

# FY2021 Results (from April 1, 2021 to March 31, 2022) April 28, 2022

This is a translation of materials used for the analyst meeting held online, Japan on April 28, 2022



President Shigeru Kobayashi



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.





Summary of Financial Results for FY2021 (Ended March 31, 2022)

Changes in Business Segments

Forecasts for FY2022 (Ending March 31, 2023)

**Segment Information** 

Capital Expenditures & Depreciation Costs & R&D

Mid-term Targets (Performance/ ROIC)

NGK Group Vision (Progress/Attempt)/NGK-version of Value Added

Financial Condition (Capital Policy & Treasury Stock Purchase/ Summary of Cash Flow/ Total Assets & Dividend)

# **FY2021 Consolidated Financial Results**

FIZUZI CONSULUALEU FINANCIAI RESULS						
	(¥Bil.)	FY2020	October announcement	FY2021	Growth ratio	
Net Sales		452.0	515.0	510.4	FX + 13% +12.7	
Operating Income		50.8	83.0	83.5	+4.6 +64%	
Ordinary Income		53.0	82.0	86.2	+63%	
Net Income Attributable to Owners of the Parent		38.5	60.0	70.9	+84%	
Exchange F	Rate USI EUF		(¥110) (¥131)	¥113 ¥131	+¥7 +¥7	
The highest net sales and operating income <sup>%1</sup>						
<ul> <li>Ceramics</li> <li>Despite the impact of semiconductor shortage, annual sales and income increased due to the recovery of sales of passenger cars and trucks as well as increased demand for automotive-related products due to tightening emission regulations.</li> <li>Process</li> <li>Sales and income increased as demand grew due to the high level of investment in foundries.</li> </ul>						

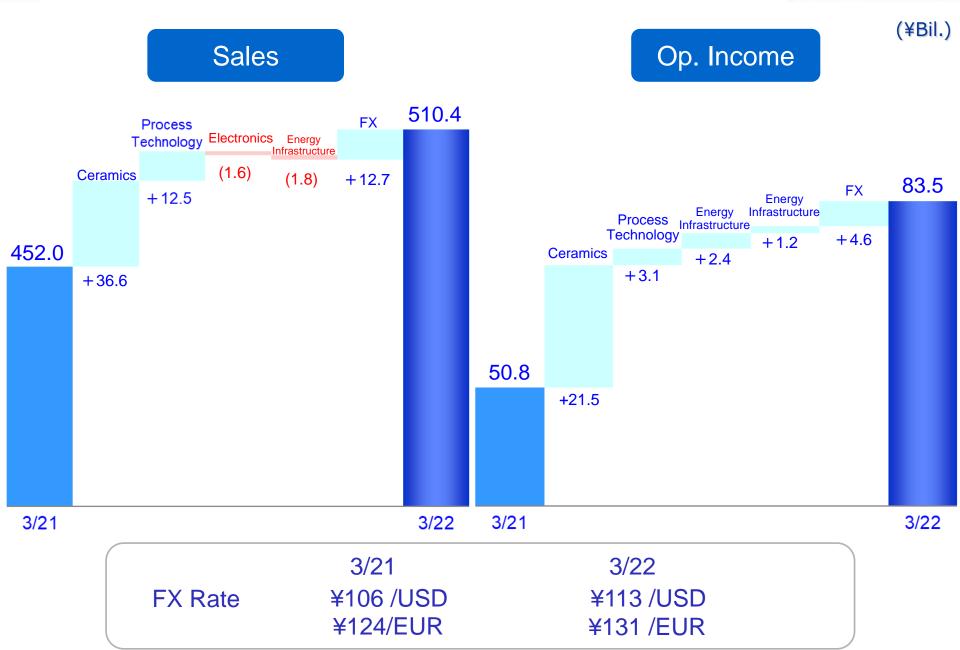
- Technology

   Electronics
   Sales declined since Soshin Electric Co., Ltd. was excluded from consolidation, but income increased
  - driven by higher demand for beryllium copper alloy, piezoelectric actuator for HDDs and others.
- Energy Deficit shrank due to the cost reduction and the increase in the price of insulators. Infrastructure
- Net Income Approximately 5.8 billion yen was recorded after the Tokyo High Court decided to cancel the correction enforced based on transfer pricing taxation.

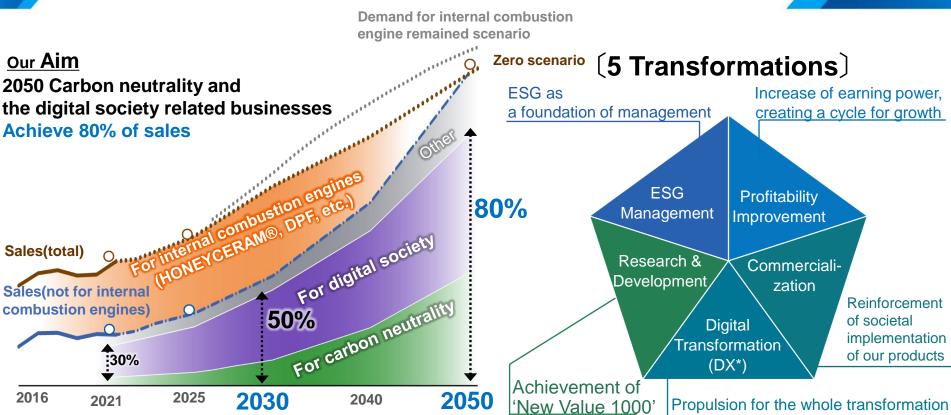
(Interest on tax refund of approximately 1.2 billion yen was recorded as non-operating income) (%1 \* Sales: FY2018 ¥463.5 bil. Income: FY2015 ¥80.9 bil.) 3

