

FY2013 1st Half Results ***(from April 1, 2013 to September 30, 2013)***

October 31, 2013

This is a translation of materials used for the analyst meeting held in Tokyo, Japan on October 31, 2013

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.

Today's Presentation

Summary of financial results for FY2013 1st Half
(Ended September 31, 2013)

Forecast for FY2013
(Ended March 31, 2014)

Segment Information

Target ratio of new products to total sales

R&D / Capital Expenditure

Financial Condition

(4/2013–9/2013)	(¥ Bil.)	2Q FY2012	2Q FY2013	Y o Y change
<i>Net Sales</i>		121.7	138.0 141.8	+17%
<i>Operating Income</i>		11.3	14.0 19.7	+74%
<i>Ordinary Income</i>		8.0	14.0 19.6	+146%
<i>Net Income</i>		1.2	9.0 12.6	+995%

Announced in 7/2013

Higher sales and income compared with the same period last year

- Lower yen contributed to increase of operating income and ordinary income.
- **Ceramics** Demand for automotive related products for US, China and Japan greatly increased.
 - **Power** Operating loss decreased due to production of NAS batteries for overseas shipment.
 - **Electronics** Electric components remained weak. Demand for SPE related products increased.

(4/2013–3/2014)	(¥ Bil.)	FY2012	FY2013	Y o Y change
<i>Net Sales</i>		252.8	280.0 290.0	+15%
<i>Operating Income</i>		20.7	28.0 34.0	+64%
<i>Ordinary Income</i>		22.0	29.0 36.0	+63%
<i>Net Income</i>		11.4	22.0 25.0	+119%

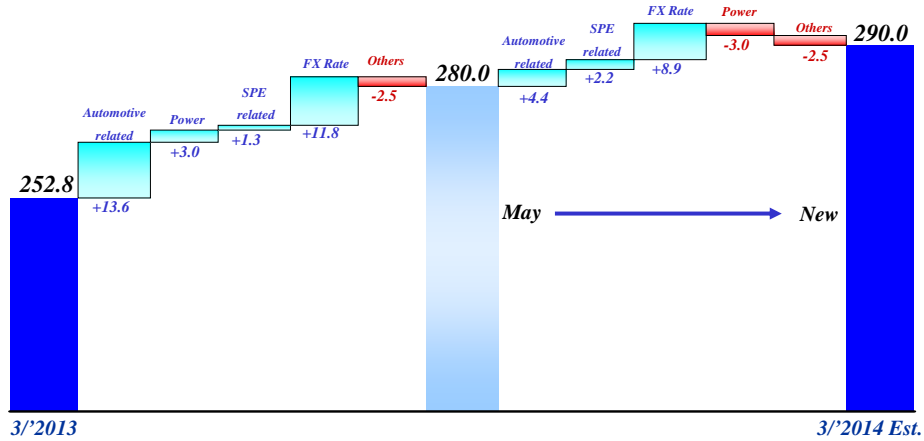
Announced in 5/2013

Higher sales and income compared with the previous year

- **Ceramics** Demand will remain strong. However, build up in demand for diesel-related products compliant with new emission regulations will be lower than initially expected.
- **Power** Sales of NAS batteries are projected for the 2nd half.
- **FX rate of 2nd half** is assumed to be ¥95/US\$ and ¥125/ER.

