type 2 diabetes mellitus)

**TA-7284** (Type 2 diabetes mellitus, obesity)

**MCI-196** (Hyperphosphatemia)
- MP-146 (Chronic kidney disease)

**FTY720** (Multiple sclerosis)

**Current products**
- FY2011
- FY2012
- FY2013
- FY2014
- FY2015
- FY2016

Mitsubishi Chemical Holdings Corporation
Innovation Strategy

Healthcare Solutions

MTPC

- Pharmaceuticals for unmet needs
  * Drug development using new technologies (incl. biomarkers)
  - Drug for diseases that are difficult to care
  - Vaccines developed by new technology

MCMC

- Diagnostic service for personalized medicine
  - Diagnostics using cutting-edge technologies (e.g. gene diagnosis)
  - Medical IT analysis
    - Epidemiologic data to health insurer by collaboration w/ NTT Data

The MCHC Group
(Health Care and Performance Products domains)

- Solution delivery by integrating the Group’s technologies and products
  - High purity water production systems for pharmaceuticals & medical treatment
  - White LED for medical applications

Innovation Strategy in APTSIS 10 (Personalized Medicine) has been evolved to ‘Healthcare Solutions’
Cash-generating Business

**APTSIS 15: Health Care**

### Generics

- **Net Sales** ¥10 billion (FY2010) ➔ ¥50 billion (FY2015)
  - Establish reliable brand of high quality and stable supply
  - Strengthen business by launching major products
  - Fine-tune production and sales structure

### Diagnostics & support for new pharmaceutical developments

- **Net Sales** ¥81 billion (FY2010) ➔ ¥115 billion (FY2015)
  - Clinical testing
    - Expand business by regional tie-ups, delivering solutions, and capitalizing cutting-edge technologies
  - Support for new pharmaceutical development
    - Sharpen new technologies and outreach global market
  - Clinical diagnostic reagents & instruments
    - Accelerate global sales of PATHFAST, a key strategic product
  - Medical IT analysis service
    - New business launch to analyze medical information
Accelerate to be a global research-driven pharmaceutical company
and deliver healthcare solutions
APTSIS 15
Industrial Materials
Industrial Materials - Strategies

Increase profitability by accelerating globalization, shifting to high-performance products, and optimizing product chain

**Growth Strategy**
- Expand global operation and shift to high-performance products with regional partners
  - MMA and PMMA, performance polymers, high-performance graphite

**Innovation Strategy**
- Deliver new materials that contribute to the environment and to the ‘Sustainable Carbon Society’
  - Sustainable resources

**Cash-generating Business**
- Stabilize earnings and reinforce business structure
  - Stabilize operations and minimize environmental impact
  - Reinforce business structure by leveraging high-value-added products, expanding knowledge business & improving process technologies: PTA, coke, PP, PHL / BPA /PC chain

**Business to be restructured**
- Complete restructuring in Japan
**Growth Strategy**

**Expand global operation & high-performance product ratio**

**MMA/PMMA**
- Net Sales: ¥270 billion (FY2010) → ¥430 billion (FY2015)
- Global leader
  - MMA
    - Expand production capacity capturing rising demand and optimize global sites
  - PMMA
    - Develop and expand as high-performance growth driver (e.g. FPD applications)
    - Secure more than 60% share in light guide plate applications as MMA product chain
    - Develop supply capabilities of large-size light guide plate for expanding LED-TV markets and expand sales of high-performance sheets for FPD application

**Performance Polymers**
- Net Sales: ¥40 billion (FY2010) → ¥60 billion (FY2015)
- Outreach to emerging markets (China, India, Thailand, Brazil) to capture growing demands in automobiles and health care (target sales: > 100,000 t/y (FY2010); 150,000 t/y (FY2015))
- Collaborate among the Group and apply new technologies to create new markets such as compatibilizing agents and adhesives

**High performance graphite**
- Net Sales: ¥15 billion (FY2010) → ¥25 billion (FY2015)
- Develop world-leading low thermal expansion needle coke (as petroleum-based alternatives) and increase sales in China (additional 20,000 t/y by FY2012) by capturing rise in demand
- Increase pitch coke sales (additional 10,000 t/y by FY2012) for silicon carbide crucibles, meeting demand rise in photovoltaic modules
- Explore overseas partnerships to secure coal tar sources and expand production sites
**Growth Strategy – Global Operation**

**Accelerate globalization with partnerships**

**EU & USA:**
- Expand operations of high-performance products
  - PP compounds: Leverage partnership with Borealis
  - PC compounds: Generate synergies from the acquisition of DSM’s PC business
  - Generate synergies with Quadrant’s engineering plastic business and collaborate in functional composites
  - Expand production bases for performance polymers
  - Expand sales in growth areas for MMA product chain (including Eastern Europe and South America)
  - Harness Lucite sites

**Middle East:**
- Alliances and overseas operations
  - Maintain the long-term collaborative ties with SABIC through Eastern Petrochemical (SHARQ)
- Execute “Alpha” Project
  - Business alliances in Saudi Arabia
    - 250,000 t/y of MMA and 40,000 t/y of acrylic resin pellets
    - Go on line in FY2014

**Asia:**
- Alliances and overseas operations
  - In the expanding Chinese market
    - PP compounds
    - PC and BPA 
    - PTA
    - Strengthen competitiveness by utilizing MCAP (strengthen power in raw materials purchasing)
    - Reinforce area partnership strategy to serve market needs
  - Sustainable resources
    - Alliance with PTT Public Company in Thailand
- Expand business in Asia
  - Bolster production in MMA demand areas
    - Expand capacity of MMA (Thailand, Korea, China, etc)
    - China: Continuous casting acrylic sheets
  - Functional resins: Upgrade plans in China, Thailand and India
  - High-performance graphite: Increase exports to China
- Expand knowledge business
New Process for C3/C4 and Sustainable Resources

Business structure transformation by leveraging new technologies using sustainable resources

Naphtha Cracker

Sustainable Resources

Methanol
Ethanol
Succinic Acid, etc.

