FY2018 Results and FY2019 Forecasts

Sumitomo Electric Industries, Ltd.
2019/5/24
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1. FY2018 Results
## 1-1. FY2018 Results (PL)

<table>
<thead>
<tr>
<th></th>
<th>FY2017 Actual ①</th>
<th>FY2018 Revised Plan ②</th>
<th>FY2018 Actual ③</th>
<th>Growth ③-①</th>
<th>Difference ③-②</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>3,082.2</td>
<td>3,180.0</td>
<td>3,178.0</td>
<td>+95.7</td>
<td>(2.0)</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>173.1</td>
<td>175.0</td>
<td>166.3</td>
<td>(6.9)</td>
<td>(8.7)</td>
</tr>
<tr>
<td>Non-Operating Income/Expenses</td>
<td>21.9</td>
<td>18.0</td>
<td>22.4</td>
<td>+0.5</td>
<td>+4.4</td>
</tr>
<tr>
<td>Ordinary Income</td>
<td>195.0</td>
<td>193.0</td>
<td>188.6</td>
<td>(6.4)</td>
<td>(4.4)</td>
</tr>
<tr>
<td>Gain on return of assets from retirement benefit trust</td>
<td>–</td>
<td></td>
<td>+8.9</td>
<td>+8.9</td>
<td></td>
</tr>
<tr>
<td>Gain on sales of investment securities</td>
<td>13.5</td>
<td>–</td>
<td>(13.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss on disposal of fixed assets</td>
<td>(3.7)</td>
<td>(3.1)</td>
<td>+0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impairment loss on fixed assets</td>
<td>(3.4)</td>
<td>(10.7)</td>
<td>(7.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restructuring expenses</td>
<td>(4.0)</td>
<td>(71.0)</td>
<td>(2.4)</td>
<td>+1.6</td>
<td></td>
</tr>
<tr>
<td>Loss on construction related accident</td>
<td>(4.1)</td>
<td>–</td>
<td>+4.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit before Income Taxes</td>
<td>193.3</td>
<td>181.4</td>
<td>(11.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit Attributable to Non-Controlling Interests</td>
<td>(73.0)</td>
<td>(63.3)</td>
<td>+9.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit Attributable to Owners of the Parent</td>
<td>120.3</td>
<td>122.0</td>
<td>118.1</td>
<td>(2.3)</td>
<td>(3.9)</td>
</tr>
</tbody>
</table>
1-2. OP variation factors from FY2017 to FY2018

Despite sales expansion and global cost reduction, operating profit (OP) decreased by ¥6.9 bn from the previous period due to a price decline, increase in R&D costs for the future and additional tariffs between China and the U.S..

(Unit price decline/ Product mix) 

**Unit price decline/ Product mix**

- **(42.7)**
- **Depreciation (2.7)**
- **(7.3)**
- **Forex impact/ additional tariff and others**
- **(16.6)**
  - **R&D and others**
  - **Sales volume increase**

(%) : OP Rate

- **Cost reduction**
  - +26.0
  - +36.5

**Average Rate**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>110.85</td>
<td>110.92</td>
</tr>
<tr>
<td>EUR</td>
<td>129.66</td>
<td>128.44</td>
</tr>
</tbody>
</table>

**FY2017 Actual**

- ¥173.1 bn (5.6%)

**FY2018 Actual**

- ¥166.3 bn (5.2%)
1-3. Sales and OP by Segment

From the previous period, OP decreased in the automotive and infocommunications segments, but increased in the electronics, environment & energy, and industrial materials & others segments.