Change Analysis : Sales

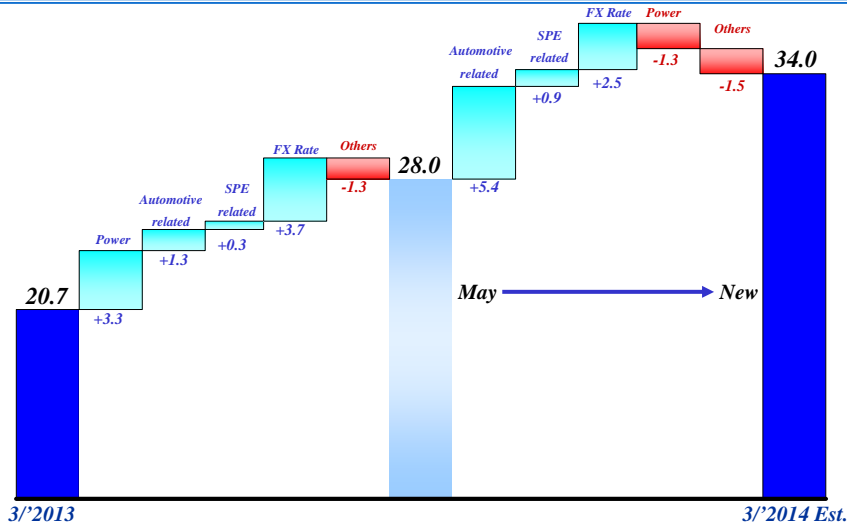
(¥ Bil.)



	3/2013	May (3/2014 Est.)	New (3/2014 Est.)
FX Rate	¥83 /US\$	¥90 /US\$	¥97 /US\$
	¥108 /ER	¥120 /ER	¥127 /ER

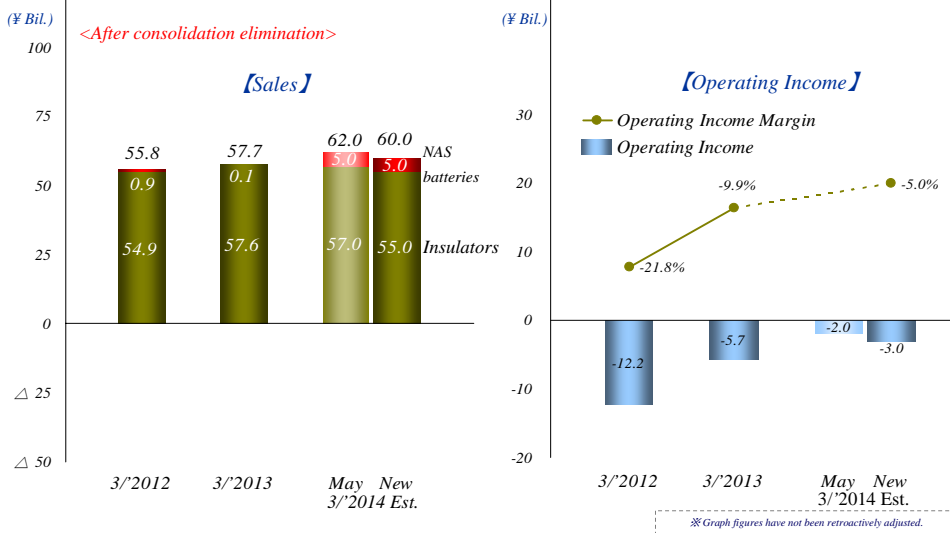
Change Analysis : Operating Income

(¥ Bil.)



	3/2013	May (3/2014 Est.)	New (3/2014 Est.)
FX Rate	¥83 /US\$	¥90 /US\$	¥97 /US\$
	¥108 /ER	¥120 /ER	¥127 /ER

<Insulators> Domestic power companies maintain lower capital expenditure. Some overseas projects will be deferred to next year.
<NAS> Overseas projects progress as planned. Shipments for Abu Dhabi starts from FY 2013 and shipments for Italy are starting from FY 2014.



- METI selected NAS battery as a subsidized project for its 2013 ‘Initiative on Renewable Energy Surplus Power Technology Development’.
- METI aims to lower the cost of energy storage systems to the same level as hydropower (¥23,000/kWh) by FY 2020.

