FY2015 Results
(from April 1, 2015 to March 31, 2016)

April 28, 2016

This is a translation of materials used for the analyst meeting held in Tokyo, Japan on April 28, 2016

This document contains forward-looking statements that are based on management's expectations, estimates, projection and assumptions that were available and reasonable at the time of release. Actual future results and trends may differ materially from those in the forecasts due to a variety of factors.
Agenda

Summary of financial results for FY2015
( Ended March 31, 2016)

Forecast for FY2016
( End in March 31, 2017)

Segment Information

Capital Expenditure & Depreciation Cost

Mid-term Plan / Ratio of new products to total sales

New products / R&D

Priority Tasks

Financial Condition
## FY2015 Consolidated Financial Results

<table>
<thead>
<tr>
<th></th>
<th>FY2014</th>
<th>FY2015</th>
<th>Growth ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>378.7</td>
<td>435.8</td>
<td>+15%</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>61.6</td>
<td>80.9</td>
<td>+31%</td>
</tr>
<tr>
<td><strong>Ordinary Income</strong></td>
<td>61.1</td>
<td>81.5</td>
<td>+33%</td>
</tr>
<tr>
<td><strong>Profit Attributable to Owners of Parent</strong></td>
<td>41.5</td>
<td>53.3</td>
<td>+28%</td>
</tr>
</tbody>
</table>

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### Exchange Rate

<table>
<thead>
<tr>
<th></th>
<th>USD</th>
<th>EUR</th>
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</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>¥110</td>
<td>¥139</td>
</tr>
<tr>
<td>FY2015</td>
<td>¥120</td>
<td>¥132</td>
</tr>
</tbody>
</table>

*Highest sales and income ever*

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### Highest sales and income ever

*Net Sales* ￥378.7 Bil (FY2014)

*Operating Income* ￥69.4 Bil (FY2007)

*Ordinary Income* ￥69.3 Bil (FY2007)

*Net Income* ￥46.0 Bill (FY2007)

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### Ceramics
Demand for automotive-related products increased due to strong sales of passenger cars in the US and Europe, and trucks in the US.

Tax reduction measures on small passenger cars in China also contributed.

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### Electronics
Reflected the consolidated results of NGK Electronics Devices Inc., and demand for ceramics components for semiconductor manufacturing equipment grew.

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### Power
Shipment of large orders for NAS® batteries from domestics and overseas customers grew significantly.

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### Extraordinary Losses
We recorded provision for loss related to competition law of ￥7.1 billion and impairment loss of ￥4.5 billion.
Change Analysis for FY2015

Sales

<table>
<thead>
<tr>
<th>Product</th>
<th>3/15</th>
<th>3/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics</td>
<td>378.7</td>
<td>435.8</td>
</tr>
<tr>
<td>Power</td>
<td>3/15</td>
<td>3/16</td>
</tr>
<tr>
<td>Electronics</td>
<td>3/15</td>
<td>3/16</td>
</tr>
</tbody>
</table>

Op. Income

<table>
<thead>
<tr>
<th>Product</th>
<th>3/15</th>
<th>3/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics</td>
<td>61.6</td>
<td>80.9</td>
</tr>
<tr>
<td>Power</td>
<td>3/15</td>
<td>3/16</td>
</tr>
<tr>
<td>Electronics</td>
<td>3/15</td>
<td>3/16</td>
</tr>
</tbody>
</table>

FX Rate

<table>
<thead>
<tr>
<th></th>
<th>3/15</th>
<th>3/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>¥/USD</td>
<td>¥110</td>
<td>¥120</td>
</tr>
<tr>
<td>¥/EUR</td>
<td>¥139</td>
<td>¥132</td>
</tr>
</tbody>
</table>
## Forecasts for FY 2016

<table>
<thead>
<tr>
<th></th>
<th>FY2015 (¥Bil.)</th>
<th>FY2016 (¥Bil.)</th>
<th>Growth ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>435.8</td>
<td>410.0</td>
<td>-6%</td>
</tr>
<tr>
<td>Operating Income</td>
<td>80.9</td>
<td>60.0</td>
<td>-26%</td>
</tr>
<tr>
<td>Ordinary Income</td>
<td>81.5</td>
<td>63.0</td>
<td>-23%</td>
</tr>
<tr>
<td>Profit Attributable to Owners of Parent</td>
<td>53.3</td>
<td>44.0</td>
<td>-17%</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USD</td>
<td>¥120</td>
<td>¥108</td>
<td>-¥12</td>
</tr>
<tr>
<td>EUR</td>
<td>¥132</td>
<td>¥120</td>
<td>-¥12</td>
</tr>
</tbody>
</table>

