FY 2016 Results
(from April 1, 2016 to March 31, 2017)

April 28, 2017

This is a translation of materials used for the analyst meeting held in Tokyo, Japan on April 28, 2017.

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 FY2016
( Ended March 31, 2017)

Forecast for FY2017
( End in March 31, 2018)

Segment Information

Capital Expenditure & Depreciation Cost

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

New products / R&D

Priority Tasks

Financial Condition
### FY2016 Consolidated Financial Results

<table>
<thead>
<tr>
<th></th>
<th>FY2015 (¥Bil.)</th>
<th>FY2016 (¥Bil.)</th>
<th>Growth ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>435.8</td>
<td>401.3</td>
<td>-8%</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>80.9</td>
<td>63.2</td>
<td>-22%</td>
</tr>
<tr>
<td><strong>Ordinary Income</strong></td>
<td>81.5</td>
<td>64.6</td>
<td>-21%</td>
</tr>
<tr>
<td><strong>Profit Attributable to Owners of Parent</strong></td>
<td>53.3</td>
<td>36.4</td>
<td>-32%</td>
</tr>
</tbody>
</table>

**Exchange Rate**
- USD: ¥120 (FY2015) → ¥109 (FY2016), -¥11

### Sales and income lower than last year

- **Power**: Sales decreased and loss recorded for both insulators and NAS® batteries.
- **Ceramics**: In terms of automotive-related products, sales decreased due to a stronger yen, despite increased production volume reflecting sales of passenger cars in the robust Chinese and European markets, and truck sales in the Chinese market. Profits also decreased as a result of factors such as increased costs.
- **Electronics**: Sales increased for ceramics components for semiconductor manufacturing equipment. Profits decreased as a result of a decrease in demand for package products and the stronger yen.
- **Extraordinary gain**: Income ¥5.2 billion yen recorded for sales of investment securities.
- **Extraordinary Loss**: We recorded provision of reserve for loss related to competition law of ¥6.3 billion and impairment loss of ¥4.2 billion.
- **Taxes**: ¥11.2 billion yen recorded for expected past year portion of revision in transfer pricing taxation.
Change Analysis for FY2016

Sales

3/16: 435.8
3/17: 401.3

Op. Income

3/16: 80.9
3/17: 63.2

FX Rate

3/16: ¥120 /USD, ¥132 /EUR
3/17: ¥109 /USD, ¥119 /EUR
## Higher sales and income compared with the same period last year

<table>
<thead>
<tr>
<th></th>
<th>FY2016 (¥Bil.)</th>
<th>FY2017 (¥Bil.)</th>
<th>Growth ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>401.3</td>
<td>420.0</td>
<td>+5%</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>63.2</td>
<td>67.0</td>
<td>+6%</td>
</tr>
<tr>
<td><strong>Ordinary Income</strong></td>
<td>64.6</td>
<td>68.0</td>
<td>+5%</td>
</tr>
<tr>
<td><strong>Profit Attributable to Owners of Parent</strong></td>
<td>36.4</td>
<td>45.0</td>
<td>+24%</td>
</tr>
<tr>
<td><strong>Exchange Rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USD</td>
<td>¥109</td>
<td>¥105</td>
<td>-¥4</td>
</tr>
<tr>
<td>EUR</td>
<td>¥119</td>
<td>¥115</td>
<td>-¥4</td>
</tr>
</tbody>
</table>

### Power
An increase in overseas projects for insulators is expected. Loss continued for NAS® batteries as there were no major shipments.

### Ceramics
Demand increased for automotive-related products as a result of increased truck sales in the Chinese market and tighter emission regulations in Europe. Lower income is expected as a result of factors such as increased development and depreciation costs.

### Electronics
Sales and income are forecast to increase due to strong demand for ceramics components for semiconductor manufacturing equipment and increased demand for wafer products, both sales and income increased.
Change Analysis for FY2017

Sales

Op. Income

 FY 2016 Presentation

(¥ Bil.)

Ceramics
Electronics
Power
FX

FX Rate

3/17
¥109 /USD
¥119 /EUR

3/18 Est.
¥105 /USD
¥115 /EUR

<Main Influences>
Quantity effect  +14.1
Discounts       -9.3
Depreciation costs  -4.4
Development costs  -2.8
Cost reductions etc.  +8.6
**Insulators**

- Domestic replacement demand is strong. While demand has continued to be sluggish in North America, sales are expected to recover due to an increase in shipments to China.
- Aim to become profitable in FY2017 by working to reduce fixed costs through means such as downsizing the production system at domestic plants.