#### Analysis of Consolidated Sales and Operating Income for FY2021





# Organizational Changes to achieve Our Vision



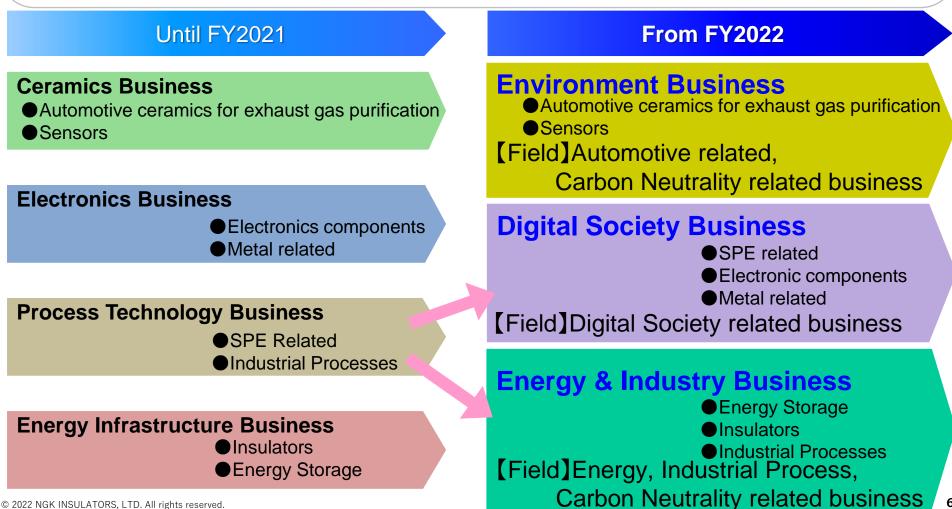
<Entity Conversion in April 2022>

- •Encourage ESG management and strengthen the handling of sustainability issues at the management level. (Explained on page 22)
- •Restructure existing businesses to better respond to changes and increase synergies. (Explained on the next page)
- Improve marketing capabilities to accelerate new product development. (Explained on page 21)

## **Changes in Business Segments**

# NGK

- Enhancing synergies by strengthening cooperation
- in the areas of electronics components and semiconductors
- •Agile response to changes with the simplified organization



Forecasts f	or FY2022
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()	∉Bil.)	FY2021	FY2022	Growth ratio
Net Sales		510.4	580.0	+14%
Operating Income		83.5	90.0	+ 8%
Ordinary Income		86.2	88.0	+ 2%
Net Income Attributable to Owners of the Parent		70.9	65.0	(8)%
Exchange Rate	USD EUR	¥113 ¥131	¥120 ¥130	+¥7 ¥(1)

#### YOY Sales and income are expected to increase except net income

- Environment Sales are expected to increase driven by the tightening emission regulations besides the recovery in sales of passenger cars and trucks, although income are expected to remain at the same level as the previous year due to soaring raw material/fuel prices and so forth.
- Digital Society Demand for components for semiconductor manufacturing equipment is expected to remain strong with the continued high level of investment in foundries. In addition, demand for electronic components such as ceramic packages is also expected to grow, leading to increased sales and income.
- Energy Demand industrial heating systems primarily for lithium-ion battery cathode materials is expected to grow both in Japan and overseas, leading to increased sales.

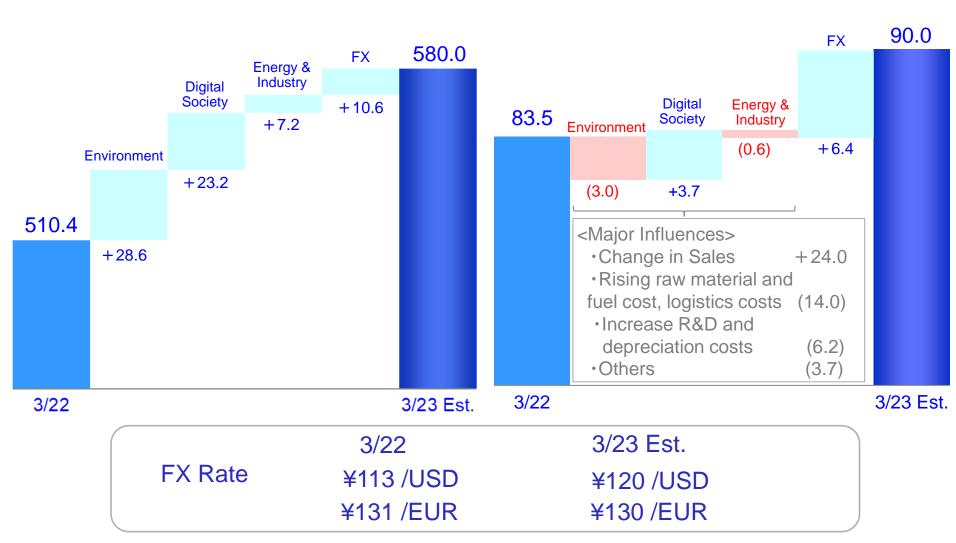
#### Analysis of Consolidated Sales and Operating Income for FY2022



(¥ Bil.)

