

FY2024
Interim Business Report for Shareholders
(From April 1 to September 30, 2024)

Note: This document has been translated from part of the Japanese original for reference purposes only. In the event of any discrepancy between this translated document and the Japanese original, the original shall prevail. The Company assumes no responsibility for this translation or for direct, indirect, or any other forms of damages arising from this translation.

Message

We sincerely hope that this NGK Group Business Report for FY2024 finds our shareholders prospering and in good health.

With sincere gratitude for your continued support, we hereby present the NGK Group Business Report for the first six months of FY2024/159th term (from April 1, 2024, to September 30, 2024).

Net sales for the first six months of the consolidated fiscal year under review increased by 5.5% year-on-year to 298,352 million yen. The background is that shipments of piezoelectric micro actuators for hard disk drives (HDD) increased, coupled with brisk investments in data centers, and the depreciation of the yen created a positive effect to push up sales in addition to some shipments of products for semiconductor manufacturing equipment concentrating in this period although shipments of automotive-related products decreased partly due to adjustments to supply chain inventory in the wake of the slowdown of demand for automobiles in the Chinese and Southeast Asian markets. In terms of income, operating income rose by 22.2% year-on-year to 39,700 million yen, ordinary income increased by 32.6% to 38,367 million yen, and net income attributable to owners of the parent grew by 42.3% to 25,869 million yen primarily due to the sales increase and the effect of the weak yen.

In terms of forecasting the FY2024 full-year results, whereas some shipments of NAS[®] Batteries for big projects will be delayed into the next fiscal year, shipments of products for semiconductor manufacturing equipment will be moved forward, and piezoelectric micro actuators for HDD are projected to continue to see a strong performance. Although net sales will remain the same as the previous forecast, which was up 7.1% year-on-year to 620,000 million yen, operating income and ordinary income have been revised upward due to the change to the mix of shipments. We forecast operating income will be 78,000 million yen, up 17.5% year-on-year, and ordinary income will be 74,000 million yen, up 17.4% year-on-year. Net income attributable to owners of the parent is expected to be 53,000 million yen, which is unchanged from the previous forecast, because of the recording of an impairment loss for business assets for the Package Business, which continues to see a delay in a demand recovery.

The interim dividend for the fiscal year under review will be 30 yen per share. The year-end dividend is expected to be 30 yen per share at this point.

Our business environment for the second half of the fiscal year under review continues to be uncertain due to an economic slowdown, triggered by the global trend of extended monetary tightening, concerns over sluggish semiconductor investments, and so on. Nevertheless, we will aim to become a company that continues to grow globally, by addressing the following key issues set at the beginning of the fiscal year.

1) Advancement of ESG Management

2) Initiatives for Improving Earning Capacity of Existing Businesses and Creating New Businesses

Through these initiatives, the NGK Group will work to further reinforce its management base, offer products that exceed society's expectations by using its unique ceramic technology, and continue to grow for a sustainable future. We would deeply appreciate your continued support.

December 2024

President
Shigeru Kobayashi

Business Overview

Earnings Trends

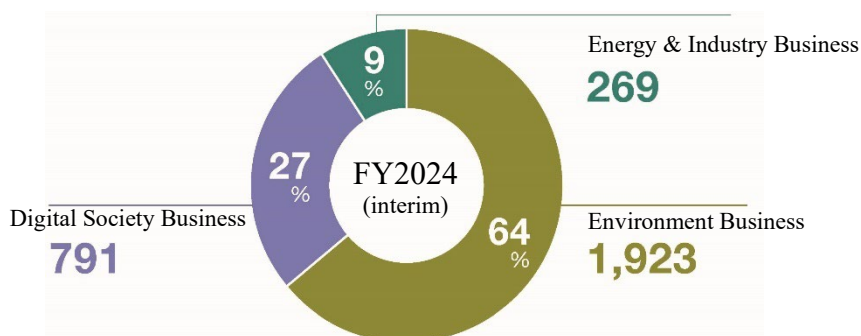
■ Full year ■ Six-month total

Net sales (100 million yen)	Operating income (100 million yen)	Profit attributable to owners of the parent (100 million yen)																											
2,983.52 Up 5.5% year-on-year	397.00 Up 22.2% year-on-year	258.69 Up 42.3% year-on-year																											
<table border="1"> <caption>Net sales (100 million yen)</caption> <thead> <tr> <th>Year</th> <th>Six-month total</th> <th>Full year</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>2,829</td> <td>5,789</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>2,984</td> <td>6,200</td> </tr> </tbody> </table>	Year	Six-month total	Full year	FY2023	2,829	5,789	FY2024 (forecast)	2,984	6,200	<table border="1"> <caption>Operating income (100 million yen)</caption> <thead> <tr> <th>Year</th> <th>Six-month total</th> <th>Full year</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>325</td> <td>664</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>397</td> <td>780</td> </tr> </tbody> </table>	Year	Six-month total	Full year	FY2023	325	664	FY2024 (forecast)	397	780	<table border="1"> <caption>Profit attributable to owners of the parent (100 million yen)</caption> <thead> <tr> <th>Year</th> <th>Six-month total</th> <th>Full year</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>182</td> <td>406</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>259</td> <td>530</td> </tr> </tbody> </table>	Year	Six-month total	Full year	FY2023	182	406	FY2024 (forecast)	259	530
Year	Six-month total	Full year																											
FY2023	2,829	5,789																											
FY2024 (forecast)	2,984	6,200																											
Year	Six-month total	Full year																											
FY2023	325	664																											
FY2024 (forecast)	397	780																											
Year	Six-month total	Full year																											
FY2023	182	406																											
FY2024 (forecast)	259	530																											
<p>Net sales increased by 5.5% year-on-year to 298,352 million yen partly due to the depreciation of the yen in addition to an increase in shipments of Digital Society Business-related products.</p>	<p>Operating income rose by 22.2% year-on-year to 39,700 million yen mainly due to the net sales increase and the effect of a weak yen.</p>	<p>Profit attributable to owners of the parent grew by 42.3% year-on-year to 25,869 million yen primarily owing to the net sales increase and the effect of a weak yen.</p>																											