**NAS**

- A loss is expected to continue as there are no major shipments for both Japan and overseas.
- The business operation system will be streamlined to minimize losses.

---

### Power Business

#### Sales

![Sales Graph](chart.png)

#### Operating Income(Loss)

- **Domestics**
  - Operating Income Margin: 51.6%
  - 3/15: 3.0
  - 3/16: 1.3
  - 3/17: 17.5
  - 3/18 Est.: 34.0

- **Overseas**
  - Operating Income Margin: 57.0%
  - 3/15: 26.2
  - 3/16: 23.3
  - 3/17: 52.8
  - 3/18 Est.: 54.0
  - △ 6.6

- **NAS Batteries**
  - Operating Income Margin: 57.0%
  - 3/15: 15.8
  - 3/16: 26.2
  - 3/17: 3.0
  - 3/18 Est.: 3.0
  - △ 6.6

- **Overall**
  - Operating Income Margin: 54.0%
  - 3/15: 15.8
  - 3/16: 26.2
  - 3/17: 3.0
  - 3/18 Est.: 3.0
  - △ 6.6

**After consolidation elimination**

- Operating Income Margin: 3.1%
- 3/15: 2.6
- 3/16: 3.1
- 3/17: 3.0
- 3/18 Est.: 3.0

△ 2.4

△ 6.6

△ 3.0
**Insulators**

Results overseas will be unchanged.

- **Overseas:** Large-scale projects in the Middle East and Asia will be sluggish.
- **Japan:** Replacement demand for insulators installed during and after the period of high economic growth will be robust.

*Streamline production system in Japan by improving the efficiency of overseas locations to improve profits.*

*FY2017: Komaki Plant (2 shift ⇒ 1 shift)*

---

**NAS® Batteries**

While it will take time for the development of full-scale demand, the potential needs are high.

- **Overseas:** Europe
  - Trend of utilizing storage batteries for supply-demand adjustments with the expansion of renewable energy
- **Middle East:** Plans for the large-scale introduction of solar power generation as an alternative to thermal power generation

Work to create demand by leveraging demonstration projects

**[Start of demonstration project for large-scale hybrid storage battery system in Germany]** (press release dated March 21)

- NEDO and Lower Saxony in Germany agreed to conduct a demonstration project.
- The demonstration project will be started jointly by three companies including the Company and the local power company EWE

Japan: Realization of systems storage battery installation for the introduction of wind power generation in Hokkaido

Aim to capture the order
● Metal Related Products
  • Demand for beryllium copper products is flat. Aim to expand business by promoting development of new materials and products with new applications.

● Ceramics for Semiconductor Manufacturing Equipment (SPE-related products)
  • Both sales and profits increase due to continue high levels of capital expenditures by semiconductor manufacturers and foundries, underpinned by the increasingly shrinking of semiconductors.

● Electronics Components
  • Demand has grown for composite wafers products, underpinned by an expansion in the high performance filter market for mobile communications.
  • Demand for existing package products is flat. Aim to growth by injecting and promoting development of new products.

(¥ Bil.) <After consolidation elimination>

【Sales】

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>78.8</td>
<td>101.4</td>
<td>103.5</td>
<td>114.0</td>
</tr>
<tr>
<td>Metal Related</td>
<td>14.5</td>
<td>33.9</td>
<td>27.4</td>
<td>31.0</td>
</tr>
<tr>
<td>Electric related</td>
<td>31.5</td>
<td>36.8</td>
<td>46.4</td>
<td>53.0</td>
</tr>
<tr>
<td>Soshin Electric Co.</td>
<td>11.3</td>
<td>10.8</td>
<td>9.4</td>
<td>10.0</td>
</tr>
<tr>
<td>SPE related</td>
<td>21.5</td>
<td>19.9</td>
<td>20.3</td>
<td>20.0</td>
</tr>
</tbody>
</table>

【Operating Income】

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Income Margin</td>
<td>8.0%</td>
<td>7.6%</td>
<td>5.1%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

【After consolidation elimination】

Electronics Business
Electronics Business

Ceramic Components for Semiconductor Manufacturing Equipment
Investment related to 3D-NAND flash memories is forecast to increase against the backdrop of brisk demand for mobile devices and memory devices including data servers.
Demand for semiconductor manufacturing equipment is forecast to grow.

