Medium-Term Management Plan “PROUD2020” (FY2018–FY2020)

February 14, 2018

KURARAY CO., LTD.
Although net sales and operating income did not meet targets, the latter marked a record high for the third consecutive year. The operating margin met the target value in “GS-STEP”.

Net Sales (Billions of yen)

2012: 369.4
2013: 413.5
2014: 485.0
2015: 521.7
2016: 485.2
2017: 518.4
GS-STEP target for 2017: 650.0

Op. Income (Billions of yen) / OP margin

2014: OP margin 10.6%
2017: OP margin 14.4%
GS-STEP targets for 2017: OP margin 13.8%

2012: EPS ¥78
2013: EPS ¥153
2014: EPS ¥163
GS-STEP target for 2017: EPS ¥163
Steadily executed various initiatives based on key management strategies

**Deeping of core businesses**

- 3-year cumulative total of capital expenditure: ¥153.1 billion
- Proactively allocated to vinyl acetate-related business, etc.
- Established a PVA resin production facility in the United States, and boosted sales volume
- Developed new demand for EVAL in emerging countries
- Strengthened our sales structure for PVB film and GENESTAR for automotive use
- Conducted feasibility studies for plant construction in Thailand with an eye to producing isoprene, elastomers and GENESTAR

**Major facility expansions**

<table>
<thead>
<tr>
<th>Year</th>
<th>Facility Expansion</th>
</tr>
</thead>
</table>
| 2015 | A new PVA resin plant in North America  
+40,000 tons |
| 2016 | A new PVA resin plant in North America  
+40,000 tons  
EVAL facilities in Europe  
+11,000 tons  
Water-soluble PVA film |
| 2017 | Facilities for optical-use PVA film (Saijo)  
+20 million m² |

Steadily executed various initiatives based on key management strategies

Technological innovation
- Established technologies to produce KURALON filament
- Built a new process to enhance VECTRAN production efficiency
- Enhanced functionalities of films by modifying the raw material resin

Next-generation growth model
- Acquired Plantic Technologies Ltd., an Australian company that produces biomass-based gas-barrier materials
- Launched the Carbon Materials Division and decided to acquire Calgon Carbon Corporation, a major U.S.-based activated carbon manufacturer
- Launched new dental materials made using the combination of organic and inorganic technologies while expanding CAD/CAM businesses

Optimum allocation of management resources
- Introduced a global SAP system
- Brought a global human resource management system online

Contribution to the environment
- Developed the market for biomaterial-based products (Plantic, LFR)
- Environmental businesses: Water and exhaust gas treatment system applications (related to aqua and carbon materials businesses)
- Contributed to reduction in food loss (EVAL)
Medium-Term Management Plan “PROUD2020”
“Kuraray Vision 2026” Long-Term Vision

Set long-term vision and targets for the centennial of Kuraray’s founding

The Kuraray Group’s Mission

We are committed to developing new fields of business using pioneering technology that improves the environment and enhances the quality of life throughout the world.

—For people and the planet—to achieve what no one else can—

Forecast of Our Business Environment in 2026

- Major changes to rules, laws, and regulations as well as the emergence of revolutionary technologies
- Continued advancement of digitization, such as data communication networks and artificial intelligence (AI)
- Increasing presence of emerging countries
- Growing environmental and social problems, such as water and food scarcity

- Intensifying borderless competition as new companies enter the market
- More chances to solve problems with chemistry amid severe competition in those areas
- More chances to enhance competitiveness through digitization and IoT
“Kuraray Vision 2026” Long-Term Vision

Vision for Kuraray

“Specialty Chemical Company growing sustainably by incorporating new foundational platforms into its own technologies”

Basic Policies

Pursue competitive superiority
Increase existing businesses’ competitive edge

Expand new business fields
Strengthen our business portfolio while expanding the scope of operations

Enhance comprehensive strength of the Kuraray Group
Establish global business foundations to ensure the realization
“Kuraray Vision 2026” Long-Term Vision

Building a Stable Business Portfolio
Developing the Next Business Pillar to Succeed Vinyl Acetate

Vinyl acetate

Isoprene

Functional materials
(e.g., carbon materials)

Fibers and textiles, etc.