<table>
<thead>
<tr>
<th>Segment</th>
<th>FY2017 Actual ①</th>
<th>FY2018 Revised Plan ②</th>
<th>FY2018 Actual ③</th>
<th>Growth ③—①</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>¥ bn</td>
<td>Sales</td>
<td>OP</td>
<td>Sales</td>
</tr>
<tr>
<td>Automotive</td>
<td>1,632.0</td>
<td>96.8</td>
<td>1,700.0</td>
<td>88.0</td>
</tr>
<tr>
<td>Infocommunications</td>
<td>220.3</td>
<td>18.6</td>
<td>220.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Electronics</td>
<td>246.3</td>
<td>5.4</td>
<td>230.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Environment and Energy</td>
<td>718.0</td>
<td>24.1</td>
<td>760.0</td>
<td>28.0</td>
</tr>
<tr>
<td>Industrial Materials and Others</td>
<td>343.1</td>
<td>28.2</td>
<td>370.0</td>
<td>32.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,082.2</strong></td>
<td><strong>173.1</strong></td>
<td><strong>3,180.0</strong></td>
<td><strong>175.0</strong></td>
</tr>
</tbody>
</table>

※ Differences between the aggregate of all segments and Total are consolidated eliminations.
### 1-3. Sales and OP by Segment

<table>
<thead>
<tr>
<th></th>
<th>¥bn</th>
<th>FY2017 Actual ①</th>
<th>FY2018 Revised Plan ②</th>
<th>FY2018 Actual ③</th>
<th>Growth ③—①</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sales</td>
<td>OP</td>
<td>Sales</td>
<td>OP</td>
</tr>
<tr>
<td>Automotive</td>
<td>1,632.0</td>
<td>96.8</td>
<td>1,700.0</td>
<td>1,709.4</td>
<td>84.7</td>
</tr>
</tbody>
</table>

**[Performance summary]**
- While sales increased thanks to new vehicle launches and new orders in Japan and the U.S., OP decreased due to the impact of the WLTP in Europe and profitability decline of anti-vibration rubber, as well as cost increases caused by R&D investments and tariffs between China and the U.S.

**<R&D>**
- We made active investments to strengthen development of CASE-related products. We integrated the System Division into the Automotive Business Unit in FY 2018 to strengthen product development in software and connected car fields.

**<Tariffs between China and the U.S.>**
- Additional tariffs increased our costs in FY 2018. We took measures to minimize the impact, including production transfer.

**<Harness business in Europe>**
- The WLTP decreased our sales volume and production efficiency. Profitability decreased due to old models’ price decline and repeated design changes by the customer.

**<Sumitomo Riko>**
- OP decreased for the following reasons: decreased productivity in the U.S. due to labor shortage; a cost increase due to the market price rise of steel for anti-vibration rubber; and decreased demand for printer parts and some other general industrial goods.
1-3. Sales and OP by Segment

<table>
<thead>
<tr>
<th></th>
<th>FY2017 Actual ①</th>
<th>FY2018 Revised Plan ②</th>
<th>FY2018 Actual ③</th>
<th>Growth ③ − ①</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>¥bn Sales</td>
<td>OP Sales</td>
<td>¥bn Sales</td>
<td>OP Sales</td>
</tr>
<tr>
<td>Environment and Energy</td>
<td>718.0 24.1</td>
<td>760.0 28.0</td>
<td><strong>759.8</strong> 30.1</td>
<td>+41.8 +5.9</td>
</tr>
</tbody>
</table>

[Performance summary]

Sales and OP increased thanks to an increase in large-scale overseas electric power cable projects, Sumitomo Densetsu’s steady facility-construction business mainly in the Tokyo metropolitan area, and sales increases in rectangular magnet wires for electric vehicles and in Celmet.

<Electric power cables>
(1) HV cables: Sales increased thanks to an increase in both overseas projects (e.g. large-scale DC cables in Europe and India, submarine cables in the Middle East) and domestic renewable energy projects.
(2) LV cables: Sales increased thanks to a demand increase in the construction field mainly in the Tokyo metropolitan area.

<Copper wire rods>
Sales increased at STEC, which we established in Thailand as our third base for copper wire rods and our integrated production base for aluminum wires (STEC started producing copper rods in 2015 and aluminum wires in 2016). A three-base (Japan, Indonesia and Thailand) of copper wire rod manufacturing has taken root.