Lower sales and income forecasts compared with the same period last year

- **Ceramics**
  - Demand growth is expected as a result of the increased sales of passenger cars in China, Europe, and the US, and tighter emission regulations. However, sales and income will decrease due to factors such as the stronger yen and higher development costs and startup costs.

- **Electronics**
  - Sales and income forecast to decrease due to factors including the stronger yen and price reductions on ceramic components for semiconductor manufacturing equipment. Sales of wafer products increase as production gets fully underway.

- **Power**
  - In the absence of large orders for NAS batteries, sales forecast to fall sharply and a loss is estimated. Insulators business will show a profit.
Change Analysis for FY2016

Sales

Op. Income

Ceramics

Electronics

Power

FX

△ 17.0

△ 20.6

△ 5.6

△ 1.9

△ 4.7

△ 8.7

△ +8.2

△ +3.6

△ 3.6

△ 1.9

△ 2.6

△ 1.1

<Main Influences>
Quantity effect  + 3.0
Discounts  △ 10.0
Increase of development cost  △ 2.6
Depreciation cost  △ 1.1

3/16

435.8

3/17 Est.

3/16

410.0

△ +8.2

△ +3.6

△ 17.0

△ 20.6

△ 5.6

△ 1.9

△ 4.7

△ 8.7

3/17 Est.

60.0

FX Rate

3/16  ¥120 /USD

3/17 Est.  ¥108 /USD

3/16  ¥132 /EUR

3/17 Est.  ¥120 /EUR
**Power Business**

**Insulators**
- In Japan, aim to improve earnings by capturing replacement demand for insulators installed in the 1970s to the 1990s, and making further cost reductions.
- Overseas, aim to win large-scale orders in Asia and the Middle East, and aim to win direct current and ultra-high-voltage orders in China where the market is expected to grow.

**NAS**
- In the absence of plans for large-scale shipments in Japan and overseas, sales forecast to fall sharply and a loss is estimated.
- Demand for long time use, the key feature of NAS batteries, is currently limited. We expect full-scale demand to arise around 2020. Aim to secure continuous demand by capturing new demand overseas and strengthening partnerships with customers.

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**<After consolidation elimination>**

<table>
<thead>
<tr>
<th></th>
<th>Sales (¥ Bil.)</th>
<th>Operating Income (¥ Bil.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/14</td>
<td>30.6</td>
<td>△ 3.9</td>
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<td>3/15</td>
<td>32.2</td>
<td>△ 2.4</td>
</tr>
<tr>
<td>3/16</td>
<td>34.0</td>
<td>△ 2.5</td>
</tr>
<tr>
<td>3/17 Est.</td>
<td>35.0</td>
<td></td>
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<tr>
<td>NAS batteries</td>
<td></td>
<td>3.1% Operating Income Margin</td>
</tr>
<tr>
<td>3/14</td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>3/15</td>
<td>15.8</td>
<td></td>
</tr>
<tr>
<td>3/16</td>
<td>26.2</td>
<td></td>
</tr>
<tr>
<td>3/17 Est.</td>
<td>5.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>
**Insulators**  Aim to maintain key overseas markets, capture domestic replacement demand and make further cost reductions.

Maintain key overseas markets (North America, Asia, the Middle East, and China)
- Aim to win orders of new projects.
- Differentiate from other products with high-quality specification.

Capture domestic replacement demand
- Securely capture replacement demand for insulators and equipment installed in the 1970s to 1990s.

**NAS® Batteries**  As a result of the increase in global renewable energy, demand for large-scale storage batteries will be actualized in the mid to long term due to factors such as a shortage of system capacity, frequency adjustments and the use of surplus power.

*Global market scale for large-scale storage batteries*

*Verification tests for system measures are currently in progress>*

(Picture) Newly developed containerized NAS® batteries delivered to the Buzen Power Station of Kyushu Electric Power Co., Inc.