Biomass

Unused gas

Naphtha

Current Petrochemical process

Naphtha Cracker

BTX

C2
C3
C4

Fraction optimization

C2
C3
C4

Consider co-development with venture companies (USA)

Innovative technologies for C3/C4 production
C3: Dimethyl ether to propylene
C4: Butene to crude butadiene

DURABIO
Bio-based engineering plastic

GS Pla
Polybutylene succinate

Polybutylene succinate

Good Chemistry for Tomorrow
Creating better relationships among people, society, and our planet

Mitsubishi Chemical Holdings Corporation
**Innovation Strategy**

Deliver new materials that contribute to the environment and the “Sustainable Carbon Society”

- **Sample shipment started from August 2010.**
- **Establish presence in high-performance product market**
  - target sales in FY2015: 20,000 t/y
  - main application: alternatives for glass, optical
- **Planning to establish operation in Thailand w/ PTT**
- **Utilize low-cost raw materials to enter new markets**
  - target production in Thailand by FY2015: 20,000 t/y
- **Market and sales of bio-based PE, produced by Braskem & imported by Toyoda TSUSHO, in Japan by applying polymer design and processing capabilities**
- **Expand presence by delivering eco-friendly products applying compounding and molding technologies**

**Target net sales: ¥10 billion (FY2015)**

**Sustainable resources**

- **DURABIO**
  Bio-based engineering plastic
- **GS Pla**
  Polybutylene succinate
- **Bio PE**
  Bio-based polyethylene
- **PLA**
  Polylactic acid
PTA

- Market leader in Asia
- Reduce cost, form partnerships to meet market needs, and develop knowledge business (China and India)

Coke

- Net Sales: ¥200 billion (FY2010) → ¥250 billion (FY2015)
- Solidify earning structure and maintain operations for comprehensive coal chemistry
- Strengthen knowledge businesses in overseas and expand highly profitable export businesses (India, Thailand, and Brazil)

PP and compounds

- Net Sales: ¥180 billion (FY2010) → ¥200 billion (FY2015)
- Optimize production structure and shift to high-performance product portfolio
- Increase global sales of compounds, particularly for the automotive market (China, Thailand, India, North America, and EU)

PHL, BPA, PC

- Net Sales: ¥80 billion (FY2010) → ¥95 billion* (FY2015)
- Increase profitability by cost reduction and expanding sales of high-performance products
- Successful start at Sinopec-Mitsubishi Chemical Polycarbonate (Beijing) (SMP, JV with Sinopec)
- Expand overseas partnership by utilizing non-phosgene DPC process
*additional ¥40 billion expected from SMP

Mitsubishi Chemical Holdings Corporation
Threat from resource-producing nations

Nations w/competitive resources (Middle East & China) will rush into the Asian market

Decrease in demand for derivatives (especially polyolefins)

Excess supply from Middle East & China will limit exports from and shrink demand in Japan

Downsizing naphtha crackers

Annual ethylene production in Japan drops to 5MM tons, and further reduction is concerned

Implemented strategies

Derivatives:
Restructured and optimized production capacities (PP, PE, SM, PS, CL, PVC)

Implementing strategies

Derivatives
- Expand high-value products and take countermeasures
- Further optimization with partners

Crackers
- Mizushima Plant: Unify operation with Asahi Kasei and downsize capacity
- Consider a single cracker (w/Asahi Kasei) and collaborate with refineries
- Kashima Plant: Increase competitiveness through regional partnership
- Further restructuring including collaboration with refineries

Mitsubishi Chemical Holdings Corporation
Globalize, accelerate value-added product ratio, and balanced growth with product chain optimization to earn higher profitability.

Operating Income and Resource Allocation Plan

**Operating Income**
- Growth Business
- Cash-generating Business
- Business to be restructured

**Resource allocation plans**

<table>
<thead>
<tr>
<th>APTSIS 10</th>
<th>FY2008-2010</th>
<th>FY2010*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>81.0</td>
<td>34.0</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>43.0</td>
<td>18.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APTSIS 15</th>
<th>FY2011-2015</th>
<th>5 year average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>320</td>
<td>64</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>90</td>
<td>18</td>
</tr>
</tbody>
</table>
## Billions of yen

### Operating Income by Segment

<table>
<thead>
<tr>
<th>Domains</th>
<th>Segment</th>
<th>FY2010 forecasts</th>
<th>FY2012 plan</th>
<th>FY2015 plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Products</td>
<td>Electronics Applications</td>
<td>4</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Designed Materials</td>
<td>38</td>
<td>54</td>
<td>100</td>
</tr>
<tr>
<td>Health Care</td>
<td>Health Care</td>
<td>77</td>
<td>79</td>
<td>120</td>
</tr>
<tr>
<td>Industrial Materials</td>
<td>Chemicals</td>
<td>44</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Polymers</td>
<td>45</td>
<td>48</td>
<td>70</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Corporate</td>
<td></td>
<td>(8)</td>
<td>(5)</td>
<td>(5)</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td><strong>203</strong></td>
<td><strong>230</strong></td>
<td><strong>360</strong></td>
</tr>
<tr>
<td>Contingency</td>
<td></td>
<td></td>
<td></td>
<td>(30)</td>
</tr>
<tr>
<td><strong>Total including contingency</strong></td>
<td></td>
<td><strong>203</strong></td>
<td><strong>230</strong></td>
<td><strong>330</strong></td>
</tr>
<tr>
<td><strong>Operating income by Leaping Ahead (M&amp;A)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>70</strong></td>
</tr>
<tr>
<td><strong>Total including Leaping Ahead (M&amp;A)</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>400</strong></td>
</tr>
</tbody>
</table>