<Others>
Magnet wires: Sales of rectangular magnet wires for electric vehicles increased.
Upfront costs for capacity increase occurred.
Celmet: Sales increased thanks to sales of electric vehicles.
### 1-3. Sales and OP by Segment

While OP exceeded the forecast in the environment & energy segment, it fell short of forecasts in the other four segments due to the impact of China’s economic slowdown and shipment postponements to the next period.

<table>
<thead>
<tr>
<th>Product Line</th>
<th>FY2017 Actual ① Sales (¥bn)</th>
<th>FY2018 Revised Plan ② Sales (¥bn)</th>
<th>FY2018 Actual ③ Sales (¥bn)</th>
<th>Difference ③-② Sales (¥bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>1,632.0</td>
<td>1,700.0</td>
<td>1,709.4</td>
<td>+9.4</td>
</tr>
<tr>
<td>Infocommunications</td>
<td>220.3</td>
<td>220.0</td>
<td>208.4</td>
<td>(11.6)</td>
</tr>
<tr>
<td>Electronics</td>
<td>246.3</td>
<td>230.0</td>
<td>228.9</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Environment and Energy</td>
<td>718.0</td>
<td>760.0</td>
<td>759.8</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Industrial Materials and Others</td>
<td>343.1</td>
<td>370.0</td>
<td>357.8</td>
<td>(12.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,082.2</td>
<td>3,180.0</td>
<td>3,178.0</td>
<td>(2.0)</td>
</tr>
</tbody>
</table>

※ Differences between the aggregate of all segments and Total are consolidated eliminations.
### 1-5. BS as of FY2018 end

<table>
<thead>
<tr>
<th></th>
<th>FY2016 Actual</th>
<th>FY2017 Actual</th>
<th>FY2018 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Assets</strong></td>
<td>1,426.6</td>
<td>1,401.7</td>
<td>1,513.6</td>
</tr>
<tr>
<td><strong>Non-Current Assets</strong></td>
<td>1,480.7</td>
<td>1,598.2</td>
<td>1,539.6</td>
</tr>
<tr>
<td><strong>Current Liabilities</strong></td>
<td>824.2</td>
<td>803.7</td>
<td>880.8</td>
</tr>
<tr>
<td><strong>Non-Current Liabilities</strong></td>
<td>454.5</td>
<td>432.1</td>
<td>396.2</td>
</tr>
<tr>
<td>(Interest Bearing Debt)</td>
<td>(511.0)</td>
<td>(492.6)</td>
<td>(540.7)</td>
</tr>
<tr>
<td><strong>Shareholders' Equity</strong></td>
<td>1,324.6</td>
<td>1,410.4</td>
<td>1,466.1</td>
</tr>
<tr>
<td><strong>Accumulated Other</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comprehensive Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91.1</td>
<td>129.0</td>
<td>84.8</td>
<td></td>
</tr>
<tr>
<td><strong>Non- Controlling Interests</strong></td>
<td>212.9</td>
<td>224.6</td>
<td>225.4</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>2,907.3</td>
<td>2,999.9</td>
<td>3,053.3</td>
</tr>
<tr>
<td><strong>Shareholders' Equity Ratio</strong></td>
<td>48.7%</td>
<td>51.3%</td>
<td>50.8%</td>
</tr>
<tr>
<td><strong>Debt/Equity Ratio</strong></td>
<td>0.36</td>
<td>0.32</td>
<td>0.35</td>
</tr>
</tbody>
</table>

※Operating Profit / Invested Assets (ROIC) = \[
\frac{\text{Operating Profit}}{\text{Total Assets} - \text{Interest-Free Liabilities}}
\]

Return on Equity (ROE)