Selected company and technology

NGK INSULATORS, LTD : NAS battery

Sumitomo Electric Industries, Ltd and other 2 companies: Redox flow battery

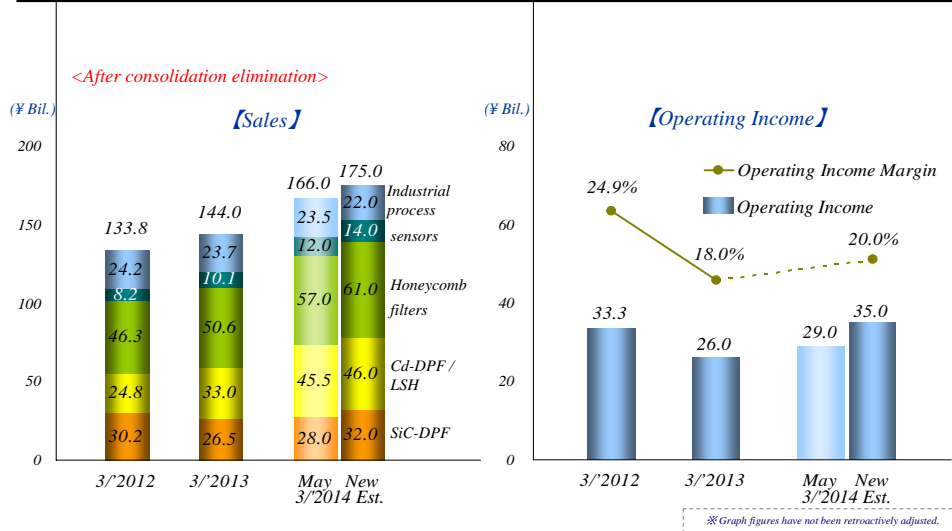
Comparison of NAS battery and Redox flow battery

	Real energy density	Operation temperature	Expected operating life	Features
NAS battery	130Wh/kg	High	15 years	<ul style="list-style-type: none"> •High energy density and compact size. •Capacity can be scaled up by connecting modules in series parallel.
Redox flow battery	10Wh/kg	Ordinary	6~10 years	<ul style="list-style-type: none"> •Operable at ordinary temperature and no limit on charge-discharge cycle. •Simple structure and capacity can be scaled up.

* Source : <http://www.enecho.meti.go.jp/info/committee/kihonmondai/28th/28sankou2-2.pdf>

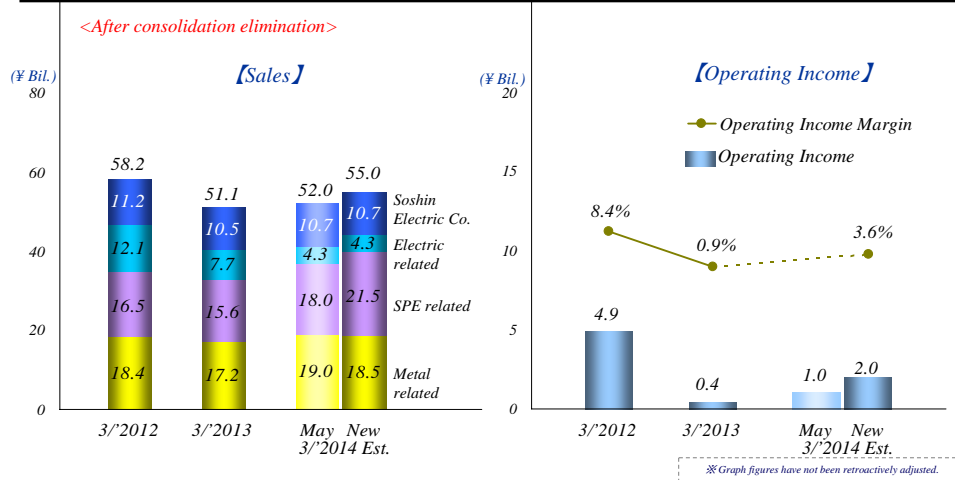
<Automotive related> Demand for automotive-related products in US, China and Japan remains strong. Although trends for tighter emission regulations continue, build-up in demand for diesel related products compliant with new emission regulations is weak.