- World’s largest battery (power output: 50,000kW / Storage capacity: 300,000 kWh)
- Installation lead time was one third that of conventional batteries
- Overwhelmingly superior large capacity and compact size
● Electronics Components
  • Package products, for which shipment to mobile phone base stations had been stagnant, are in a recovery trend as a result of progress with inventory adjustments. Profit, however, forecast to decrease due to price reductions, increased depreciation costs and development costs. Sales of wafer products increase as production gets fully underway.

● Ceramics for Semiconductor Manufacturing Equipment (SPE-related products)
  • Demand increases as semiconductor companies continue high-level investments for further multi-layering and miniaturization on the back of increased demand for semiconductors for data centers. Profit forecast to fall, however, due to factors such as the stronger yen and price reductions.
  • Focus on cost reduction by working on technological advancement of products and establishing the use of innovative production methods.

● Metal Related Products
  • Sales are decreasing slightly, partly due to the downturn in copper prices. Grow the business by facilitating the development of new materials and products with new uses.

【Sales】

<table>
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<tr>
<th></th>
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<tbody>
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<td>SPE related</td>
<td>58.9</td>
<td>14.5</td>
<td>33.9</td>
<td>35.8</td>
<td></td>
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<tr>
<td>Electric related</td>
<td>4.8</td>
<td>11.3</td>
<td>10.8</td>
<td>10.2</td>
<td></td>
</tr>
<tr>
<td>Soshin Electric Co.</td>
<td>24.3</td>
<td>31.5</td>
<td>36.8</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>Metal related</td>
<td>18.6</td>
<td>21.5</td>
<td>19.9</td>
<td>19.0</td>
<td></td>
</tr>
</tbody>
</table>

【Operating Income】

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPE related</td>
<td>3.1</td>
<td>6.3</td>
<td>7.7</td>
<td>3.0</td>
</tr>
<tr>
<td>Electric related</td>
<td>5.3%</td>
<td>8.0%</td>
<td>7.6%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

<After consolidation elimination>
Forecast for the Electronics Business

Ceramic Components for Semiconductor Manufacturing Equipment

- Demand for NAND memories used in memory devices, including Internet connection equipment and data servers, is growing as the result of advances with IoT.
- Demand for related semiconductor manufacturing equipment is expected to remain at a high level.

Ceramic Package Business (Electronics Components)

- Demand for RF packages for mobile phone base stations was temporarily stagnant in the previous fiscal year. However, demand is currently showing signs of recovery as a result of progress with inventory adjustments of distribution stock.
- RF packages are expected to remain strong for the mid term as a result of growing demand for high-speed communications as well as infrastructure upgrades and expansion in emerging nations.

Wafer Products (Electronics Components)

- Full-scale production of bonded wafers for SAW filters
  - Demand for temperature-compensated SAW filters using our bonded wafers is anticipated to grow for LTE and next-generation LTE.
  - We will make upfront investment in production expansion and start full-scale production from 2016.

New product

Gallium nitride (GaN) wafer

- [Example of final products]
  - Ultra-bright LED
  - Next-generation power semiconductor
  - Samples being evaluated at several major companies

NGK Electronics Devices, Inc. and Corporate headquarter aim to increase profitability by strengthening collaboration and leveraging synergic effects toward further growth.
● Automotive-related
  - Demand for NOx sensors increases due to the expanded application of regulations in Europe (Euro6) and China (China 4).
  - Demand for honeycomb filters expands as the result of increased sales of passenger cars mainly in China, Europe and the US.
  - Demand for LSH increases as the result of the recovery of truck sales in China and the expansion of vehicles subject to non-road emission regulations. Demand for Cd-DPF decreases since some vehicles switch to SiC-DPF.
  - Sales and income are forecast to decrease due to price reductions and increases in startup costs and development costs in addition to the impact from the stronger yen.
  - For the mid to long term, the global trend for tighter emission regulations is set to continue and demand for related products will increase. We will continue to focus on constructing a global production system.

● Industrial processes
  - Investment in the medical, chemical and automobile industries continues, and sales are forecast to remain level.