### Net Sales

<table>
<thead>
<tr>
<th></th>
<th>FY2010</th>
<th>FY2012</th>
<th>FY2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>3,190</td>
<td>3,600</td>
<td>4,200</td>
</tr>
<tr>
<td>Net sales by Leaping Ahead (M&amp;A)</td>
<td><strong>800</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total net sales</strong></td>
<td></td>
<td></td>
<td><strong>5,000</strong></td>
</tr>
</tbody>
</table>
Global Operation
(Regional Strategy)
Global Operation (Regional Strategy)

Expand overseas sales ratio and OP margin (FY2010 vs. FY2015)

Overseas sales ratio: 34% to 45%
Overseas OP margin: 26% to 50%

<table>
<thead>
<tr>
<th>Region</th>
<th>FY2010 forecast</th>
<th>FY2015 target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Net sales: ¥3.2 trillion</td>
<td>Net sales: ¥5.0 trillion</td>
</tr>
<tr>
<td></td>
<td>OP: ¥203 billion*</td>
<td>OP: ¥400 billion*</td>
</tr>
</tbody>
</table>

- *overseas: ¥53 billion
- *overseas: ¥200 billion

China
- Performance Products: Expand business in automobile, FPD, environment & energy etc.
- Health Care: Expand prescription medicine business
- Industrial Materials: Expand competitive business
- Strategic alliance with local partners and strengthen regional management

Asia
- Performance Products: Strengthen global supply capabilities in Singapore, Taiwan, and Korea
- Industrial Materials: Strengthen manufacturing bases
- Strengthen supply chain management

EU & USA
- Performance Products: Expand business in automobile, FPD, environment & energy etc.
- Health Care: Expand ethical drugs business
APTSIS 15
Synergies
## Synergies

(Billions of yen)

<table>
<thead>
<tr>
<th>Major synergies considered</th>
<th>FY2012</th>
<th>FY2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Businesses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF &amp; composites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Develop thermoplastic CF composites and process technologies to accelerate product launch in automotive panels and components and industrial, environmental, and energy applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Combine membrane bioreactor and purified water manufacturing technologies to expand business in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Combine micro-filtration technology and ion-exchange resins to broaden water treatment business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty chemicals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Mutually apply acrylic coating technologies, acrylic polyurethane, modified PP, and mechanical emulsification to launch emulsified polymers for new water-borne coating markets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Integrate engineering businesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Effective use of sales channel and business units within the Group e.g. electrolyte production (MCC) at Lucite (MPI) facilities in EU &amp; USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost and R&amp;D</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Centralize purchasing function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Integrate logistic networks and consolidate locations within the Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Integrate infrastructural systems to enhance efficiency and rationalize by standardizing applications</td>
<td></td>
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</tr>
<tr>
<td>R&amp;D</td>
<td></td>
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<tr>
<td>➢ Exercise more synergies among technologies and more effective use of technology platforms</td>
<td></td>
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<tr>
<td>➢ Optimize human resources allocation and infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>43</td>
</tr>
</tbody>
</table>
Enhancing shareholder value and corporate value
Enhancing Shareholder Value

Basic Policy

Enhance shareholder value by improving corporate value

Shareholder Returns

- Maintain sufficient internal reserves to fund business development while paying consolidated results-based dividends

- While targeting a medium-term payout ratio of at least 30%, we will also prioritize stable dividends (maintaining and increasing cash dividends per share)
Management of Sustainability

Stakeholder Capitalism

Shareholder Capitalism

Crisis of Financial Capitalism* (2008)

Public Interest, Environment

CSR GHG

MOS (Management of Sustainability)

New Concept for Management

Technology Management Axis

MOT (Management of Technology)

Business Administration Axis

NBA (Master of Business Administration)

Capital Efficiency, ROE Management

*Financial Capitalism = Stockholder Capitalism + Market-Driven Capitalism
KAITEKI Activities

We are committed to run our business in a way that delivers KAITEKI solutions

MCHC corporate value (through corporate activities)

Economic value
KAITEKI value = Contribution to society

Deliver value to society thr’ business activities
Sustainability Health Comfort

Business activities based on social responsibility
Human rights Corporate governance Safety
Corporate ethics Labor practice Environment

Corporate Philosophy

Good Chemistry for Tomorrow
KAITEKI Indexes

**Sustainability Index**
- S-1 Contribution to reduce environmental impact through products & services
- S-2 Practice energy saving & reduction of depletion resources
- S-3 Contribution to reduce environmental impact through supply chain management

**Health Index**
- H-1 Contribution to medical treatment
- H-2 Contribution to improvements of QOL
- H-3 Contribution to early detection and prevention of diseases

**Comfort Index**
- C-1 Deliver products (development and manufacturing) for comforting lifestyle
- C-2 Improve stakeholder satisfaction
- C-3 Recognition of corporate trust
Monitor progress and manage PDCA cycles

Procurement

S-2-3
Generate resources & energy savings of ¥13 billion

S-3-1
Achieve 80% inspection rate on toxic substance in purchased items

S-3-2
Achieve 90% purchasing of raw materials and packaging according to CSR guideline

Production

S-1-1
Reduce environmental impact by 30% from 2005 levels

S-2-1
Procure reusable materials equivalent to 6,000 t/y of crude oil

S-2-2
Suppress rare metal uses by 800 t/y thr’ improving process and innovative products

S-3-1
Achieve 80% inspection rate on toxic substance in purchased items

The MCHC Group

S-1-2
Generate reduction of CO2 emissions through products by 4 million t/y

H-1
Increase index performance derived by the degree of difficulty to treat diseases and the number of administered patients by 30%

H-2
Increase contribution to QOL improvements by 40%

H-3-1
Increase index of vaccine treatment by 40%

H-3-2
Increase no. of diagnostic testing by 17%

C-1-1
Increase sales of comfort-oriented products by ¥600 billion

C-1-2
Increase new products ratio from 16% to 35%

C-2-1
Improve third-party corporate assessments

C-2-2
Enhance employee satisfaction index

C-3
Halve the number of troubles and accidents

Products

Targets
Organization for KAITEKI Project

From environmental management to KAITEKI management

MCHC President & CEO

CKO (Chief KAITEKI Officer)