Sales

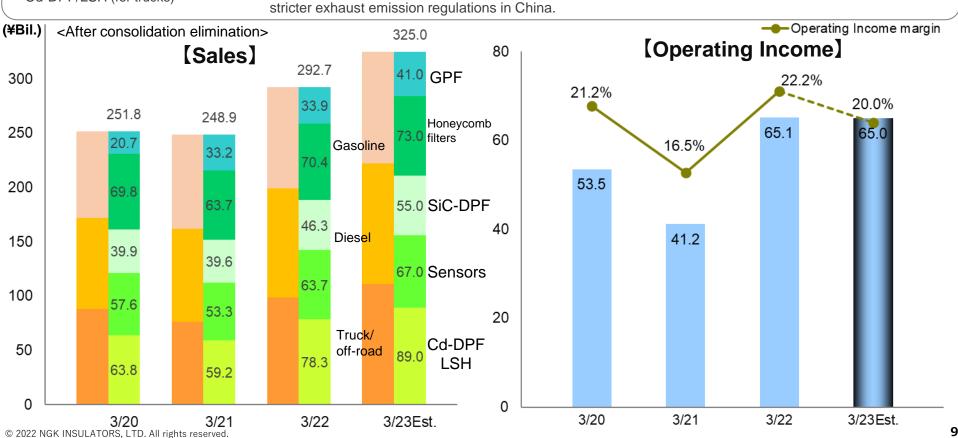
Op. Income



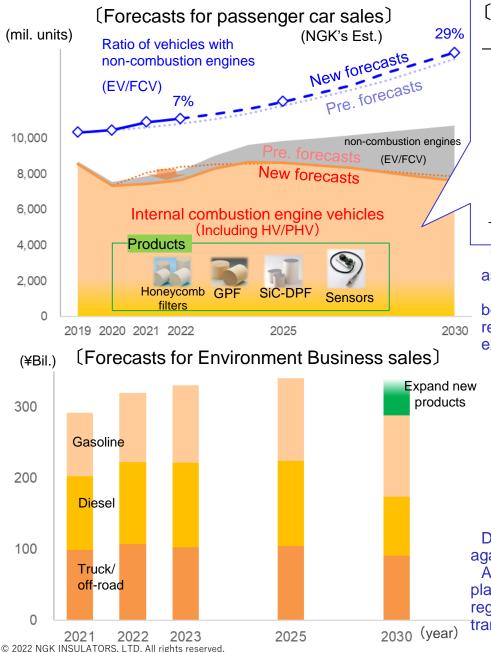
#### Automotive Related

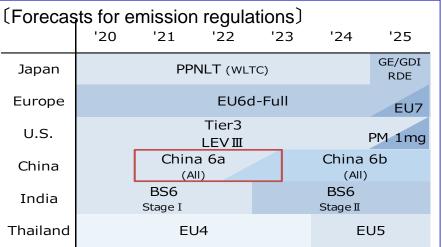
Although the impact of semiconductor shortage will continue, sales of passenger cars and trucks are expected to grow as the supply gradually recovers. Income will remain at the same level as the previous year due to soaring raw material and fuel prices and increased logistics costs. We will pay close attention to the future effect to sales and production of passenger cars and trucks under the War in Ukraine.

 ·GPF/Honeycomb filters (for gasoline-fueled vehicles)
 ·SiC-DPF (for diesel passenger vehicles/trucks)
 ·Sensors (for diesel passenger vehicles/trucks)
 ·Cd-DPF/LSH (for trucks)
 Cd-DPF/LSH (for trucks)
 ·Cd-DPF/LSH (for trucks)



#### **Forecasts for Products for Passenger Vehicles**





The ratio of vehicles with non-combustion engines in 2030 is assumed to be 29% (27% in the forecast released in October). Demand for internal-combustion engine vehicles continues to be affected by the semiconductor shortage, but it will gradually recover and increase until around 2025. Regulations are expected to be tightened in China, Europe and other countries.



[New products at 2030]

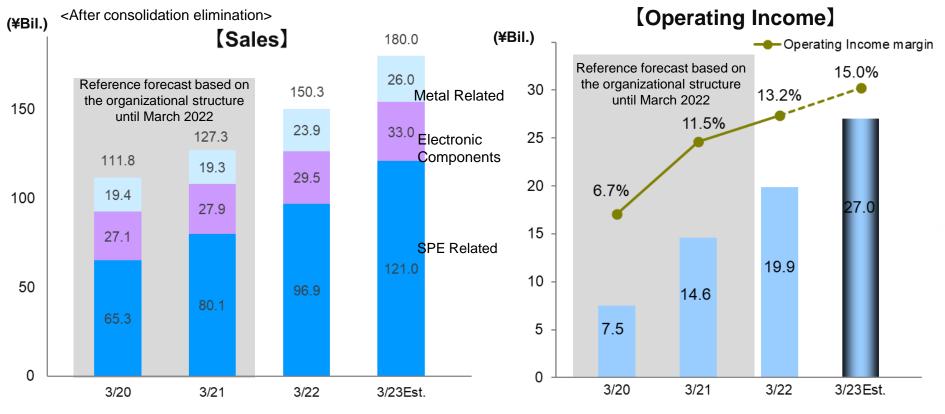
New products for Internal combustion engine vehicles



Sensors EHC: Electrically heated catalyst Demand is expected to expand primarily for GPF until around 2025 against the backdrop of stricter exhaust emission regulations. After the peak out of internal combustion engines, the business plans to expand new products to meet stricter exhaust emission regulations and expand decarbonization-related products to transform the business.

### **Digital Society Business**

- SPE Related (Components for semiconductor production equipment)
  - Demand is expected to grow as semiconductor manufacturers continue to invest more in solving semiconductor shortages amid the acceleration of IoT in various industries.
- Electronic Components
  - Sales of piezoceramic actuators for HDDs are expected to grow due to higher demand for large-capacity HDDs against the backdrop of the ongoing strong investment in data centers.
  - •Ceramic packages are expected to see an increase in demand for small crystal packages due to an increase in the number of in-vehicle products and 5Gsmartphones, wearable devices and others.
- Metal Related
  - ·Demand for industrial equipment is expected to remain strong.



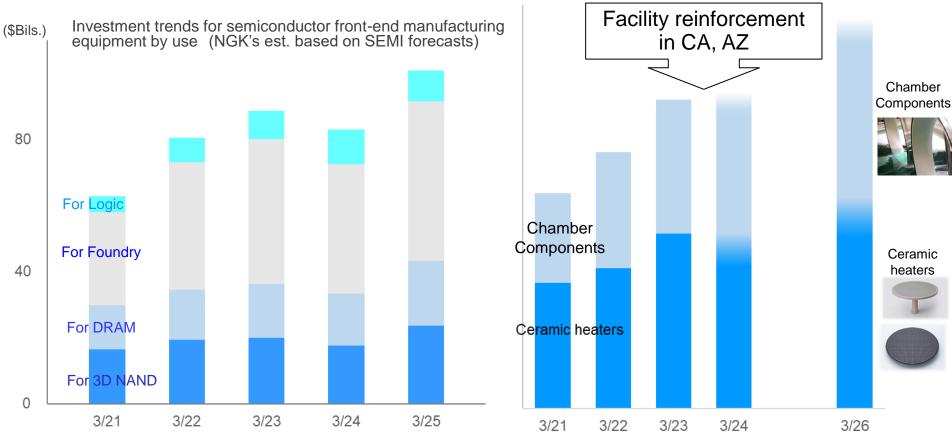
### Forecasts for the Digital Society Business



#### ■ SPE related

(Components for semiconductor production equipment)

[Forecasts for the SPE related mid to long-term sales]



Investment in semiconductors is expected to slow in FY2023 in reaction to the high level of capital investment in FY2022, but will expand again driven by semiconductor self-sufficiency policies developed by countries.

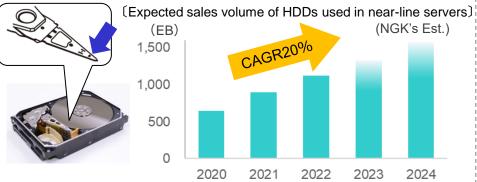
The semiconductor manufacturing equipment market is expected to expand primarily for foundries, driven by investments in 5G smartphones and data centers in the medium to long term.

Demand for both Susceptions and Chamber Components will continuously grow against the backdrop of strong investment. Facilities for chamber components in CA and AZ will be reinforced to meet growing demand.