<table>
<thead>
<tr>
<th></th>
<th>FY2016 Actual</th>
<th>FY2017 Actual</th>
<th>FY2018 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Profit /</strong></td>
<td>7.2%</td>
<td>7.9%</td>
<td>7.3%</td>
</tr>
<tr>
<td><strong>Invested Assets (ROIC)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Return on Equity (ROE)</strong></td>
<td>7.7%</td>
<td>8.1%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>
2. FY2019 Forecasts
## 2-1. FY2019 Forecasts (PL)

<table>
<thead>
<tr>
<th></th>
<th>FY2018 Actual (¥bn)</th>
<th>FY2019 Plan</th>
<th>Growth 2-1 (¥bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>3,178.0</td>
<td>1,670.0</td>
<td><strong>3,200.0</strong></td>
</tr>
<tr>
<td><strong>Operating Profit</strong></td>
<td>166.3</td>
<td>117.0</td>
<td><strong>167.0</strong></td>
</tr>
<tr>
<td><strong>Non-Operating</strong></td>
<td>22.4</td>
<td>11.0</td>
<td><strong>18.0</strong></td>
</tr>
<tr>
<td><strong>Income/Expenses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ordinary Income</strong></td>
<td>188.6</td>
<td>128.0</td>
<td><strong>185.0</strong></td>
</tr>
<tr>
<td><strong>Net Extraordinary</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit/Loss</td>
<td>(7.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Profit before</strong></td>
<td>181.4</td>
<td>(22.0)</td>
<td><strong>(66.0)</strong></td>
</tr>
<tr>
<td>Income Taxes</td>
<td></td>
<td>(44.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Profit Attributable</strong></td>
<td>(63.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Non-Controlling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Profit Attributable</strong></td>
<td>118.1</td>
<td>35.0</td>
<td><strong>119.0</strong></td>
</tr>
<tr>
<td>to Owners of the Parent</td>
<td></td>
<td>84.0</td>
<td></td>
</tr>
</tbody>
</table>

**Forex rate**
- ¥110/USD
- ¥125/EUR

**FY2019 Plan**
- 1H Plan
- 2H Plan
- Annual Plan

**Growth**
- 2-1

*FY2018 Growth*
2-2. OP variation factors from FY2018 to FY2019

Despite our efforts in global sales expansion and cost reduction, OP will probably be about the same level as the previous period due to price declines and increases in depreciation and R&D investments.

### Average Rate

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019P</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>110.92</td>
<td>110</td>
</tr>
<tr>
<td>EUR</td>
<td>128.44</td>
<td>125</td>
</tr>
</tbody>
</table>

Despite our efforts in global sales expansion and cost reduction, OP will probably be about the same level as the previous period due to price declines and increases in depreciation and R&D investments.
2-3. Sales and OP by Segment

In the automotive segment, sales increased but OP will probably be about the same level as the previous period due to increases in R&D and depreciation costs. In the infocommunications segment, OP will probably decrease due to the impact of price declines. In the environment & energy segment, OP will probably be about the same level as the previous period. In the electronics and industrial materials & others segments, OP is expected to increase thanks to sales expansion and cost reduction.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>¥ bn Sales</td>
<td>Sales OP</td>
<td>Sales OP</td>
<td>Sales OP</td>
<td>Sales OP</td>
</tr>
<tr>
<td>Automotive</td>
<td>1,709.4</td>
<td>84.7</td>
<td>860.0</td>
<td>900.0</td>
<td>1,760.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29.0</td>
<td>56.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Infocommunications</td>
<td>208.4</td>
<td>16.4</td>
<td>100.0</td>
<td>120.0</td>
<td>220.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.0</td>
<td>10.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Electronics</td>
<td>228.9</td>
<td>7.0</td>
<td>90.0</td>
<td>110.0</td>
<td>200.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.0</td>
<td>8.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Environment and Energy</td>
<td>759.8</td>
<td>30.1</td>
<td>340.0</td>
<td>400.0</td>
<td>740.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.0</td>
<td>24.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Industrial Materials and Others</td>
<td>357.8</td>
<td>28.2</td>
<td>180.0</td>
<td>190.0</td>
<td>370.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13.0</td>
<td>19.0</td>
<td>32.0</td>
</tr>
<tr>
<td>Total</td>
<td>3,178.0</td>
<td>166.3</td>
<td>1,530.0</td>
<td>1,670.0</td>
<td>3,200.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50.0</td>
<td>117.0</td>
<td>167.0</td>
</tr>
</tbody>
</table>