KAITEKI Secretariat
MCHC Corporate Strategy Office

KAITEKI Committee (MCHC)
Members from corporate strategy, corporate management, PR&IR, HR, administration, internal control

Co-work with external organizations:
WBCSD, ICCA, WEF, JCIA, JPCA, etc.
and government offices

The KAITEKI Institute

MCC
Corporate Planning Div.
Technology Coordination Div.
Environmental Safety & Quality Div.
KAITEKI Committee

MTPC
Corporate Planning Div.
KAITEKI Committee

MPI
Corporate Planning Div.
KAITEKI Committee

MRC
Corporate Planning Div.
KAITEKI Committee

Mitsubishi Chemical Holdings Corporation
The KAITEKI Institute: Focuses and Progress

Areas
- Researching
- Investigating

Sensitivity science
- Molecular music

Development of renewable energy and resources
- Chemicals production from CO₂ using algae
- Water splitting with sunlight
  - Hydrogen production
- Theoretical analysis of photosynthesis

Future societies
- Measures to fulfill life of aged people
- Analysis of internal sounds of the human body

Breakthrough technologies in healthcare

The Environment, Resources, and Energy

Water and food
- Water-saving agriculture system in Victoria State in Australia
- New method to produce clean water

Solutions to water and food problems

Development of materials and devices for higher energy efficiency
- Next-generation semiconductor substrate
- Materials for higher energy efficiency for housing and others
Aspiration – The MCHC Group

Realizing KAITEKI

Business Domains

Decision Criteria for Corporate Activities

Group Philosophy

Mitsubishi Chemical Holdings Corporation
Reference Materials
Reference Materials

- MCHC Group Motto, *APTSIS*
- *KAITEKI* Value and *KAITEKI* Indexes
- Business Portfolio Reform under *APTSIS 10*
- Operating Income (FY2010 vs. FY2015)
- CAPEX Plan
- Growth Business and Next-generation Growth Business
Mitsubishi Chemical Holdings Group Motto

Apt:

【Adjective】 Appropriate
-sis:

【Suffix】 From Greek, indicates that something is a behavior, process, status, condition, etc.

Mitsubishi Chemical Holdings Corporation
“KAITEKI” is ...

- **KAITEKI** is a Japanese word for comfort, and encompasses values that companies should practice worldwide in the 21st century.

- **KAITEKI** in the 21st century signifies challenging state of sustainability, materializing comfort for people, comfort for society and comfort for the Earth. We will act accordingly.

- At Mitsubishi Chemical Holdings Group companies, with Sustainability, Health, and Comfort as the three decision criteria for our corporate activities, we are committed to run our business in a way that delivers **KAITEKI** solutions.
Reduce environmental impact by 30% vs. 2005 levels
Cut GHG (CO2 equivalent) emission by 17% vs. 2005 levels

Environmental impact index

GHG emission trend

* targets

Mitsubishi Chemical Holdings Corporation
Increase index performance derived by the degree of difficulty to treat diseases and the number of administered patients by 30% vs. 2009

Index for contribution to medical treatments* = \( \frac{\sum (A \times B)_{\text{FY2015}}}{\sum (A \times B)_{\text{FY2009}}} \)

A: degree of difficulties to treat diseases
B: number of administered patients

* Defined by MCHC Group
Increase new products ratio from 16% to 35% (Performance Products and Health Care domains)
## Major Initiatives

<table>
<thead>
<tr>
<th>Growth strategy (including M&amp;A)</th>
<th>Performance Products</th>
<th>Industrial Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRC became a wholly owned subsidiary; Taiyo Nippon Sanso became an equity-method affiliate</td>
<td>- New Mitsubishi Plastics inaugurated&lt;br&gt;- Consolidated Nippon Synthetic Chemical Industry as subsidiary&lt;br&gt;- Formed organic LED lighting joint venture with Pioneer&lt;br&gt;- MRC established MRC-SCL Precursor&lt;br&gt;- Quadrant Ag of Holland became a consolidated subsidiary&lt;br&gt;- Acquired Frecom of Holland&lt;br&gt;- Formed strategic alliance with China Petroleum &amp; Chemical Corporation&lt;br&gt;- MCC exchanged its Asian nylon businesses for the European PC operations of Royal DMS of Holland&lt;br&gt;- Japan Polypropylene formed business alliance with Borealis AG of Austria</td>
<td>- Formed strategic alliance with China Petroleum &amp; Chemical Corporation&lt;br&gt;- MCC exchanged its Asian nylon businesses for the European PC operations of Royal DMS of Holland&lt;br&gt;- Japan Polypropylene formed business alliance with Borealis AG of Austria</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capacity and efficiency improvements</th>
<th>Japan</th>
<th>Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Integrated water treatment &amp; engineering businesses&lt;br&gt;- Increased cathode material capacity for lithium-ion batteries at Mizushima site</td>
<td>- MRC opened office in Taiwan&lt;br&gt;- Dia Moulding Slovakia established&lt;br&gt;- Mitsubishi Plastics Asia Pacific established&lt;br&gt;- JV Qingdao Lingda Kasei to specialize in spherical graphite&lt;br&gt;- Blu-ray disc operations launched in Singapore</td>
<td>- Mytex Polymers India established&lt;br&gt;- Global structure created for PTA&lt;br&gt;- Performance resin compounds (China and USA)</td>
</tr>
</tbody>
</table>

| Acquisitions and mergers | - KOX and JER absorbed and merged<br>- Mitsubishi Chemical Analytech launched<br>- MKV DREAM established<br>- Packaging materials companies of MPI and MCC merged | - Apco and Japan Ethanol absorbed and merged<br>- Sunprene Thailand made a wholly owned subsidiary |

| Transfers | - Planned to sell stake in Calgon Mitsubishi Chemical<br>- Sold shares in Techno Polymer, PS Japan, Yokkaichi Gosei | - Fertilizers: toward minority share holder |

| Withdrawals | - MPI closed seven business sites<br>- Stopped PVC pipe production in Koriyama and Nagahama | - Stopped production of cyclohexane plant (Mizushima)<br>- Stopped caprolactam, anone, and ammonium sulfate production (Kurosaki) | - Stopped production of PX plant (Mizushima)<br>- Decided to stop SM production (Kashima) | - Decided to stop production of PVC (Yokkaichi) and electrolytes and VC monomers (Mizushima) |
### APTSIS 15: Reference