### **Forecasts for the Digital Society Business**

Piezoceramic Actuators for HDD (Electronic Components) Piezoceramic actuators for HDDs are used primarily for data centers' near-line servers. The volume of data creation is continuously increasing due to the spread of video data and remote meetings etc., and heavy investments in data centers should continue.

Demand for high-capacity HDD storage continues to grow.

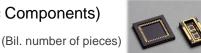


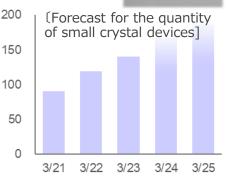
Aiming to increase profitability by reducing costs and focusing efforts to capture growing demand.

#### Ceramic Packages (Electronic Components)

Ceramic packages are used in crystal devices, CMOS, RF, etc.

For the time being, demand for crystal devices is expected to increase in small crystal packages against the backdrop of higher frequencies in short-range wireless communications and the expansion of 5G smartphones and wearable devices.





#### Aiming to continue investment to increase production in Japan

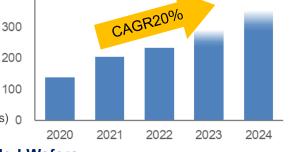
#### and overseas to meet growing demand.

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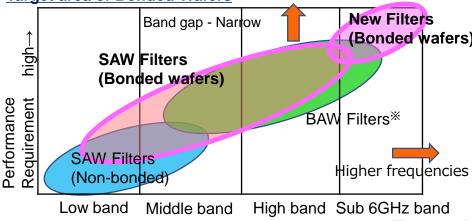
systems.

(Bil. number of pieces)

400



#### **Target area of Bonded Wafers**



Bonded Wafers for SAW Filters (Electronic Components)

Bonded wafers for high-performance SAW filters with enhanced

temperature characteristics. The market for high-performance filters is

expected to expand at an annual rate of about 20% due to an increase

in the number of mobile devices equipped with filters as well as stricter

(Total demand forecast of high-functionality filters) (NGK's Est.)

performance requirements with the advancement of communication

(\* BAW Filters :Complex filters manufactured in the thin film process (Frequency)

Aiming to capture growing demand by developing bonded wafers for the sub-6GHz band for 5G communications.

### **Forecasts for the Digital Society Business**



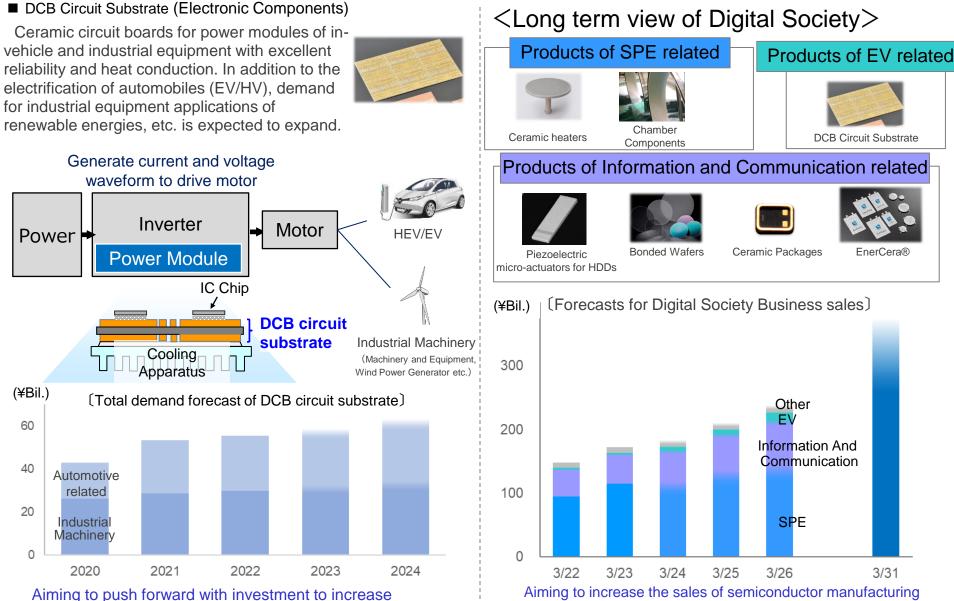
EnerCera®

3/31

equipment as well as information and communications related

areas, both of which are expected to continuously expand,

to more than 300 billion yen by 2030.



production and new customer acquisition to meet growing in-vehicle equipment demand.

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## **Energy & Industry Business**

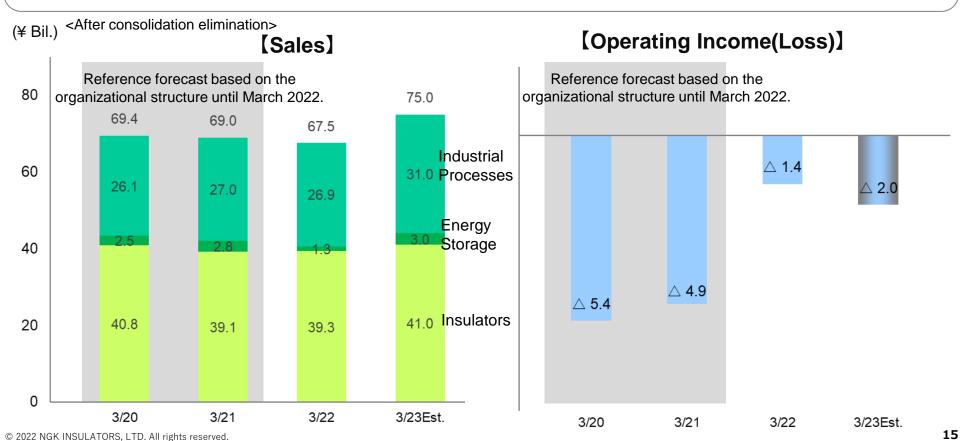


#### Insulators

•Sales in overseas markets are expected to increase due to increased sales amount, but income are likely to remain at the same level as the previous year due to soaring raw material prices.