New businesses

Monomer development: Achieve greater functionalities by employing polymerization and processing technologies
"PROUD2020" New Medium-Term Management Plan
Making Kuraray a Company That People Can Take Pride In

<table>
<thead>
<tr>
<th>Society</th>
<th>Environmental Safety</th>
<th>Workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create shared value with society as a good corporate citizen</td>
<td>• Provide safe and high-quality products and services that can help protect the global environment</td>
<td>• Boost the morale and enthusiasm of employees</td>
</tr>
<tr>
<td>• Gain trust through proper and open management</td>
<td>• Reduce environmental burden in business activities</td>
<td>• Foster a fair and open workplace</td>
</tr>
<tr>
<td>• Ensure thorough compliance</td>
<td>• Realize workplaces where people can safely work at ease without accidents</td>
<td>• Promote diversity</td>
</tr>
<tr>
<td></td>
<td>• Reduce environmental burden in business activities</td>
<td>• Strengthen initiatives to reform working styles</td>
</tr>
<tr>
<td></td>
<td>• Realize workplaces where people can safely work at ease without accidents</td>
<td></td>
</tr>
</tbody>
</table>
"PROUD2020" Medium-Term Management Plan: Key Strategies

PROUD 20 20: Five Elements

- Profitability
- Diversity
- Responsibility
- Unique products & services
- Opportunity

アルパカの顔: Five Elements

"PROUD2020" Medium-Term Management Plan: Key Strategies

PROUD 20 20: Five Elements

- Profitability
- Diversity
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- Unique products & services
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アルパカの顔: Five Elements

"PROUD2020" Medium-Term Management Plan: Key Strategies

PROUD 20 20: Five Elements

- Profitability
- Diversity
- Responsibility
- Unique products & services
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アルパカの顔: Five Elements
“PROUD2020” Medium-Term Management Plan: Key Strategies

Pursue competitive superiority
- Develop high-value-added products and applications based on customer needs
- Create more demand in emerging countries
- Achieve innovation of production and operational processes through use of IoT

Expand new business fields
- Create new businesses by improving on Kuraray’s own technologies and incorporating external ones
- Capture new business areas by M&A and alliance
- Establish a new business model bundling technology and services

Enhance comprehensive strength of the Kuraray Group
- Establish global business foundations
- Create a workplace in which employees find their job rewarding
- Cultivate a strong culture of unity within the Kuraray Group

Contribute to the environment
- Provide products contributing to environmental protection
- Put in place production process with low environmental footprint
- Provide products that help enhance quality of life (QOL)
## “PROUD2020” Medium-Term Management Plan: Numerical Targets

<table>
<thead>
<tr>
<th></th>
<th>FY2017 results</th>
<th>FY2018 forecasts</th>
<th>FY2020 targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net sales</strong></td>
<td>¥518.4 billion</td>
<td>¥540.0 billion</td>
<td>¥650.0 billion</td>
</tr>
<tr>
<td><strong>Op. income</strong></td>
<td>¥75.1 billion</td>
<td>¥77.0 billion</td>
<td>¥90.0 billion</td>
</tr>
<tr>
<td><strong>OP margin</strong></td>
<td>14%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>¥53.6 billion</td>
<td>¥49.0 billion</td>
<td>¥62.0 billion</td>
</tr>
</tbody>
</table>

*Exchange rate: ¥112/US$, ¥127/euro, ¥110/US$, ¥130/euro, ¥110/US$, ¥130/euro*

*Raw fuel prices: ¥39,000/kl, ¥43,000/kl, ¥43,000/kl*

*“Rounded to the nearest whole number*
Secure a solid position in the market and sustainable growth by cultivating new markets and a shift to high-value added products

**Net Sales (Billions of yen)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>266.9</td>
<td>325.0</td>
</tr>
</tbody>
</table>

**Op. Income (Billions of yen)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>61.3</td>
<td>67.0</td>
</tr>
</tbody>
</table>

**PVA resin**
- Shift to high-value-added products
- Optimally manage global production operations

**PVB film**
- Bolster the development and sale of highly functional films for automotive use
- Expand sales of high-strength films for construction use

**Optical-use PVA film**
- Sales will rise with LCD demand while maintaining a solid market share
- Add new functions and enhance workability to satisfy the latest market and customer needs

**Water-soluble PVA film**
- Execute the timely expansion of production facilities in step with growth in operations
- Allocate development resources to new industrial applications

**EVAL**
- Create new demand in emerging countries and boost sales
- Expand EVAL-related operations to help reduce food loss
“PROUD2020” Medium-Term Management Plan: Isoprene

Create new markets and applications in anticipation of the launch of a new plant in Thailand