**Business Portfolio Improvements under APTSIS 10**

Implementation in FY2008–2010

<table>
<thead>
<tr>
<th>Major Initiatives</th>
<th>Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth strategy</td>
<td>- Choseido Pharmaceutical became a consolidated subsidiary</td>
</tr>
<tr>
<td>(including M&amp;A)</td>
<td>- Secured exclusive development and commercialization licenses in Taiwan and</td>
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<td></td>
<td>Indonesia for pitavastatin calcium, a hypercholesterolemia treatment agent.</td>
</tr>
<tr>
<td>Capacity and efficiency</td>
<td>- Tanabe Seiyaku Hanbai established</td>
</tr>
<tr>
<td>improvements</td>
<td>- Production companies consolidated to form Mitsubishi Tanabe Pharma Factory</td>
</tr>
<tr>
<td></td>
<td>- Tanabe Seiyaku Hanbai and Chosei Yakuhin merged</td>
</tr>
<tr>
<td>Japan</td>
<td>- Construction started on new building for Medicinal Chemical Laboratory</td>
</tr>
<tr>
<td></td>
<td>on premises of Yokohama Office</td>
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<tr>
<td></td>
<td>- Life cycle management of existing pharmaceuticals (Radicut, Anplag, and</td>
</tr>
<tr>
<td></td>
<td>Gastrom)</td>
</tr>
<tr>
<td></td>
<td>- Added indications for Remicade and Venoglibulin-IH</td>
</tr>
<tr>
<td>Overseas</td>
<td>- Mitsubishi Tanabe Pharma America established</td>
</tr>
<tr>
<td></td>
<td>- Sales company Guangdong Tanabe Pharmaceutical established</td>
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<tr>
<td></td>
<td>- Received approval for FTY720 multiple sclerosis treatment in USA and Russia</td>
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<td></td>
<td>(USA sales began through Novartis)</td>
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<td></td>
<td>- Expanded number of European countries to 9 in which Aragatoban is available</td>
</tr>
<tr>
<td></td>
<td>- Mitsubishi Pharma (Guangzhou) completed infusion bag production facilities</td>
</tr>
<tr>
<td>Acquisitions and mergers</td>
<td>- Welfide Service integrated into Tanabe Total Service</td>
</tr>
<tr>
<td></td>
<td>- Tanabe Total Service integrated with Kouei Shouji</td>
</tr>
<tr>
<td>Transfers</td>
<td>- Transferred stakes in Sun Chemical, Tama Kagaku, and Ogura Art Printing</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>- Dissolved Mitsubishi Kasei Institute of Life Sciences</td>
</tr>
<tr>
<td></td>
<td>- Liquidated subsidiaries Fuji Kosan and Tokyo Tanabe Shoji</td>
</tr>
</tbody>
</table>
Analysis of Operating Income (FY2010 vs. FY2015)

Billions of yen

- Growth Business: +286 (113)
- Cash-generating Business: +52 (35)
- Volume: +286 (130)
- Price: +52
- Fixed Cost: +80
- Rationalization: +43
- Synergy: +43
- Contingency: +30 (26)
- Others: +30

FY2010 forecast: 203
FY2015 target: 330

Mitsubishi Chemical Holdings Corporation
<table>
<thead>
<tr>
<th>Domain</th>
<th>Segment</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>Electronics Applications</td>
<td>Increase GaN substrate production line for white LED lighting</td>
</tr>
<tr>
<td>Products</td>
<td></td>
<td>New production facility for OPV</td>
</tr>
<tr>
<td></td>
<td>Designed Materials</td>
<td>Capacity increase in electrolytes, anodes, and cathodes for HEV Li-ion batteries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New production facility for Li-ion battery separator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity increase of high-performance polyester films</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity increase for carbon fiber calcination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity increase for OPL film</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New water treatment plant for operation and maintenance</td>
</tr>
<tr>
<td>Health Care</td>
<td>Health Care</td>
<td>New GMP facilities for API and formulation</td>
</tr>
<tr>
<td>Industrial</td>
<td>Chemicals</td>
<td>Down size capacity of naphtha crackers</td>
</tr>
<tr>
<td>Materials</td>
<td>Polymers</td>
<td>Capacity increase of MMA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New line for acrylic continuous casting sheets</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>New R&amp;D facility</td>
</tr>
</tbody>
</table>
**Goals FY2015**

**No. 1 player worldwide**

Through FY2012: Solidify business infrastructure

- **Gas phase method**: mass produce GaN substrates, develop new phosphors, and deliver **sapphire-based VxRGB modules, light bulbs, and lighting fixtures.**

From FY2013: Market **KAITEKI** lighting by capitalizing strength in materials

- **Liquid phase method**: mass produce GaN substrates, deliver new phosphors and **GaN based VxRGB modules and lighting fixtures.**

**KAITEKI Lighting**

**Ultra-efficient, Beautiful, and Comforting***

*High efficiency, high color rendering, dimming & color tuning

- **GaN substrates**
  - Mass-production by liquid phase method
  - Target 40% market share

- **Package LEDs**
  - New R, G, and Y phosphors for higher luminance and color rendering
  - Blue excitation → ultraviolet excitation
  - Target 50% market share