- Energy Storage
  - •Despite the active inquiries, deficit will continue due to the effects of difficulties in procuring materials and others.
- Industrial Processes

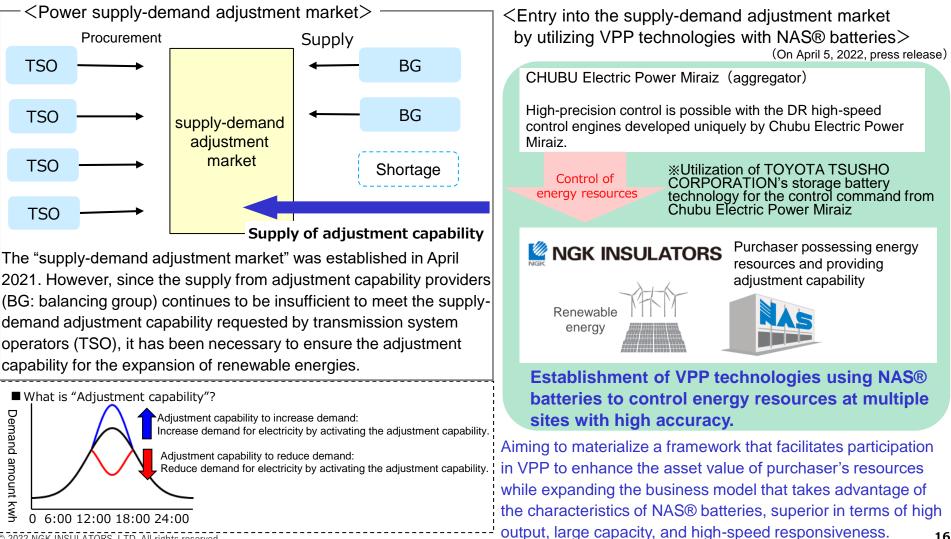
•Demand for NGK furnaces is expected to grow in Japan and China as the shift to 5G and EVs expands investment to increase production of electronics components and lithium-ion batteries.



### Forecasts for the Energy & Industry Business

#### ■ NAS® Batteries

Japan : Considering introducing renewable energies toward carbon neutrality by 2050 has become earnest. Since the amount of electricity generated by renewable energy sources, including solar power generation, varies depending on the weather, storage batteries have become increasingly important as an "adjustment capability" to provide a stable supply of electricity.



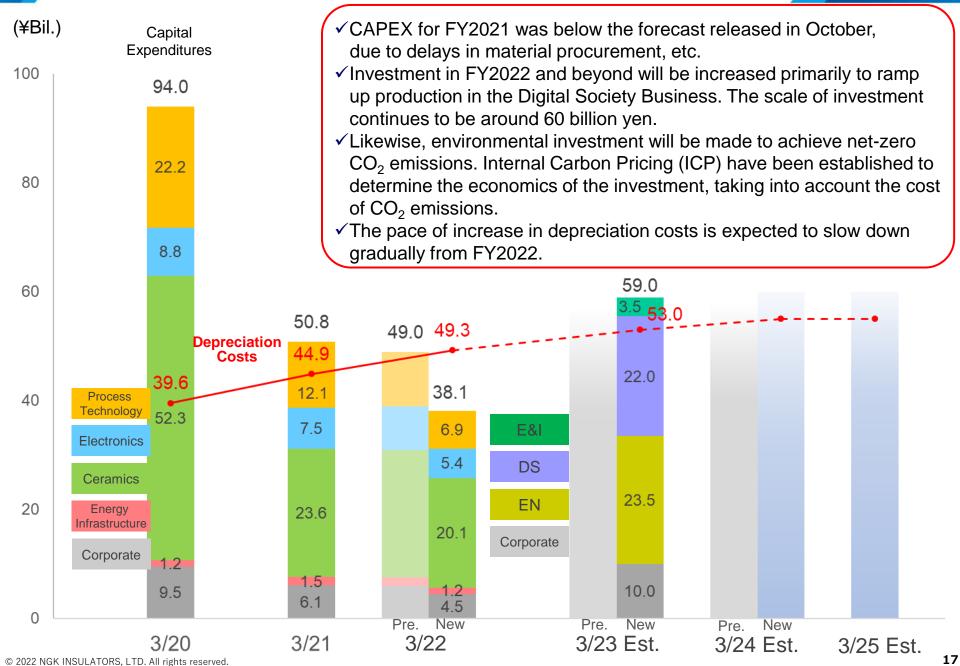
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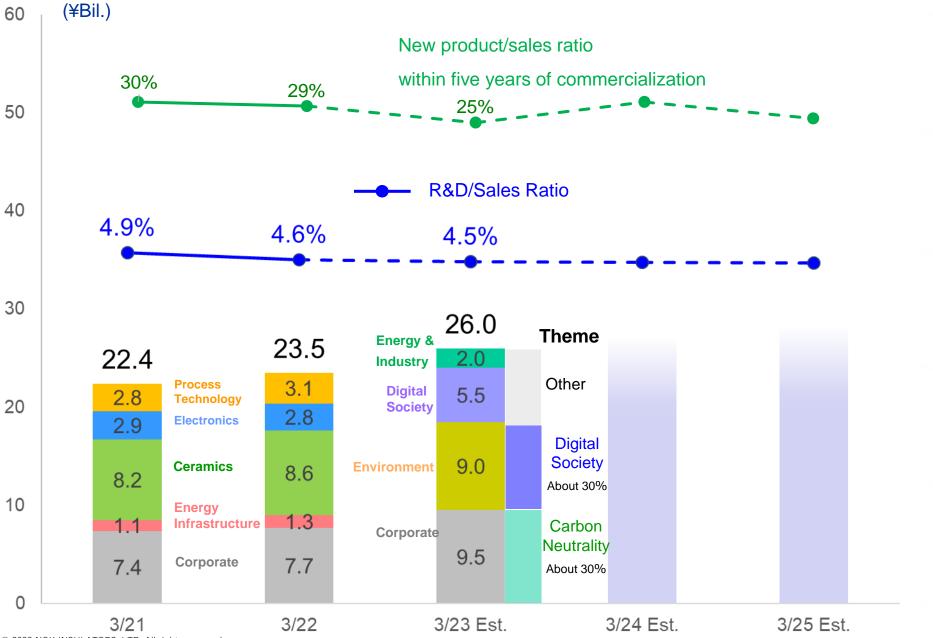
NAS® Batteries