<After consolidation elimination>
**Demand Trends for Automotive-Related Products**

**Sales of passenger cars (mil. cars)**
- Increase by 3 to 4% per year
- China, India, ASEAN, Others

**Trucks requiring aftertreatment (mil. trucks)**
- Number of trucks requiring aftertreatment will rise due to increased sales in China and tighter emission regulations in emerging nations.
- China, India, ASEAN, Others, United States, Europe, Japan

**Non-roads requiring aftertreatment (mil. cars)**
- Tightening of regulations, mainly in developed countries.
- Full-scale demand also in emerging nations after 2020.
- China, United States, Europe, Japan

**<Total demand forecast for products>**
- Honey-comb, GPF, SiC-DPF for passenger cars
- LSH, Cd-DPF, SiC-DPF for trucks and non-roads
- NOx sensor for diesel passenger cars, trucks, and non-roads

**Honey-comb**
- Demand is increasing at an annual rate of 3 to 4% + α in proportion to the increase in sales of passenger cars

**GPF for gasoline direct injection engines**
- Euro6c Europe (2017)

**SiC-DPF for Diesel**
- Euro6 Europe
- Euro5 Thailand
- Euro6 India

**Cd-DPF • LSH**
- Euro4 India
- Euro4 Thailand

- The introduction of new RDE (Real Driving Emissions) regulations has been decided and demand for GPF and NOx sensors is forecast to increase from around 2018.

- Tightening of regulations is being brought forward and further enhanced in emerging nations as a result of environmental issues (China: introduction of China5 will be bring forward to 2017, regulations in India will be tightened from Euro5 to Euro6 in 2020).
Develop and introduce a state-of-the-art production line in Japan and expand to overseas bases. Further increase production capacity in each area, mainly in Poland (2nd plant), Ishikawa (NOx sensors) and the new manufacturing base in Thailand.
Capital Expenditure & Depreciation Cost

Total of ¥200.0bil capital expenditure in 3 years, including investment in new products for increased automotive-related and SPE production.

2nd plant in Poland: ¥17.0 Bil. (SiC-DPF)
Ishikawa Plant: ¥8.3 Bil. (NOx sensor)
New manufacturing base in Thailand: ¥50.0 Bil. (Honeycomb, etc.)
Be forecast to achieve target ratio of new products to total sales in FY2017. Reinforce existing products and tackle the quick commercialization of new products to ensure consecutive growth.

-FY 2017 Target: 30%

<Promising product range>
- Ceramic fuel cell module
- Zinc secondary battery
- All-solid-state battery, etc
- Wafer products, etc
- GPF
- New-regulation DPF, etc
# Quick commercialization of new products

## Ceramic fuel cell module
**SOFC (Solid-Oxide Fuel Cell) module**

- Compact but highly efficient and durable power generation component made of ceramic enabled by proprietary configuration and ceramic material.

## Zinc secondary battery

- Large capacity battery using proprietary OH ion-conducting ceramic materials in its separators.
- Has high safety since it uses an aqueous electrolyte, and can be installed in various locations.

## All-solid-state battery

- All-solid-state battery which are ultra-slim, high energy dense and operable under high temperatures.

## Fuel cell system for a detached house and an apartment building

For next-generation fuel battery systems

- Being evaluated at major fuel cell system companies for commercialization.

## Household-type storage battery (10kWh class)

- Being evaluated for long-term durability, for commercialization in 2017.

## Indoor-type storage battery (500kWh class)

- For buildings, hospitals and commercial facilities, etc.

## Wearable devices

- IoT wireless modules

## Smart cards

- On board power unit

- Samples being evaluated at more than 10 companies.

Launched a company-wide ceramic battery project.

Accelerating commercialization.
**Priority Tasks**

1. **Respond to demand expansion**
   - Strengthen global productivity
     - Planning world wide production increase, mainly automotive-related products
     - Coinstantaneous world wide plant establishment

2. **Enhance the competitiveness of the product**
   - Enhance the competitiveness of existing products
   - New Structural Innovation of Manufacturing
   - Increase the value of the products by advanced technology
   - Reduce cost and shorten lead time by establishing innovational manufacturing process.