- **Modules**
  - Deliver VxRGB-based **Natural Vision** fixtures and modules

**Light bulbs**

**Lighting fixtures**

Create market for **tunable lighting**

**Natural Vision LED**=Close to natural sun light

Tunable=Dimming & color tuning

Register VxRGB trademark = Ultraviolet excited RGB phosphor compounds

**Business model and value chains**

**Through FY2012: Solidify business infrastructure**

- **Gas phase method**: mass produce GaN substrates, develop new phosphors, and deliver **sapphire-based VxRGB modules, light bulbs, and lighting fixtures.**

- **Liquid phase method**: mass produce GaN substrates, deliver new phosphors and **GaN based VxRGB modules and lighting fixtures.**

**From FY2013: Market KAITEKI lighting by capitalizing strength in materials**

- **Gas phase method**: mass produce GaN substrates, deliver new phosphors and **GaN based VxRGB modules and lighting fixtures.**

- **Liquid phase method**: mass produce GaN substrates, deliver new phosphors and **GaN based VxRGB modules and lighting fixtures.**
**Growth Business  Lithium-ion battery materials**

**Goals FY2015**

**Top global market share with global operations**

**Strategies and initiatives**

- Build global supply structure
- Accelerate development for automotive certifications
- Reinforce quality controls and cost-cutting

**Market trend forecast for LIB materials**

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>Electrolytes</strong></td>
<td>8,500</td>
<td>50,000</td>
<td>25 → 40</td>
<td></td>
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</tr>
<tr>
<td><strong>Anode materials</strong></td>
<td>3,000</td>
<td>35,000</td>
<td>20 → 35</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Cathode materials</strong></td>
<td>600</td>
<td>15,000</td>
<td>&lt;5 → 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Separators</strong></td>
<td>12 million m²/yr</td>
<td>72 million m²/yr</td>
<td>&lt;5 → 10</td>
<td></td>
<td></td>
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</tbody>
</table>

**Four materials and advantages**

Electrolytes: Optimal formulations and synergies with other materials

Anode materials: Spherical graphite & Surface treatment technologies

Cathode materials: Powder design for cobalt reduction materials

Separators: Dry 3D structure control

*SCD: small consumer device

Mitsubishi Chemical Holdings Corporation
Goals FY2015 and Strategies

Market leader in expanding Asian market

- Expand facilities and increase CAPEX adopting to growing markets
- Global operation, particularly in Asia, doing more business in emerging nations
- Optimize earnings by shifting targets to advanced flat panel displays
- Maintain high market shares by cutting costs and enhancing quality & services

MCHC Group products

Worldwide panel shipments

Mitsubishi Chemical Holdings Corporation
Polyester film

<Strategy and key initiatives>
- Increase capacity and CAPEX in expanding markets
  - Build 2 lines in China & start prod’n (JV w/ Eternal Chemical)
- Optimize earnings by shifting to advanced FPDs
- Maintain high market shares by cutting costs and enhancing quality & services
  - Maintain market share in processed products for FPDs
- Expand global operation, particularly in Asia, increase more business in emerging nations
  - Leader in Chinese FPD market
  - Develop and launch new products

Acrylic sheet

<Strategy and key initiatives>
- Ensure efficient delivery by building common platform for Asia, EU, and the US
- Maximize earnings by optimal product portfolio and adopting to market changes
  - Develop supply chain for light guide plates in expanding LED-TV markets
  - Increase earnings by launching high-performance mar resistance sheets (anti-fingerprint, anti-reflection, and anti-glare)
  - Expand sales in growing Chinese and Southeast Asian markets

Optical polarized film

<Strategy>
Expand earnings by building comprehensive presence in LED-TV materials market
- Increase production capacity
- Optimize quality
- Improve supply stability

<Advantages>
- PVOH materials
- Advanced film production technologies
- Polarizer production record

Color resists

<Strategy>
- Expand sales by rationalizing our supply chain for customers

<Advantages>
- Integrated manufacturing system w/strength in disposition technology
- Agile customizations

<Key areas>
- China, Korea and Taiwan

Mitsubishi Chemical Holdings Corporation
Goals FY2015

Expand to advanced composite and molding materials

Promote new and large scale business focusing on growth areas, notably environment & energy, mobile devices, and electronics

Carbon fiber (CF) /composites - strategies and initiatives

PAN-based:
- Integrate precursors, CF, and intermediates into one business
- Strengthen precursor strategy via MRC-SGL Precursor
- Early integration of CF production line scheduled to begin operations in 2011 and explore next capacity expansion
- Develop composites for automotive structural components and supply automotive materials
- Establish competitive advantages in intermediate materials, processing technologies and generate synergies within the inter-companies
- Expand gas dispersion layers for fuel cells
- Make acquisitions and build alliance network to expand value-chain

Pitch-based:
- Expand application by taking characteristic advantage of pitch-based CF
- Continue to develop and launch new products for CFs and processed products
- Advance CF production technologies

Strategies and policies for alumina fibers
- Fulfill supply responsibilities to accommodate growing demand and outreach to new customers and new markets

Global carbon fiber demand projections

Source: MCHC estimate

Industrial applications
Sports and leisure
Aerospace

BMW Megacity Vehicle official photo

Metric tons annually

FY 2006
FY 2008
FY 2009
FY 2010
FY 2012
FY 2015

0
20,000
40,000
60,000
80,000

Industrial applications
Sports and leisure
Aerospace

Growth Business Performance composite materials

Mitsubishi Chemical Holdings Corporation
Goals FY2015

Expand utilizing specialty engineering plastic molding technologies and thermoplastic resin composites platforms

- Reinforce semiconductor production technologies (advanced plasma and ultra-pure materials)
- Launch new application by technical collaboration with customers

Strategy and policies

Engineering plastics:
Broaden application & overcome business climate changes

- Super engineering plastics
  - Continue developing and maintaining leading position in advanced thermoplastics
  - Launch production in Japan to augment European and American capabilities

- General-purpose engineering plastics
  - Globally manufacture and use sales units to market super engineering plastics