### **Capital Expenditures & Depreciation Costs**





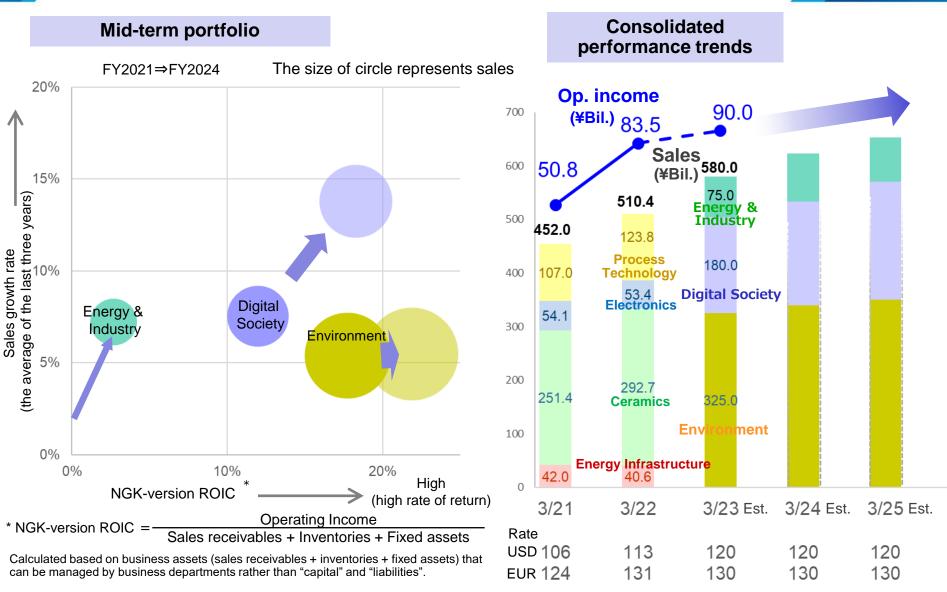




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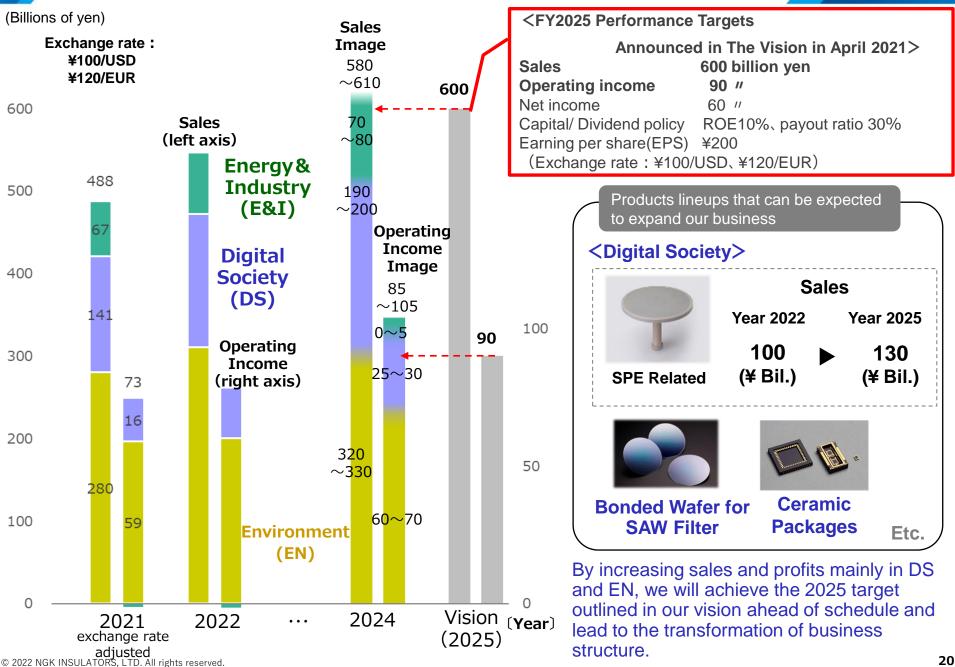
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#### Mid-term Targets (Performance/ROIC)



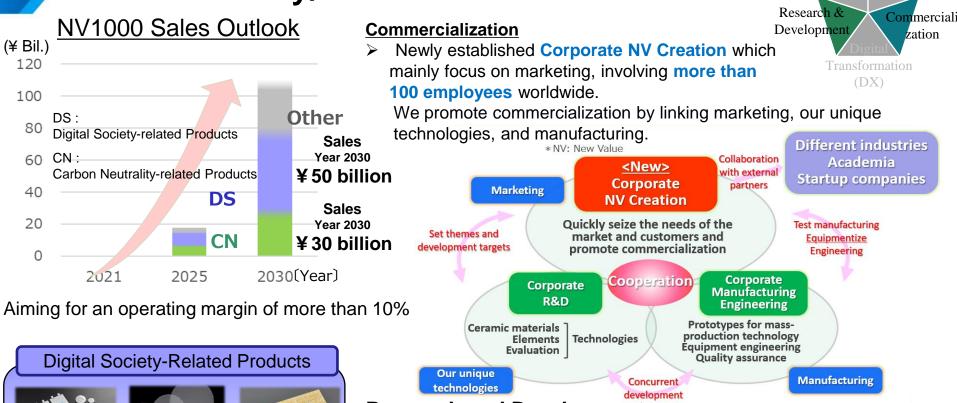
Aiming to enhance total sales and income by expanding the growth potential business, Digital Society, while maintaining growth and profitability in the Environment Business.

### **Progress on NGK Group Vision**



NGK

## Vision Activity / Creation of New Businesses



#### **Research and Development**

- Investment of 300 billion yen in R&D over the next 10 years. Concentration in the CN and DS areas (80%)
  - Increase the number of promising business, promote commercialization, and strengthen staffs by approx. 50% by 2030.

(Corporate R&D : 330 employees  $\rightarrow$  approx. 500 employees)

✓ We have built our unique MI(\*) method that utilizes our own data and apply it to new product development. We aim for reducing the development lead time by 1/10 by 2030.

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Zinc Rechargeable

**Batteries** 

Wafer

Products

**Carbon Neutrality-Related Products** 

Ceramic

Packages

Separation Membranes

**EnerCera**®

**Profitability** 

Manage

<sup>(\*)</sup> MI: Materials informatics21

#### Vision Activity / ESG Management, Commercialization

**Environment** : Propulsion of "NGK Group Environmental Vision" and contributing to achievement Of CN. In order to realize net zero  $CO_2$  emissions in our own activities by 2050, we promote research on conversion to alternative fuels and strengthen energy conservation.

**Utilization and investment of human resources** : Providing a variety of career paths that encourage employees to work for autonomous growth.

**Efforts to respect human rights** : Under "NGK Group Human Rights Policy", we will expand our efforts to respect human rights throughout the supply chain.