※Differences between the aggregate of all segments and Total are consolidated eliminations.
2-4. Our major efforts in FY 2019

Our business environment and policies
➢ Our business environment in FY 2019 seems to remain tough for the time being, due to slow sales of automobiles in China and Europe, low production of smartphones, and a decline in optical fiber prices.
➢ We will speed up working on new promising markets and products, including 5G, new on-vehicle products, and renewable energy, and further strengthen our competitiveness in cost, quality, and time to delivery.

Segment-specific efforts

Automotive
✓ Enhance cost competitiveness in wiring harness and improve business profitability in Europe.
✓ Quick recovery of anti-vibration rubber business profitability.
✓ Accelerate development of CASE related products and promote new overseas customer acquisition.

Infocommunications
✓ Reduce the costs of standard single-mode optical fibers/preforms and expand sales of high-end products.
✓ Introduce differentiated products into data centers and expand sales of high-performance optical fibers.
✓ Enhance production capacity of electronic devices for 5G base stations and improve our earning structure for optical components.

Electronics
✓ Reduce the total cost of FPCs for mobile devices and develop new FPC products and new markets for them.
✓ Expand sales of automotive cables and tab-leads for EV batteries.

Environment & energy
✓ Secure large-scale overseas power cable projects and acquire domestic demand for replacement projects.
✓ Expand sales in the renewable energy market by utilizing the capital ties between Sumitomo Densetsu and Nissin Electric.
✓ Increase production capacity and expand sales of our rectangular magnet wires for electric vehicles.

Industrial materials & others
✓ Expand sales of hardmetal cutting tools globally and develop new products including tools for aircraft.
✓ Enhance the cost and production systems for sintered components, PC steel wires, and steel wires for springs.
2-5. Capital Investment by Region/Segment

Capital investment in FY2019 are planned to be ¥193.0bn in total.
2-6. R&D Expenditures by Segment

R&D expenditures in FY2019 are planned to be ¥133.0bn in total.

※ Basic and Applied research : 30%
Prototype Development : 70%
2-7. Dividend

FY2019 annual dividend is planned to be ¥48/share.

Net Income per Share (Yen)
- FY2010: 89.02
- FY2011: 74.21
- FY2012: 47.85
- FY2013: 84.15
- FY2014: 151.00
- FY2015: 114.73
- FY2016: 137.61
- FY2017: 154.29
- FY2018: 151.38
- FY2019P: 152.58

Dividend Payout Ratio
- FY2010: 21.3%
- FY2011: 25.6%
- FY2012: 41.8%
- FY2013: 26.1%
- FY2014: 19.9%
- FY2015: 30.5%
- FY2016: 29.1%
- FY2017: 29.8%
- FY2018: 31.7%
- FY2019P: 31.5%
3．R&D Activities
3-1. R&D Organization

- Advanced Automotive Systems
- Power Systems
- Information Network
- Energy and Electronics Materials
- Frontier Technologies
- Power Device
- Analysis Technology
- IoT, Cyber-security

- Advanced Materials
- Transmission Device
- Analysis Technology

- Overseas Operations
  ✓ Innovation Core SEI (U.S.A, Germany)
  San Jose, CA, U.S.A
  Düsseldorf, Germany
  → Research North American and European market and develop new businesses
  ✓ China Analysis Technology Center
  Suzhou, Jiangsu, China
  → Supports production and development operations in China