Business scope

- Super engineering plastics
- Engineering plastics
- General-purpose engineering plastics
- Amorphous plastics
- Crystalline plastics

PEI: Polyether imide
PBO: Polybenzimidazole
PPSU: Polyphenylsulfone
PSU: Polysulfone
PC: Polycarbonate
PPO: Polyphenylene oxide
PAI: Polyamide-imide
PEEK: Polyetheretherketone
PPS: Polyphenylene sulfide
PTFE: Polytetrafluoroethylene
PBT: Polybutylene terephthalate
PA: Polyamide
PET-P: PET plastics
POM: Acetal polyoxymethylene
UHMW-PE: Ultra-high-molecular-weight polyethylene

Mitsubishi Chemical Holdings Corporation
**Goals FY2015**

Maximize group synergies and expand business scale

- Leverage highly profitable product portfolio to develop new offerings in growth markets and expand overseas
- Collaborate with new businesses within Group
- Generate cost synergies

**Strategies and policies**

- Reinforce existing product lines to increase presence in solvent-based coating materials
- Strengthen and expand waterborne emulsions capabilities
- Expand sales of plastisols for undercoating, UV curable coatings for Blu-ray discs and next-generation photoresist materials
- Step up efforts to cultivate non-polyvinyl chloride applications for resin modifiers
- Expand sales of acrylic films for decorative and optical application as new offerings

**3 business areas**

- Coating resins
- Photo-reactive resins
- Functional additives

**MRC**

- Solvent/Waterborne acrylic resins
- UV curable coating materials
- Resin modifiers

**MCC**

- PO/acrylic emulsions
- High performance hard coatings
- Additives and epoxy resins

**Synergies**

- Waterborne emulsions for automotive & construction
- UV curable coating materials for I&E technologies
- Resin modifiers for polymer additives

**Specialty chemicals market projections**

Source: MCHC estimates

**Billions of yen**

<table>
<thead>
<tr>
<th>Source: MCHC estimates</th>
<th>0</th>
<th>500</th>
<th>1,000</th>
<th>1,500</th>
<th>2,000</th>
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<tbody>
<tr>
<td>FY 2008</td>
<td></td>
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<tr>
<td>FY 2015</td>
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</table>

**Growth Business Specialty Chemicals**

Mitsubishi Chemical Holdings Corporation
Growth Business  Water treatment system and services

Goals 2015

Build business structure to provide total water treatment business solutions, reinforce and expand operational infrastructure in Asian markets.

Strategies and policies

- Strengthen production capacity for polyvinylidene fluoride (PVDF) membranes and increase film product sales
- Use membrane bioreactor (MBR) techniques (to remove activated sludge) to strengthen wastewater & water reclamation businesses
- Initiate and broaden alliances (JVs) in China and elsewhere in Asia
- Improve cost competitiveness and offer high-performance membranes
- Cultivate CLEANSUI business in China and elsewhere in Asia
- Generate synergies with Nippon Rensui

Water treatment market in Asia

Source: MRC estimates

- Maintenance market
- Desalination pretreatment market
- Pressurized microfiltration market
- Submerged membrane bioreactor market
- Reverse osmosis market

Billions of yen

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<td>Market</td>
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<td>Reverse</td>
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</tbody>
</table>

Mitsubishi Chemical Holdings Corporation
Growth Business Ethical drugs

Goals FY 2015

Develop and deliver globally new medicines to fulfill unmet medical needs

Current major products

<table>
<thead>
<tr>
<th>Major products</th>
<th>Net sales FY2010 forecasts</th>
<th>Major products</th>
<th>Net sales FY2010 forecasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remicade</td>
<td>60.7</td>
<td>6. Talion</td>
<td>12.6</td>
</tr>
<tr>
<td>2. Radicut</td>
<td>28.3</td>
<td>7. Maintate</td>
<td>11.8</td>
</tr>
<tr>
<td>3. Ceredist</td>
<td>17.8</td>
<td>8. Depas</td>
<td>11.1</td>
</tr>
<tr>
<td>5. Urso</td>
<td>15.0</td>
<td>10. Tanatril</td>
<td>9.3</td>
</tr>
</tbody>
</table>

FTY720 Product Profile

<table>
<thead>
<tr>
<th>Indication</th>
<th>Multiple sclerosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current development status</td>
<td>Japan : P2※1 USA/EU/Russia ※2 : Approved in USA (Sep.) and Russia (Aug.) in 2010 and filed in EU in 2009</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Modulation of sphingosine 1-phosphate (S1P) receptor</td>
</tr>
<tr>
<td>Profile</td>
<td>-More effective than interferon -First oral MS medicine in USA</td>
</tr>
</tbody>
</table>

Other medicines

<table>
<thead>
<tr>
<th>Name</th>
<th>Escitalopram</th>
<th>MP-424</th>
<th>MP-513</th>
<th>TA-7284</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication</td>
<td>Depressants</td>
<td>Chronic hepatitis type C</td>
<td>Type 2 Diabetes</td>
<td>Type 2 Diabetes</td>
</tr>
<tr>
<td>Current development status</td>
<td>Japan: Filed by Mochida ※ Co-marketing with Mochida *</td>
<td>Japan: P3 USA/EU*: P3 * Vertex (USA) , Tibotec (EU)</td>
<td>Japan :P3 Overseas :P2</td>
<td>Japan :P2 Overseas :P3※3</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Selective Serotonin Reuptake inhibitors</td>
<td>Inhibition of HCV NS3/4A serine protease</td>
<td>DPP4 inhibitor</td>
<td>SGLT2 inhibitor</td>
</tr>
<tr>
<td>Profile</td>
<td>-Highest selective SSRI -High efficacy and tolerability -Low drug interaction -ww mkt size, 3,845Ms※4</td>
<td>-High efficacy compared with existing therapy -Once a day administration -Low renal excretion rate</td>
<td>-Low risk of hyperglycemia -Effect for weight reduction -Independent effect for insulin secretion and resistance</td>
<td></td>
</tr>
</tbody>
</table>

※1 Co-development w/Novartis ※2 Out-licence to Novartis; Novartis sells and develops overseas ※3 Johnson & Johnson develops in overseas ※4 Uto Brain 2009/07
**Goals 2015**

Leverage superior quality to expand sales → Graphite electrodes for electric arc furnaces and semi-conductor application etc.