Social Contribution : Working on sustainable expansion such as scholarships for international students (1990's-)

**ESG Management Committee** : Established this spring with the president as chairman, and top management promotes ESG management.

**Compliance** : "NGK Group Basic Guidelines for Compliance Activities" were formulated last year, and we will unify the ideal way and values of compliance initiatives within the Group to improve the overall quality.

#### Example)

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### Solving Social Challenges through Our Business



ESG

Management

fitability

Commercializ ation

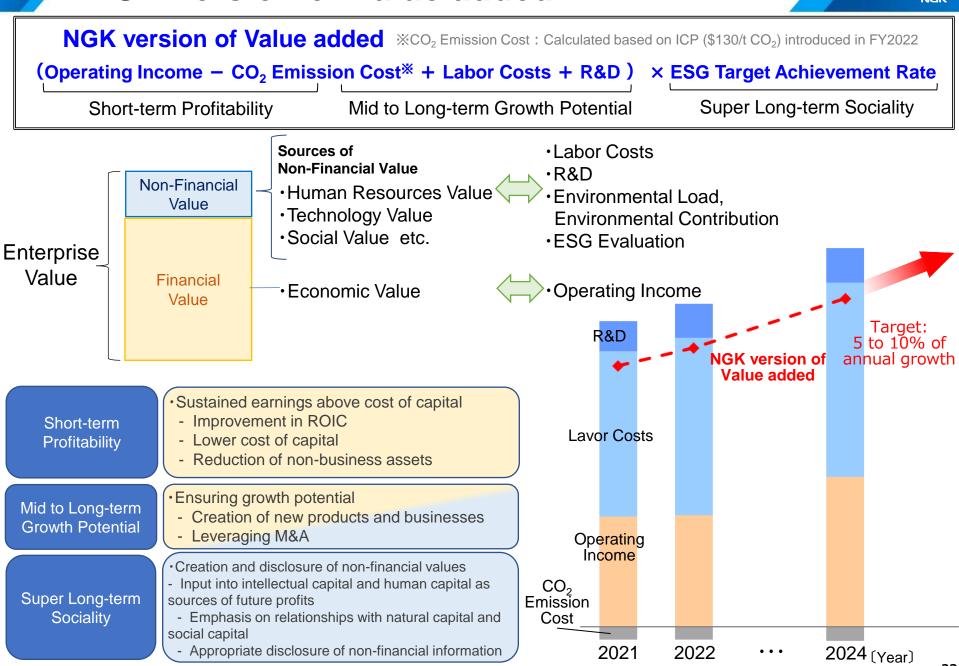
#### Promote the digestion of local electric power and the spread of renewable energy by NAS Batteries.

 Utilize NAS Batteries to widely introduce renewable energies and to expand the model of new regional electric power (such as Ena Electric Power and Abashiri Electric Power) to improve resilience.

Through such efforts, we contribute to the realization of carbon neutrality.



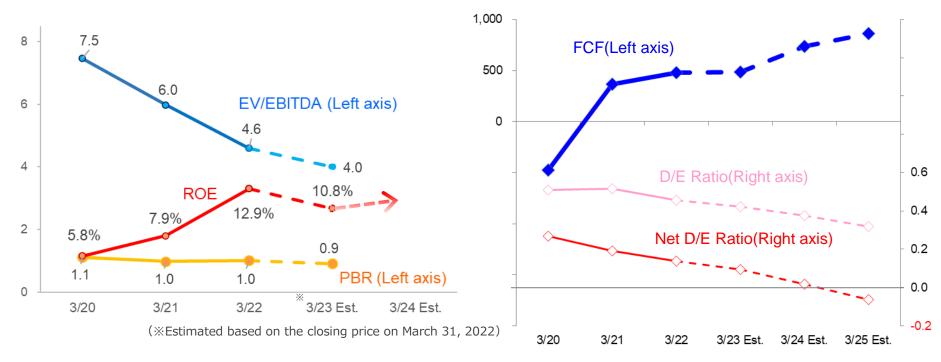
# **NGK version of Value added**



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# **Capital Policy & Treasury Stock Purchase**

- Achieve both profitability exceeding capital costs and financial soundness. Proactive shareholder returns from a mid- to long-term perspective.
- Maintain sound levels of profitability, capital turnover, and financial leverage consistent with business strategy.



FCF & DE Ratio transition

- Achieved 12.9% of ROE in FY2021 due to improved business performance. Continuously maintain ROE of 10% or more in FY2022 and beyond.
- FCF is expected to remain positive for the time being built on DS-related investments.
   Will secure investment funds for the launch of new businesses with leveraging of interestbearing liabilities and aim to improve capital efficiency.

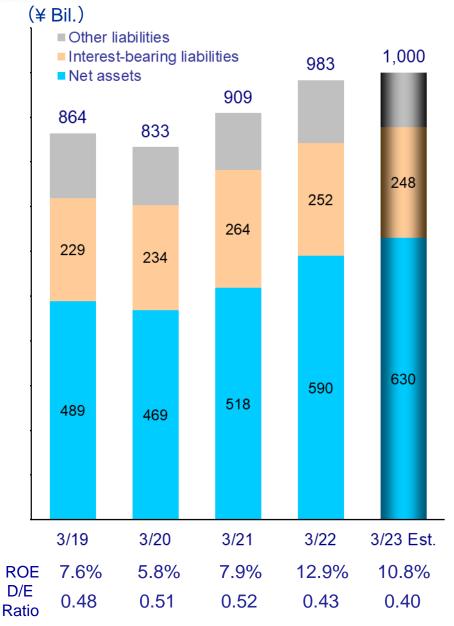
Summary o	f Cash Flow
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(¥ Bil.)