3. **Break dependence on Automotive-related products**
   - Create new product and business
   - 2017 Challenge 30
   - Raise the ratio of new products to total sales to 30%
   - Broaden the range of new wafer products
   - Set up the new department to reinforce the marketing and experimental production
   - Accelerate the commercialization of new battery products

4. **Strengthen system to respond Global expansion**
   - Enlarge the global management
   - Upgrade the cooperate headquarter
   - Rapid response to the change of business conditions, and legal requests

**Further Enhancement of Governance framework**
- Commit Stronger Regulatory Compliance

**Become a world-class global company**
# Summary of Cash Flow

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Operating Activities</td>
<td>73.0</td>
<td>59.4</td>
<td>79.0</td>
</tr>
<tr>
<td>Investing Activities</td>
<td>-39.5</td>
<td>-47.8</td>
<td>-72.0</td>
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<tr>
<td>Financing Activities</td>
<td>-26.0</td>
<td>-0.4</td>
<td>-16.0</td>
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<tr>
<td>Effect of exchange rate change</td>
<td>1.3</td>
<td>-3.9</td>
<td>-2.0</td>
</tr>
<tr>
<td>Net Change in Cash &amp; Eq-</td>
<td>8.8</td>
<td>7.4</td>
<td>-11.0</td>
</tr>
<tr>
<td>Cash &amp; Eq- at the End of Year</td>
<td>128.6</td>
<td>136.1</td>
<td>125.1</td>
</tr>
</tbody>
</table>
## Sales by Product (Annual)

### After Consolidation Elimination

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulators</td>
<td>53.9</td>
<td>57.0</td>
<td>57.3</td>
<td>60.0</td>
</tr>
<tr>
<td>NAS</td>
<td>5.1</td>
<td>15.8</td>
<td>26.2</td>
<td>5.0</td>
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<tr>
<td><strong>Power Business</strong></td>
<td>59.0</td>
<td>72.8</td>
<td>83.5</td>
<td>65.0</td>
</tr>
<tr>
<td>Honeycomb filters</td>
<td>65.1</td>
<td>72.4</td>
<td>81.0</td>
<td>79.0</td>
</tr>
<tr>
<td>SiC-DPF</td>
<td>37.6</td>
<td>41.8</td>
<td>44.1</td>
<td>39.0</td>
</tr>
<tr>
<td>Cd-DPF / LSH</td>
<td>51.8</td>
<td>68.9</td>
<td>71.6</td>
<td>66.0</td>
</tr>
<tr>
<td>Sensors</td>
<td>16.4</td>
<td>24.0</td>
<td>32.4</td>
<td>39.0</td>
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<tr>
<td>Industrial Process</td>
<td>19.9</td>
<td>20.0</td>
<td>21.9</td>
<td>22.0</td>
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<tr>
<td><strong>Ceramics Business</strong></td>
<td>190.8</td>
<td>227.1</td>
<td>250.9</td>
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<tr>
<td>Metal related</td>
<td>18.6</td>
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</tr>
<tr>
<td>Electric Related</td>
<td>4.8</td>
<td>14.5</td>
<td>33.9</td>
<td>35.8</td>
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<tr>
<td>Soshin Electric CO.</td>
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<td><strong>Electronics Business</strong></td>
<td>58.9</td>
<td>78.8</td>
<td>101.4</td>
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<tr>
<td><strong>Total</strong></td>
<td>308.7</td>
<td>378.7</td>
<td>435.8</td>
<td>410.0</td>
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</table>

(¥ Bil.)
### Sales by Product (Semi Annual)

<table>
<thead>
<tr>
<th>Section</th>
<th>3/16</th>
<th>3/17 Est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulators</td>
<td>27.9</td>
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<td>14.9</td>
<td>17.4</td>
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<tr>
<td>Industrial Process</td>
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</tr>
<tr>
<td><strong>Ceramics Business</strong></td>
<td>122.7</td>
<td>128.1</td>
</tr>
<tr>
<td>Metal related</td>
<td>10.6</td>
<td>9.3</td>
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<tr>
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<td>Soshin Electric CO.</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Electronics Business</strong></td>
<td>54.1</td>
<td>47.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>210.6</td>
<td>225.2</td>
</tr>
</tbody>
</table>
The purpose of this brief is information disclosure for better understanding of NGK Group’s policies, projections and financial condition. This brief does not solicit buying and selling of NGK’s shares.

The figures included in this brief, including the business performance targets and figures, are all projected data based on the information currently available to the NGK Group, and are subject to variable factors such as economic conditions, competitive environments and future demands.

Accordingly, please be advised that the actual results of business performance may differ substantially from the projections described here.
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