Demand trends for semiconductor front-end manufacturing equipment by use (NGK's Est. by the info. from WFE, Gartner and customer)

- For 3D NAND
- For foundry
- For logic
- For DRAM

For 2D NAND

NGK Insulators' production capacity for ceramics products for semiconductor manufacturing equipment

- Continue investments for capacity expansion
- Under planning
- Under planning
- Under planning

Wafer Products (Electronics Components)
Bonded wafers for SAW filters

- Demand for NGK's composite wafers is expected to grow for use in high-functionality SAW filters as a result of a shift to multiband following increases in the speed and capacity of mobile communication

- Expansion of IoT and development of new generation mobile communication infrastructure are expected.
- Improve profitability by promoting cost reduction.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.

Ceramic Package Business (Electronics Components)
Boost of injecting and promoting development of new products

- Demand is forecast to grow due to development of high-speed optical communication networks.

- Optical package
- DCB infrastructure
- Quarts crystal package

- RF package

Expansion of IoT and development of new generation mobile communication infrastructure are expected.

Strengthening the profitability of existing products
- Quarts crystal package
- RF package

Expand sales for use in power semiconductor installed in industrial robot, HV/EV vehicles.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.

Wafer Products (Electronics Components)
Bonded wafers for SAW filters

- Demand for NGK's composite wafers is expected to grow for use in high-functionality SAW filters as a result of a shift to multiband following increases in the speed and capacity of mobile communication

- Expansion of IoT and development of new generation mobile communication infrastructure are expected.
- Improve profitability by promoting cost reduction.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.

Ceramic Package Business (Electronics Components)
Boost of injecting and promoting development of new products

- Demand is forecast to grow due to development of high-speed optical communication networks.

- Optical package
- DCB infrastructure
- Quarts crystal package

- RF package

Expansion of IoT and development of new generation mobile communication infrastructure are expected.

Strengthening the profitability of existing products
- Quarts crystal package
- RF package

Expand sales for use in power semiconductor installed in industrial robot, HV/EV vehicles.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.

Wafer Products (Electronics Components)
Bonded wafers for SAW filters

- Demand for NGK's composite wafers is expected to grow for use in high-functionality SAW filters as a result of a shift to multiband following increases in the speed and capacity of mobile communication

- Expansion of IoT and development of new generation mobile communication infrastructure are expected.
- Improve profitability by promoting cost reduction.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.

Wafer Products (Electronics Components)
Bonded wafers for SAW filters

- Demand for NGK's composite wafers is expected to grow for use in high-functionality SAW filters as a result of a shift to multiband following increases in the speed and capacity of mobile communication

- Expansion of IoT and development of new generation mobile communication infrastructure are expected.
- Improve profitability by promoting cost reduction.

Aim to expand business by strengthening the profitability of existing businesses and developing new products.
Automotive-related
- Overall lower income is expected as a result of increase in depreciation costs and development costs and a decline in prices.
- Honeycomb: Demand increase due to strong sales of passenger cars in the Chinese market.
- LSH: Demand grow as a result of factors including increased truck sales in the Chinese market.
- Cd-DPF: As there are some switches to SiC-DPF, demand has decreased.
- NOx sensors: In addition to increased truck sales in the Chinese market, there has been an increase in demand due to tighter emission regulations in Europe.

Industrial processes
- Strong performance for heating equipment as customers in Japan and China has continued investments in lithium-ion automotive batteries.
- There are also an increase in renovation projects for nuclear power related facilities.

<After consolidation elimination>
Demand for honeycomb is increasing at an annual rate of about 3% in proportion to the increase in sales of passenger cars.

Tightening of regulations mainly in China, India, and other emerging countries will cause DPF demand to increase from FY2018.

Increase in demand for LSH due to increased sales of trucks in the Chinese market and tightening regulations in India (FY2017).

Dramatic increase in GPF demand accompanying the introduction of regulations in the Eurozone (Euro6c RDE) and tightening of regulation in China (6a and 6b).

Increase in the number of diesel passenger vehicles equipped with NOx sensors accompanying the tightening of regulations in the Eurozone (Euro6c).
In response to the tightening of emission regulations in Europe (gasoline direct injection engines) and in China, Thailand, and India, have decided to increase production of GPF and SiC-DPF at the plant in Poland. (press release on March 30)
Planning capital investment of about ￥300 billion over a three-year period in order to move up the schedule for increasing production of automotive-related and SPE products and to invest in the mass production of new products.