<table>
<thead>
<tr>
<th>Net Sales (Billions of yen)</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>56.4</td>
<td>71.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Op. Income (Billions of yen)</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.4</td>
<td>10.0</td>
</tr>
</tbody>
</table>

**Isoprene chemicals**
- Pursue the expansion of “only one” unique products
- Commercialize newly developed items, such as oil-gas chemicals

**Elastomers**
- Build a more sophisticated portfolio of products by enhancing their functionalities
- Expand sales of liquid rubber on a global basis

**GENESTAR**
- Expand the range of products for automotive applications, such as those for use in car electronics components
- Develop new polymer

**Planned overview of the new plant in Thailand**

- Operational kickoff: 2021 onward
- Production capacity: Elastomers: 16,000t/year  
  GENESTAR: 13,000t/year
“PROUD2020” Medium-Term Management Plan: Functional Materials

Roll out products embodying our technological strengths to provide new value to markets

**Net Sales (Billions of yen)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>55.2</td>
<td>74.0</td>
</tr>
</tbody>
</table>

**Op. Income (Billions of yen)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>6.3</td>
<td>8.0</td>
</tr>
</tbody>
</table>

**Methacryl**

- Expand the sales of newly developed products, such as soft resin and multi-layered substrates
- Bolster the marketing of highly functional grades of optical-use resin

**Medical (dental materials)**

- Expand sales of CAD/CAM products (e.g., zirconia block)
- Enhance to provide information for users

**Carbon Materials**

- Swiftly create synergies via collaboration with Calgon Carbon
- Expand the range of products for use in automotive canisters
- Expand the sales of products for battery applications (capacitors and LiB*)

* Lithium ion Battery

* The CLARINO business has been moved to the Fibers & Textiles segment from 2018. The 2017 figures presented above reflect the segment change.
Boost sales in existing applications while pursuing uniqueness of products

**CLARINO**
- Roll out products targeting luxury brands
- Achieve full-scale entry into the automotive interior market

**Fiber and Industrial Materials**
- Promote the VIP project for KURALON
- Expand VECTRAN-related operations

**Consumer Goods and Materials**
- Expand sales of new Melt Blown nonwoven fabrics
- Accelerate expansion into Southeast Asia

* The 2017 figures above include the CLARINO business.
Establish and deepen core technologies (enhance our technological competitiveness)

- Bolster R&D of catalysts
  Design highly efficient catalysts and develop new processes (for vinyl acetate, new polymers, etc.)
- Bolster R&D of polymer materials

Strengthen and expand existing businesses (further enhance product functionalities and meet customer needs)

- Support business functions on a global basis
  Develop new products, enhance quality and performance, help achieve process innovation
- Strengthen IP strategies

R&D 3 Policies

- VA-related polymers
- Polymers
- Molding and processing
- Synthesis and catalysis
- Analysis

Promote new businesses that will turn into profit contributors in the near future
Promote new businesses that will turn into profit contributors in the near future

- **VECSTAR liquid crystalline polymer film**
  Circuit substrate materials boasting low transmission loss for use in high-speed communication systems

- **Micro-patterning films/sheets**
  Imaging technologies backed by optical control solutions

- **Smartphone components**
  Vehicle-mount millimeter-wave radar

- **Polishing pads for semiconductors**
  Enhance flattening capabilities while minimizing surface damage attributable to abrasion

- **Vehicle mount head-up displays**
  Virtual Reality (VR) devices

- **Bio Hard Carbon**
  Plant-based materials boasting superior durability and charge-discharge properties

- **Semiconductor industry**
  Imaging technologies backed by optical control solutions

- **LiB anode materials**
  Plant-based materials boasting superior durability and charge-discharge properties
### Sales and Operating Income by Segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>FY17 results</th>
<th>FY18 forecasts</th>
<th>FY20 plan (final year)</th>
<th>Change (FY17 –FY20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>266.9</td>
<td>61.3</td>
<td>282.0</td>
<td>58.5</td>
</tr>
<tr>
<td>Isoprene</td>
<td>56.4</td>
<td>8.4</td>
<td>59.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Functional materials</td>
<td>55.2</td>
<td>6.3</td>
<td>59.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Fibers &amp; textiles</td>
<td>66.4</td>
<td>7.2</td>
<td>68.0</td>
<td>7.5</td>
</tr>
<tr>
<td>Trading</td>
<td>128.8</td>
<td>3.9</td>
<td>135.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Other Business</td>
<td>54.2</td>
<td>3.3</td>
<td>51.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Elimination &amp; Corporate</td>
<td>(109.5)</td>
<td>(15.3)</td>
<td>(114.0)</td>
<td>(12.5)</td>
</tr>
<tr>
<td>Total</td>
<td>518.4</td>
<td>75.1</td>
<td>540.0</td>
<td>77.0</td>
</tr>
</tbody>
</table>