<Industrial process> Capital expenditure in electric components and materials remains flat.



		2012	2013	2014	2015	2016	2017	2018	2019	2020
Light Vehicle	Japan	PNLT					PPNLT			
	US	Tier2/Bin5						(Tier3)		
	Europe	Euro5					Euro6			(Euro7)
	China	Euro4		Euro5				(Euro6)		
	India	Euro4(13Cities),Euro3(Others)					Euro4			
Truck	Japan	PNLT					PPNLT			
	US	US10						(US16)		
	Europe	Euro V					Euro VI		(Euro VII)	
	China	Euro III		Euro IV				(Euro V)		
	India	Euro IV(13Cities),Euro III(Others)					Euro IV			
Off-Road	Japan	JP11			JP14			(JP17)		
	US	Tier4a			Tier4b			(Tier5)		
	Europe	Step3			Step4			(Step4b)		

<Semiconductor Production Equipment Related (SPE related products)>
Semiconductor companies bring forward capital expenditure due to demand increase for mobile products.
<Beryllium Copper (Metal related products)>
Although market expansion in China and India is anticipated, market recovery is slow. Cost competition continues.
<Electronics Components>
Components for printers and lighting remains weak. Soshin Electric remains strong (noise filters, etc.).



	Bonded Wafer	Gallium Nitride (GaN) Wafer
Features	Bonding wafers of different materials, enables low-cost manufacture of high functional telecommunication devices required for next generation mobile terminals.	Larger wafers and lower defect rate enables high brightness LED light sources that can reduce energy consumption by more than 50%.
Devices	<ul style="list-style-type: none"> •Temperature compensated SAW filters for LTE •RF antenna switches •Power amplifiers for cell base station <div style="border: 1px solid black; padding: 2px; display: inline-block;">Market size in 2017 ¥20.0 Bil.</div>	<ul style="list-style-type: none"> •Ultra bright blue and green LEDs •High-power blue and green lasers •Next generation power semiconductors <div style="border: 1px solid black; padding: 2px; display: inline-block;">Market size in 2017 ¥70.0 Bil.</div>
Final Product	 Smart Phone Tablet Device	 Projectors for business use Store illuminations Head lights Electric vehicles
Progress	Plans to use in mobile devices from 2014.	Wafer products are under review by leading LED companies.

Creation of new products and new business

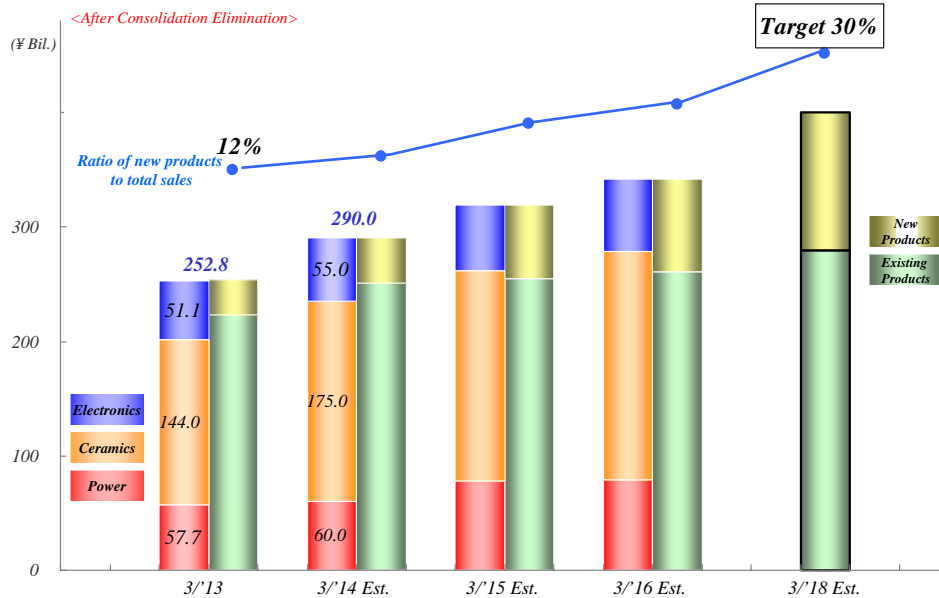
- ▶ Quickly commercialize wafer products
- ▶ Focus on research for new products