1st plant in Poland (GPF): ￥7.0 Bil. Production starts in July, 2018

2nd plant in Poland (SiC-DPF): ￥22.0 Bil. Production starts in April, 2019

New manufacturing base in Thailand: ￥50.0 Bil. (Honeycomb, etc.)

Plant in China: ￥12.0 billion (Honeycomb/GPF)

Honeycomb production starts in April, 2018
Range of products manufactured will expand in line with phased investments by 2020

Additional investment is planned
Forecast to achieve target ratio of new products to total sales in FY2017. Maintain ratio of new product to total sales of at least 30% from FY2017 by working towards the rapid commercialization of new products.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Sales</th>
<th>Operating Income</th>
<th>Ratio of New Products to Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>¥378.7</td>
<td>¥61.6</td>
<td>20%</td>
</tr>
<tr>
<td>FY2015</td>
<td>¥435.8</td>
<td>¥80.9</td>
<td>25%</td>
</tr>
<tr>
<td>FY2016</td>
<td>¥401.3</td>
<td>¥63.2</td>
<td>21%</td>
</tr>
<tr>
<td>FY2017 Est.</td>
<td>¥420.0</td>
<td></td>
<td>25%</td>
</tr>
</tbody>
</table>

**<Promising product range>**
- **All-solid-state battery**
- **Micro-lens for ultraviolet LED**
- **Gallium nitride (GaN) wafer**
- **GPF**
- **New-regulation DPF**
- **Zinc secondary**
- **battery Ceramic fuel cell module**
A companywide organization, “The Optical Component Project” has been newly launched.

### Gallium Nitride (GaN) Wafer
- Colorless
- 2 inches
- 4 inches
- * Less than $10^4$/cm²

### Micro-lens for Ultraviolet LED
- Quartz glass lens
- 3.5mm x 3.5mm

#### Remarks
- Achieved Low defect density* through entire wafer surface by the original liquid phase epitaxial growth technology
- Contribute to ultra-high brightness light source (laser, LED) as substrates
- Available in complex shapes through a unique manufacturing process
- Highly transparent and durable for ultraviolet light

#### Applications
- Business projector
- Cinema projector
- Head light (high beam)
- Stadium lighting

#### Progress
- Aiming for mass production in FY2017; sample evaluation is underway at several major customers
- There are shipping requests from several companies (samples are under evaluation by more than ten customers).
- Aiming for preceding mass production start in FY2018

#### Reference:
In the case of LED without lens Ultraviolet light is dispersed, hence sterilization efficiency is reduced.

A small lens that can reduce Ultraviolet light angle is necessary for effective sterilization.
### Early commercialization of new products

**“The Ceramic Battery Project”**

<table>
<thead>
<tr>
<th>Chip-type Secondary Battery</th>
<th>Zinc Secondary Battery</th>
<th>Ceramic Fuel Cell Module (SOFC (Solid-Oxide Fuel Cell) Module)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Chip-type Secondary Battery Image" /></td>
<td><img src="image2" alt="Zinc Secondary Battery Image" /></td>
<td><img src="image3" alt="Ceramic Fuel Cell Module Image" /></td>
</tr>
</tbody>
</table>

#### Remarks
- **Chip-type Secondary Battery**
  - Crystallographically-oriented ceramic positive plates (basic patents acquired)
  - Very small thickness, high energy density, and high temperature operation

- **Zinc Secondary Battery**
  - Unique ceramic separator of solid electrolyte
  - High safety (aqueous electrolyte), room temperature operation, high capacity

- **Ceramic Fuel Cell Module**
  - Unique cell structure and unique ceramic materials
  - Compact, high power generation efficiency, durability

#### Applications
- **Wearable devices**
  - Smart cards
  - IoT wireless modules
  - On-board power units

- **Household-type storage battery**
  - 10kWh class

- **Indoor-type storage battery**
  - 500kWh class

- **Fuel cell system**
  - for detached houses and apartments (for installation in each residence)

#### Progress
- **Chip-type Secondary Battery**
  - Samples are being evaluated at more than 10 customers
  - Obtained safety standards certification

- **Zinc Secondary Battery**
  - Field tests planned at the customer’s sites

- **Ceramic Fuel Cell Module**
  - Being evaluated at major fuel cell system companies for commercialization

---

**Planned commercialized one by one from FY2018**

---

**FY 2016 Presentation**
R&D Input

- **R&D/Sales Ratio**
  - 3.9% (3/14)
  - 3.7% (3/15)
  - 4.0% (3/16)
  - 4.7% (3/17)
  - 5.1% (3/18 Est.)