*The CLARINO business has been moved to the fibers and textiles segment from 2018. The 2017 figures presented above reflect the segment change.*
"PROUD2020" Medium-Term Management Plan: Key Initiatives

1. Build a stable business portfolio by executing key management strategies
   ① Conduct continuous capital expenditure for growth in core and new businesses
   ② Isoprene: Pursue business expansion via a project in Thailand
   ③ Carbon materials: Swiftly realize synergies with Calgon Carbon
   ④ Establish global business foundations

2. Achieve growth in operating income
   FY17 result: ¥75.0 billion
   Fiscal Year 20 target: ¥90.0 billion
   CAGR: 6.2%
   OP margin to net sales target for FY20: 14%

3. Improve earnings per share (EPS)
   FY17 result: ¥131
   ¥152 when the U.S. tax cut was taken into account
   FY20 target: ¥176
   +¥45
“PROUD2020” Medium-Term Management Plan: Capital Expenditure/M&A

Set aside a 3-year budget totaling ¥250.0 billion
Of this, around 60% is earmarked for strategic and growth investments

Strategic investment
- Construct a new plant for VAM
- Build a global SAP system

Growth investment
- Expand facilities for optical-use PVA film
- Expand facilities for water-soluble PVA film
- Expand facilities for PVB film
- Construct a new plant for EVAL
- Expand facilities for liquid rubber
- Expand facilities for dental materials

Note: The aforementioned figure excludes funds budgeted for the construction of a new Isoprene plant in Thailand and new businesses

Consider and carry out M&A by procuring funds from other sources
“PROUD2020” Medium-Term Management Plan: Financial Strategies

Invest cash generated from business activities mainly into future growth.
Set a minimum dividend and provide returns to shareholders in accordance with business performance.

**FY2018 - FY2020 Operating Cash Flow**

- **¥300.0 billion**

**Capital Expenditure**

- Carry out proactive investment for business growth.
- Set aside ¥250.0 billion for 3 years (¥210.0 billion to be calculated as payments are made).

**Shareholder Returns**

- Total payout ratio: 35% or higher.
- Annual dividends per share: ¥40 or higher.
- Flexibly carry out share buybacks.
### Global warming countermeasures

<table>
<thead>
<tr>
<th>Japan</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce GHG emission intensity index at least 1% year on year</td>
<td>Reduce energy intensity index at least 1% year on year</td>
</tr>
</tbody>
</table>

### Water resources

<table>
<thead>
<tr>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce water intensity index at least 1% year on year</td>
</tr>
</tbody>
</table>

### Waste reduction

<table>
<thead>
<tr>
<th>Japan</th>
</tr>
</thead>
</table>
| Pursue further waste reduction  
Reduce 1% or more from the FY16 level |

<table>
<thead>
<tr>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce final landfill volume to less than the FY16 level</td>
</tr>
</tbody>
</table>

### Chemical substance emissions

<table>
<thead>
<tr>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce emission volume of PRTR substances to less than the FY16 level</td>
</tr>
</tbody>
</table>
All figures are rounded to the nearest hundred million yen.

This presentation contains various forward-looking statements which are based on the current expectations and assumptions of future events. All figures and statements with respect to the future performance, projections, and business plans of Kuraray and its group companies constitute forward-looking statements. Although Kuraray believes that its expectations and assumptions are reasonable, actual results and trends of Kuraray’s performance could differ materially from those expressed or implied by such figures or statements due to risks and uncertainties in the future business circumstances. The factors which may cause such difference include, without limitation: (1) general market and economic conditions in Asia including Japan, the U.S., Europe and other regions; (2) fluctuations of currency exchange rates, especially between the Japanese yen and the U.S. dollar and other foreign currencies; (3) changes in raw material and fuel costs; (4) industrial competition and price fluctuations in Japan and international markets; (5) advance or delay in the construction of new plants and production lines; (6) successful development of new products and technologies; and (7) changes in laws and regulations (including tax and environmental) and legal proceedings.