Strengthen profitability of existing business

- ▶ Recover profitability in unprofitable business (Insulators, NAS Batteries, Industrial Process, Electric components)
- ▶ Further enhance strong business (Honeycomb filters, DPF, SPE related)

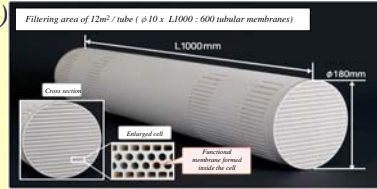
Intensive elimination of “waste” - pursuing low cost structure

- ▶ Compress assets (Inventory compression, investment optimization)
- ▶ Cut costs in manufacturing and back office departments



Ceramic membrane filter (separation membrane)

DDR zeolite membrane filter able to separate even molecules.
DDR zeolite membrane filters can separate molecules over a large surface area. It is possible to separate the unneeded CO₂ from natural gas, shale gas and biogas.
NGK's membrane filter (DDR zeolite membrane filter) can separate CO₂ enriched gas for which ordinary high-molecular membrane filter can not be used due to swelling.



SOFC (Solid-Oxide Fuel Cell) module

High voltage ceramics power generation module that enables more efficient power generation compared with current fuel cells without using noble metals.

Improvement of electrical efficiency by using high molecular membrane filters and non-use of expensive noble metals are required for fuel cells which are starting to be introduced for home use. Companies are racing to develop a ceramic power generation module to realize an SOFC that generates power efficiently and doesn't use noble metals. NGK's SOFC module can achieve highly efficient power generation with high voltage and low current and is also highly durable.

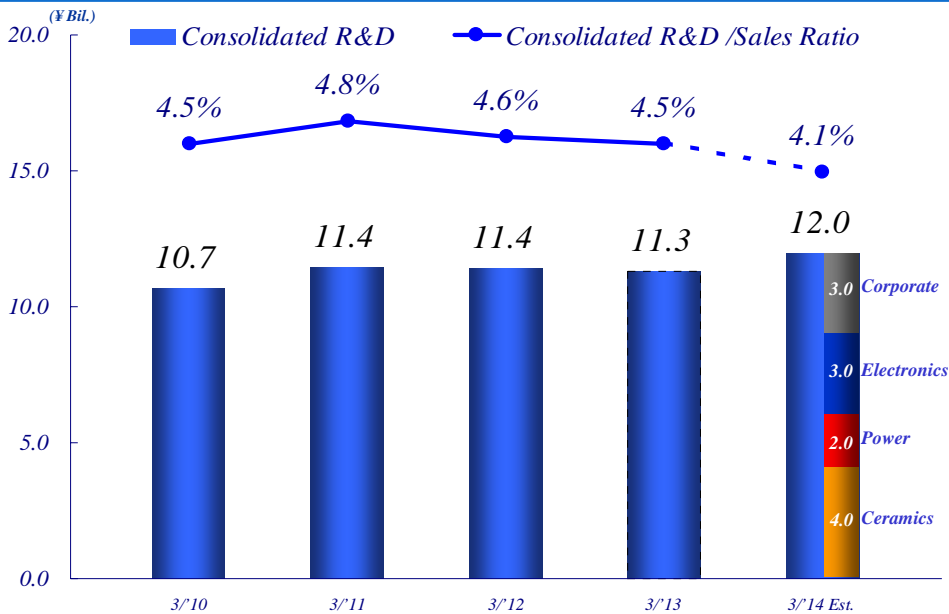
Advanced ceramics materials and components for next generation storage batteries

Fast ion conductivity cathode material and electrolyte for next generation storage batteries that will outperform current lithium ion batteries.