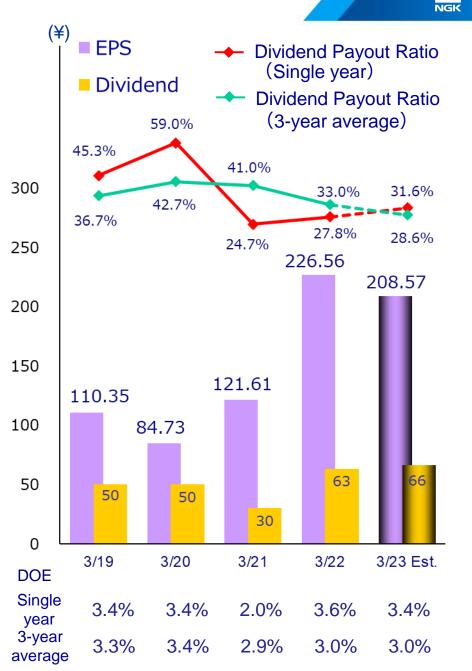


	3/21	3/22	3/23 Est.
Operating Activities	85.6	94.8	115.0
Investing Activities	<b>(51.7)</b> Investment(53.3)	<b>(46.3)</b> Investment(37.4)	<b>(64.0)</b> Investment (59.0)
Financing Activities	<b>12.3</b> New loans +32.5 Repayment (9.4)	<b>(45.3)</b> New loans +15.0 Repayment (34.0) Treasury stock purchase (9.7)	<b>(19.0)</b> New loans +25.0 Repayment (23.0)
Effect of Exchange Rate Changes on Cash & Cash Equivalents	5.2	5.5	(4.0)
Net Increase (Decrease) in Cash & Cash Equivalents	51.3	8.8	28.0
Cash & Cash Equivalents, End of Year	146.0	154.9	182.9

### **Total Assets & Dividend**



Equity ratio of 50% or higher will be maintained. © 2022 NGK INSULATORS, LTD, All rights reserved.



# Sales by Product (Annual)

(¥ Bil.)



			(. 2	
<after consolidation="" elimination=""></after>	3/20	3/21	3/22	3/23 Est.
Honeycomb filters	69.8	63.7	70.4	73.0
GPF	20.7	33.2	33.9	41.0
Cd-DPF+LSH	63.8	59.2	78.3	89.0
SiC-DPF	39.9	39.6	46.3	55.0
Sensors	57.6	53.3	63.7	67.0
Environment Business <sup>*1</sup>	251.8	248.9	292.7	325.0
SPE related	65.3	80.1	96.9	121.0
Electronics components	27.1	27.9	29.5	33.0
Metal related	19.4	19.3	23.9	26.0
Soshin Electric CO. *3	9.0	6.9		
Digital Society Business <sup>**2</sup>	120.8	134.2	150.3	180.0
Energy Storage	2.5	2.8	1.3	3.0
Insulators	40.8	39.1	39.3	41.0
Industrial Processes	26.1	27.0	26.9	31.0
Energy & Industry Business	69.4	69.0	67.5	75.0
Total	442.0	452.0	510.4	580.0

×1 The Ceramics Business has been renamed the Environment Business Group since the beginning of FY2022

※2 The Electronics Business has been dissolved and reorganized into the Digital Society Business Group composed of HPC, Electronics components, and Metal-related operations since the beginning of FY2022.

3 Excluded from consolidation in the fourth guarter of FY2020.

※4 The Energy Infrastructure Business has been dissolved and reorganized into the Energy & Industry Business Group composed of Energy Storage, Insulators and Industrial Processes. © 2022 NGK INSULATORS, LTD. All rights reserved.

### Sales by Product (Semi Annual)

(¥ Bil.)

	3/22		3/23 Est.	
<after consolidation="" elimination=""></after>	1 <sup>st</sup> . Half	2 <sup>nd</sup> . Half	1 <sup>st</sup> . Half	2 <sup>nd</sup> . Half
Honeycomb filters	35.8	34.6	36.0	37.0
GPF	16.1	17.8	17.0	24.0
Cd-DPF+LSH	40.9	37.4	42.0	47.0
SiC-DPF	22.7	23.6	26.0	29.0
Sensors	32.1	31.7	33.0	34.0
Environment Business <sup>**1</sup>	147.6	145.1	154.0	171.0
SPE related	45.8	51.1	56.0	65.0
Electronics components	14.0	15.5	16.0	17.0
Metal related	11.7	12.2	13.0	13.0
Digital Society Business <sup>*2</sup>	71.5	78.8	85.0	95.0
Energy Storage	0.8	0.5	1.5	1.5
Insulators	19.1	20.2	20.0	21.0
Industrial Processes	11.1	15.8	14.5	16.5
Energy & Industry Business	31.1	36.4	36.0	39.0
Total	250.2	260.3	275.0	305.0

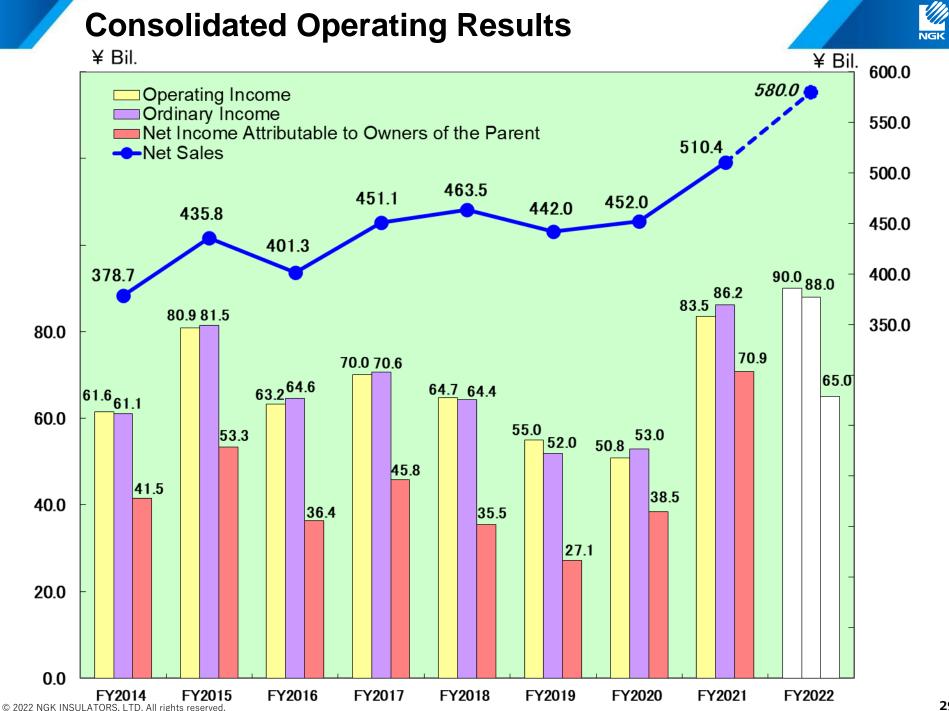
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※3 The Energy Infrastructure Business has been dissolved and reorganized into the Energy & Industry Business Group composed of Energy Storage, Insulators and Industrial Processes.

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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.