- R&D Operations of Major Group Companies
  ✓ AutoNetworks Technologies, Ltd. (Yokkaichi & Suzuka, Mie)
  ✓ A.L.M.T. Corp. (Toyama & Hyogo)
  ✓ Nissin Electric Co., Ltd. (Kyoto)
  ✓ Sumitomo Riko Company Ltd. (Aichi)

- Optical Communications
- Transmission Device
- Frontier Technologies
- Analysis Technology
3-2. R&D investments and policies

**Sumitomo Electric Group’s R&D costs**
- ¥129.6 bn/yr. (FY 2018 actual)
  - Ratio to sales: staying at around 4%
- Segment breakdown
  - Automotive: approx. 60%
  - R&D Unit: approx. one-third
  - Divisions and affiliated companies: approx. two-thirds

**Operation policies**
- Creation and enhancement of leading technologies.
  - Continue to enhance core technologies from materials to processes
  - Create innovations in advance of future changes in the automotive and energy fields and exploits commercialization opportunities
  - Challenge ourselves to create innovative technologies that encourages social reform
- Open innovation
- Ensure consistency with intellectual property strategies and standardization strategies.
3-3. Fields and themes
Research and Development for the Next Generation—Creating innovative technologies and products via far-sighted R&D
With our “connecting technologies,” one of our great advantages, we are creating new products and technologies that will connect vehicles with energy and communications infrastructure.
3-5. R&D in new energy field

We are creating new businesses by developing new technologies and products for expanded renewable energy use and sophisticated management of distributed power sources.

Redox flow batteries

Power grid

Concentrator photovoltaic systems (CPV)

Resource servers

sEMSA

CASE-related new energy field

VPPs*¹

Quick charging stations/connectors

PLC*²/smart meters

Overhead line monitoring

DLR*³

POWER DEPO

HEMS systems/sensors

PV monitoring systems

*¹ VPP: Virtual power plant
*² PLC: Power line communication
*³ DLR: Dynamic line rating (Overhead line temperature, wind speed, and electric power are measured in real time to determine the upper limit of power transmission.)
In fields related to 5G communications, we are developing technologies ranging from long- and short-distance communications infrastructure to smartphones and onboard equipment.

- **Core**
  - 5G antennas and TCUs
  - GaN HEMTs

- **Metro**
  - Optical connectors
  - Optical transceiver modules
  - Optical fusion splicers
  - WDM optical components
  - Ethernet system 1/10 GE-PON
  - 5G base stations
  - 5G optical network
  - Wireless modules for 5G base stations
  - Optical fiber amplifiers
  - Optical switches
  - Optical fiber
  - Optical transceiver modules
  - Optical fiber amplifiers
  - Optical switches
  - Optical fusion splicers
  - WDM optical components
  - Data centers

- **Access**
  - 4K/8K video transmission
  - FPCs
  - Connected cars
  - Onboard networks

- **Terminals**
  - 5G antennas and TCUs
  - Smartphones
  - 4K/8K video transmission
  - Connected cars
  - Onboard networks

- **Cloud**
  - Traffic information system
  - Security systems
  - Traffic control systems

- **Demonstration tests**
  - Cabinet Office’s Cross-ministerial Strategic Innovation Promotion Program
  - MIC-led 5G Comprehensive Demonstration Tests (by KDDI and ATR)
  - NTT Docomo
  - Michinori HD, etc.
Notes on Perspective Information

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1. Market and economic conditions in the United States, Europe, Japan and other Asian countries, especially increases and decreases in personal consumption and capital expenditures.
2. Fluctuations of currency exchange rates, especially between the Japanese yen and the U.S. dollar, the euro and Asian currencies.
3. The ability of Sumitomo Electric and its affiliated companies to cope with rapid technological development.
4. Changes in financial, management, environmental and other presumptions.
5. Current and future laws and regulations in foreign countries involving trade and other activities.

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