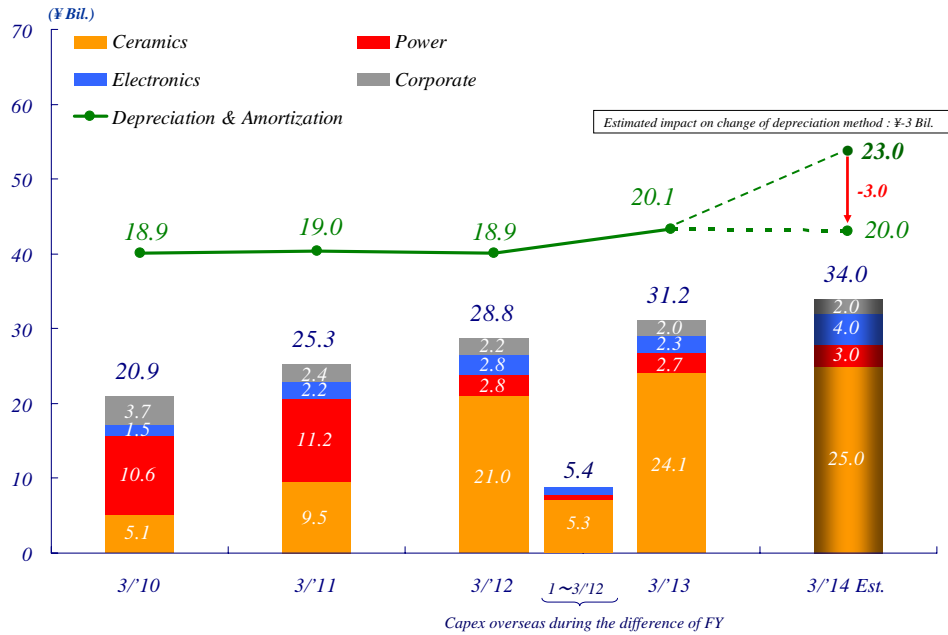
All solid battery :All solid batteries are composed of NGK's proprietary ceramic materials. This enables batteries to be thinner, more compact, and mounted on surfaces. Their compact laminated structure allows high energy density. NGK is examining applications in mobile terminals and switches for RFIC.

Metal-air battery :By using ceramic electrolyte which selectively takes in oxygen required for charge and discharge from the air, these batteries realize to achieve significantly higher energy density. NGK is examining applications in automobiles.