- **Needle coke**: Increase sales in expanding Chinese market and offer product that offers better low thermal expansion performance than petroleum-based alternatives. Increase sales from FY2010 → FY2012 by 20,000 t/y.

- **Pitch coke**: Accommodate expanding customer demand by ensuring stable quality. Increase sales from FY2010 → FY2012 by 10,000 t/y.

**Full-fledged sales of tar derivatives** (increase tar distillation capacity from 300,000 t/y in 2010 to 360,000 t/y)

- Needle coke: Increase sales from FY2010 to FY2012 by 20,000 t/y.
- Pitch coke: Accommodate expanding customer demand by ensuring stable quality.

**Growth Business High Performance Graphite**

Graphite electrode for electric arc furnace steel making

Atomic power core material, pantograph slider & sealing material

Various electrode & electric brush

Semi-conductor application
**Goals FY2015**

- Continuous new product development with our core modifying technologies
- Gain and/or secure shares in key markets through overseas expansion

**Strategy**

- Strengthen global presence (generating 40% of sales overseas)
- Reinforce R&D
- Collaborate with MCHC Group companies to develop new applications

**Growth Business Performance Polymers**

- **Food**
  - MODIC
  - VMX
  - PRIMALLOY

- **Electronics**
  - OLEFISTA
  - LINKLON

- **Building material**
  - PCB COMPOUNDS

- **Automobiles**
  - RABALON
  - THERMORUN

- **Healthcare**
  - ZELAS
Goals FY2015

Establishing a global operational MMA chain network leveraging No.1 capacity and cost competitiveness

Key MMA CAPEX plan

<table>
<thead>
<tr>
<th>Planned operational startup</th>
<th>Production process</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>C4 method</td>
<td>Second stage at Thai MMA</td>
</tr>
<tr>
<td>2014</td>
<td>New ethylene method</td>
<td>Saudi Arabi</td>
</tr>
<tr>
<td>2011-2015</td>
<td>–</td>
<td>Capacity upgrades at existing plants</td>
</tr>
</tbody>
</table>

Strategies and policies

- Ramp up production capacity to accommodate rising demand for MMA and PMMA and optimize global site locations (including in Asia, Middle East, and North America)
- Capture business opportunities in growth regions
- Boost production capacity in methacrylic acid and esters to accommodate regional demand growth
  - Beaumont (USA), Daesan (Korea), Thai MMA (Thailand)

RCE:

- Evonik (Germany)
- Dow Chemical (USA)
- Sumitomo Chemical (Japan)
- LG (Korea)
- Asahi Kasei (Japan)
- Jilin Chemical (China)
- Others

MMA production capacity shares as of end-2010 (MRC estimates)

Mitsubishi Chemical Holdings Corporation
Next-generation Growth Business  OPV Modules and Materials

Goals FY2015

Add values to customers in construction and automotive usage by developing photovoltaic products where only chemical company can make such innovations.

Develop PV module materials & applications

World photovoltaic modules market forecast

Source: Fuji Keizai estimates (2010)

Crystalline silicon photovoltaic modules
Non-crystalline next-generation photovoltaic modules

Barrier film PV materials strategies

- Expand and systematize barrier substrate, composites, and photovoltaic module materials businesses
- Deploy new deposition facilities for barrier substrates to attain world-leading quality and productivity
- Combine “pull and push marketing” to create markets for next-generation photovoltaic modules and other products
- Collaborate with partners in composite products

Barrier film PV materials strategies

- Back-Barrier photovoltaic module back sheet
- PROCELLIER F photovoltaic module sealant

FY2010

Thin-film silicon PV

FY2009

Plant factory

Use on trucks

Mitsubishi Chemical Holdings Corporation
Next-generation Growth Business  Organic Semiconductors

Organic Electroluminescent Lighting (OLED)

Goals FY2015

- Comprehensively produce raw materials to light sources & lighting
- Create top global brands
- Lead markets and generate highly profitable businesses

Organic electroluminescent lighting

*Homogenius* lighting: A new features uniform surface illumination is environmentally friendly

Launch in FY2011 OLE2

OLE1
Deposition-based (coating substrate)
OLED

World’s first mass-produced (coated) using Pioneer’s existing lines and featuring world’s largest surface illumination
RGB variable (white variable)

OLE2
Solution OLED device

High luminance and efficiency (white) variable color temperature

Low-cost (for large panels, with fast performance) through new production lines

Supplying “people-friendly” products And enhance “comfort living” by creating materials to device design

Lighting design: Uchihara Creative Lighting Design Inc.

 Mitsubishi Chemical Holdings Corporation
Goals FY2015

**DURABIO**: Leverage unique product features to build market presence as a highly functional product within our polymer portfolio

**GS Pla**: Build partnerships in countries with biomass resources and establish competitive business base serving to a wide application

Strategies

- Secure competitive raw materials
- Strengthen marketing to establish presence
- Reinforce application development capabilities

**DURABIO** general properties

- Low birefringence
- Excellent transparency
- Low photoelastic coefficient
- Heat resistance
- Biodegradable
- Flame retardance
- High impact resistance
- Multi-axial impact
- Flexural modulus
- Biocompatibility

**PLA modification with GS Pla**

- GS Pla will increase value of PLA by providing attributes close to those of polyethylene and similar polymers

**Potential of PLA-GS Pla compound**

- Over 25% of GS Pla in PLA can improve PLA heat resistance.

Mitsubishi Chemical Holdings Corporation