- **R&D Input (¥ Bil.)**
  - **Corporate**
    - 5.5
  - **Electronics**
    - 4.5
  - **Power**
    - 1.5
  - **Ceramics**
    - 10.0
  - **Total**
    - 21.5

**FY 2016 Presentation**
Priority Tasks

Respond to demand expansion
- Enhance the competitiveness of products
  - "New Structural Innovation of Manufacturing"
  - Improvements in loss-recording businesses

Enhance the competitiveness of existing products
- Increase the value of products by advanced technology
- Major review of production systems
- Global deployment of cutting-edge high-productivity production line established at domestic mother factory.

Break dependence on automotive-related products
- Create new products and business
  - From 2017 Challenge 30 to Keep up 30
  - Raise the ratio of new products to total sales to 30%
  - Develop structure aimed at early commercialization
    - Ceramic Battery Project
    - Optics Parts Project
  - Strengthen marketing and trial manufacturing support capabilities, and create new products

Strengthen system to respond to global expansion
- Enlarge global management
  - Upgrade the corporate headquarters
  - Rapid response to the change of business conditions, and legal requests
  - Streamlining and pursuit of substance
  - Revision of HR system (Introduction of system for mandatory retirement at age 65)
  - (Revision of evaluation and compensation system)

Focus on and thoroughly enforce safety, quality, environment, and CSR

Enhancement of Governance Framework

Commit to Stronger Regulatory Compliance

Become a world-class global company

Prioritize investment and inputs including near-term development
## Summary of Cash Flow

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Activities</td>
<td>59.4</td>
<td>80.2</td>
<td>45.0</td>
</tr>
<tr>
<td>Investing Activities</td>
<td>-47.8</td>
<td>-56.5</td>
<td>-61.0</td>
</tr>
<tr>
<td>Financing Activities</td>
<td>-0.4</td>
<td>-13.0</td>
<td>22.0</td>
</tr>
<tr>
<td>New loans</td>
<td>+16.8</td>
<td>+30.1</td>
<td>+44.0</td>
</tr>
<tr>
<td>Repayment</td>
<td>-6.7</td>
<td>-19.2</td>
<td>-9.0</td>
</tr>
<tr>
<td>Treasury stock purchase</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of exchange rate change</td>
<td>-3.9</td>
<td>-2.1</td>
<td>-4.0</td>
</tr>
<tr>
<td>Net Change in Cash &amp; Eq-</td>
<td>7.4</td>
<td>8.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Cash &amp; Eq- at the End of Year</td>
<td>136.1</td>
<td>144.7</td>
<td>146.7</td>
</tr>
</tbody>
</table>
Return on Invested Capital (ROIC)

- Return on invested capital (NGK-version ROIC*)

\[
\text{Return on invested capital (NGK-version ROIC*)} = \frac{\text{Operating income}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Business assets (sales receivables + inventories + fixed assets)*}}
\]

* NGK-version ROIC: Calculated based on business assets (sales receivables + inventories + fixed assets) that can be managed by business departments rather than capital and liabilities.

Aim to improve ROIC with targets for each product group by improving profitability, prioritizing investments, and reducing inventories.
Total Assets & ROE / EPS & Dividends

- ROE:
  - 3/14: 8.6%
  - 3/15: 11.4%
  - 3/16: 13.3%
  - 3/17: 8.8%
  - 3/18 Est.: 10.5%

- Payout Ratio:
  - 3/14: 26.6%
  - 3/15: 22.0%
  - 3/16: 23.3%
  - 3/17: 35.5%
  - 3/18 Est.: 30.0%

- EPS:
  - 3/14: 82.82
  - 3/15: 127.11
  - 3/16: 163.28
  - 3/17: 112.71
  - 3/18 Est.: 139.91

- Dividends:
  - 3/14: 22
  - 3/15: 28
  - 3/16: 38
  - 3/17: 40
  - 3/18 Est.: 42

- Other liabilities: 614.2
- Interest-bearing liabilities: 167.3
- Net assets: 344.5
- Total assets: 702.2
- Total liabilities: 711.9
- Net assets: 759.4
- Total liabilities: 790.0