R&D Input



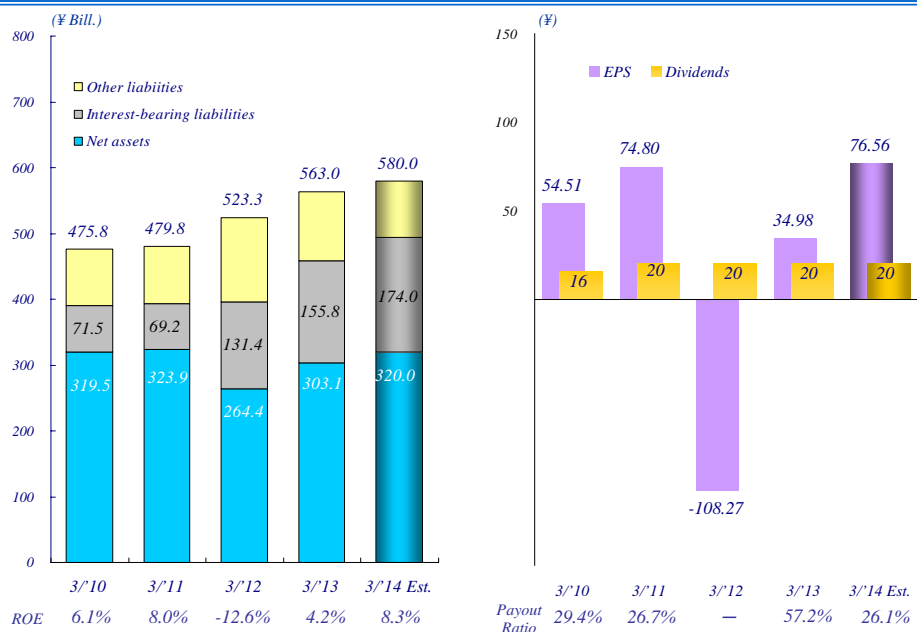
Capital Expenditure



Summary of Consolidated Cash Flow

(¥ Bil.)

	03/12	03/13	03/14 Est.
<i>Operating Activities</i>	13.9	3.7	20.0
<i>Investing Activities</i>	-45.4	-0.6	-34.0
<i>Financing Activities</i>	56.6	12.4	8.0
<i>Effect of exchange rate change</i>	-2.9	2.9	-
<i>Net Change in Cash & Eq-</i>	22.1	18.4	-6.0
<i>Effect of changing the FY period (1~3/12)</i>	-	-0.7	-
<i>Cash & Eq- at the End of Year</i>	85.1	102.8	96.8



<After Consolidation Elimination>

(¥ Bil.)

	March'11	March'12	March'13	March'14 Est
Insulators	58.6	54.9	57.6	55.0
NAS	-4.8	0.9	0.1	5.0
Power Business	53.8	55.8	57.7	60.0
Honeycomb filters	48.0	46.3	50.6	61.0
SiC-DPF	29.5	30.2	26.5	32.0
Cd-DPF / LSH	19.0	24.8	33.0	46.0
Sensors	5.3	8.2	10.1	14.0
Industrial Process	22.0	24.2	23.7	22.0
Ceramics Business	123.8	133.8	144.0	175.0
Metal related	18.6	18.4	17.2	18.5
SPE related	16.7	16.5	15.6	21.5
Electric Related	14.7	12.1	7.7	4.3
Soshin Electric CO.	11.7	11.2	10.5	10.7
Electronics Business	61.7	58.2	51.1	55.0
Total	239.4	247.8	252.8	290.0

※Table figures have not been retroactively adjusted

<After Consolidation Elimination>

(¥ Bil.)

	Mrch'13		March'14 Est.	
	<i>1st. Half</i>	<i>2nd. Half</i>	<i>1st. Half</i>	<i>2nd. Half</i>
Insulators	26.7	30.9	26.8	28.2
NAS	0	0.1	0	5.0
Power Business	26.7	31.0	26.8	33.2
Honeycomb filters	24.7	25.9	31.5	29.5
SiC-DPF	13.0	13.5	16.9	15.1
Cd-DPF・LSH	16.0	17.0	23.7	22.3
Sensors	4.7	5.4	7.2	6.8
Industrial Process	10.1	13.6	7.9	14.1
Ceramics Business	68.5	75.5	87.3	87.7
Metal related	8.7	8.5	9.1	9.4
SPE related	8.0	7.6	10.4	11.1
Electric Related	4.5	3.2	2.8	1.5
Soshin Electric CO.	5.3	5.2	5.5	5.2
Electronics Business	26.5	24.6	27.7	27.3
Total	121.7	131.1	141.8	148.2

※Table figures have not been retroactively adjusted

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.



 **NGK INSULATORS, LTD.**

*2-56, Suda-cho, Mizuho-ku, Nagoya
467-8530, Japan*

Finance & Accounting Department

Tel. : + 81-52-872-7212 Fax. : + 81-52-872-7160

E-mail : ir-office@ngk.co.jp

NGK Website (English Version) :

<http://www.ngk.co.jp/english/index.html>