- Other liabilities: 3/14: 156.2
- Interest-bearing liabilities: 3/14: 404.0
- Net assets: 3/14: 418.0
- Total assets: 3/14: 210.0
- Total liabilities: 3/14: 82.82
- Total liabilities: 3/14: 3/15: 127.11
- Total liabilities: 3/15: 163.28
- Total liabilities: 3/16: 112.71
- Total liabilities: 3/17: 139.91
- Total liabilities: 3/18 Est.: 42
## Sales by Product (Annual)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insulators</strong></td>
<td>57.0</td>
<td>57.3</td>
<td>51.6</td>
<td>54.0</td>
</tr>
<tr>
<td><strong>NAS</strong></td>
<td>15.8</td>
<td>26.2</td>
<td>1.3</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Power Business</strong></td>
<td>72.8</td>
<td>83.5</td>
<td>52.8</td>
<td>57.0</td>
</tr>
<tr>
<td><strong>Honeycomb filters</strong></td>
<td>72.4</td>
<td>81.0</td>
<td>77.0</td>
<td>76.0</td>
</tr>
<tr>
<td><strong>SiC-DPF</strong></td>
<td>41.8</td>
<td>44.1</td>
<td>38.2</td>
<td>41.0</td>
</tr>
<tr>
<td><strong>Cd-DPF / LSH</strong></td>
<td>68.9</td>
<td>71.6</td>
<td>67.8</td>
<td>65.0</td>
</tr>
<tr>
<td><strong>Sensors</strong></td>
<td>24.0</td>
<td>32.4</td>
<td>38.0</td>
<td>42.0</td>
</tr>
<tr>
<td><strong>Industrial Process</strong></td>
<td>20.0</td>
<td>21.9</td>
<td>23.9</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>Ceramics Business</strong></td>
<td>227.1</td>
<td>250.9</td>
<td>244.9</td>
<td>249.0</td>
</tr>
<tr>
<td><strong>Metal related</strong></td>
<td>21.5</td>
<td>19.9</td>
<td>20.3</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>SPE related</strong></td>
<td>31.5</td>
<td>36.8</td>
<td>46.4</td>
<td>53.0</td>
</tr>
<tr>
<td><strong>Electric Related</strong></td>
<td>14.5</td>
<td>33.9</td>
<td>27.4</td>
<td>31.0</td>
</tr>
<tr>
<td><strong>Soshin Electric CO.</strong></td>
<td>11.3</td>
<td>10.8</td>
<td>9.4</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Electronics Business</strong></td>
<td>78.8</td>
<td>101.4</td>
<td>103.5</td>
<td>114.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>378.7</td>
<td>435.8</td>
<td>401.3</td>
<td>420.0</td>
</tr>
</tbody>
</table>

*Note: After Consolidation Elimination*
## Sales by Product (Semi Annual)

### <After Consolidation Elimination>

<table>
<thead>
<tr>
<th></th>
<th>3/17</th>
<th>3/18 Est.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt;. Half</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;. Half</td>
</tr>
<tr>
<td>Insulators</td>
<td>26.0</td>
<td>25.5</td>
</tr>
<tr>
<td>NAS</td>
<td>0.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Power Business</td>
<td>26.4</td>
<td>26.4</td>
</tr>
<tr>
<td>Honeycomb filters</td>
<td>39.0</td>
<td>38.0</td>
</tr>
<tr>
<td>SiC-DPF</td>
<td>19.4</td>
<td>18.8</td>
</tr>
<tr>
<td>Cd-DPF / LSH</td>
<td>33.1</td>
<td>34.7</td>
</tr>
<tr>
<td>Sensors</td>
<td>17.5</td>
<td>20.5</td>
</tr>
<tr>
<td>Industrial Process</td>
<td>10.3</td>
<td>13.6</td>
</tr>
<tr>
<td>Ceramics Business</td>
<td>119.3</td>
<td>125.6</td>
</tr>
<tr>
<td>Metal related</td>
<td>9.8</td>
<td>10.5</td>
</tr>
<tr>
<td>SPE related</td>
<td>20.5</td>
<td>25.9</td>
</tr>
<tr>
<td>Electric Related</td>
<td>13.7</td>
<td>13.6</td>
</tr>
<tr>
<td>Soshin Electric CO.</td>
<td>4.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Electronics Business</td>
<td>48.6</td>
<td>54.9</td>
</tr>
<tr>
<td>Total</td>
<td>194.3</td>
<td>207.0</td>
</tr>
</tbody>
</table>

(¥ Bil.)
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.