Total assets (100 million yen)	Total liabilities and net assets (100 million yen)									
11,276 11,058	<p>■ Net assets ■ Liabilities</p> <table border="1"> <caption>Total liabilities and net assets (100 million yen)</caption> <thead> <tr> <th>Year</th> <th>Liabilities</th> <th>Net assets</th> </tr> </thead> <tbody> <tr> <td>FY2023 (term-end)</td> <td>4,244</td> <td>7,032</td> </tr> <tr> <td>FY2024 (interim)</td> <td>4,086</td> <td>6,972</td> </tr> </tbody> </table>	Year	Liabilities	Net assets	FY2023 (term-end)	4,244	7,032	FY2024 (interim)	4,086	6,972
Year	Liabilities	Net assets								
FY2023 (term-end)	4,244	7,032								
FY2024 (interim)	4,086	6,972								
<p>Total assets decreased by 21,729 million yen from the end of the previous consolidated fiscal year to 1,105,847 million yen due in main part to decreases in notes and accounts receivable-trade and contract assets as well as property, plant and equipment while cash and deposits increased.</p>	<p>Total liabilities decreased by 15,748 million yen from the end of the previous consolidated fiscal year to 408,602 million yen mainly due to decreases in long-term borrowings, deferred tax liabilities included in “Other” of non-current liabilities and others although short-term borrowings rose.</p> <p>Total net assets contracted by 5,981 million yen from the end of the previous consolidated fiscal year to 697,244 million yen primarily due to a decrease in foreign currency translation adjustments.</p>									

Business Overview by Segment

Net sales by segment
(100 million yen)



Environment Business	Digital Society Business	Energy & Industry Business																											
<table border="1"> <caption>Environment Business Sales Data</caption> <thead> <tr> <th>Year</th> <th>Full year</th> <th>Six-month total</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>3,907</td> <td>1,933</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>3,920</td> <td>1,923</td> </tr> </tbody> </table>	Year	Full year	Six-month total	FY2023	3,907	1,933	FY2024 (forecast)	3,920	1,923	<table border="1"> <caption>Digital Society Business Sales Data</caption> <thead> <tr> <th>Year</th> <th>Full year</th> <th>Six-month total</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>1,382</td> <td>661</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>1,680</td> <td>791</td> </tr> </tbody> </table>	Year	Full year	Six-month total	FY2023	1,382	661	FY2024 (forecast)	1,680	791	<table border="1"> <caption>Energy & Industry Business Sales Data</caption> <thead> <tr> <th>Year</th> <th>Full year</th> <th>Six-month total</th> </tr> </thead> <tbody> <tr> <td>FY2023</td> <td>500</td> <td>235</td> </tr> <tr> <td>FY2024 (forecast)</td> <td>600</td> <td>269</td> </tr> </tbody> </table>	Year	Full year	Six-month total	FY2023	500	235	FY2024 (forecast)	600	269
Year	Full year	Six-month total																											
FY2023	3,907	1,933																											
FY2024 (forecast)	3,920	1,923																											
Year	Full year	Six-month total																											
FY2023	1,382	661																											
FY2024 (forecast)	1,680	791																											
Year	Full year	Six-month total																											
FY2023	500	235																											
FY2024 (forecast)	600	269																											
<p>Net sales decreased by 0.4% year-on-year to 192,530 million yen mainly due to inventory adjustments in supply chains in the wake of a slowdown in automotive demand in the Chinese market and the Southeast Asian market. On the other hand, operating income increased by 9.4% year-on-year to 35,310 million yen primarily due to the positive effect of a weak yen and a delay in the occurrence of expenses.</p> <p>*The above net sales include 183 million yen in intersegment transactions or transfers.</p>	<p>Net sales grew by 19.8% year-on-year to 79,142 million yen due to an increase in shipments of piezoelectric micro actuators for HDD, coupled with brisk investments in data centers in addition to some shipments of products for semiconductor manufacturing equipment concentrating in the period. Operating income rose by 614.2% to 5,250 million yen mainly due to the net sales increase and the effect of a weak yen.</p>	<p>Net sales increased by 14.4% year-on-year to 27,242 million yen as investments in power transmission and distribution remained firm in Japan and the U.S., resulting in shipments of insulators trending well, coupled with overseas projects of NAS Batteries. Operating income (losses) fell into the red with operating losses of 865 million yen (operating losses of 523 million yen for the same period of the previous fiscal year) due in main part to a rise in procurement costs of materials for NAS Batteries despite the positive effect of a weak yen.</p> <p>*The above net sales include 379 million yen in intersegment transactions or transfers.</p>																											

* There was a change in reportable segments during the first six months of the fiscal year under review. Industrial equipment-related products, which had been included in “Energy & Industry Business” have been reclassified to “Environment Business.” With regard to the comparable numbers of each segment from the first six months of the previous fiscal year, such numbers from that period have been reclassified to the segment after the change.

Latest Topics

1. NGK and BASF release advanced type of sodium-sulfur batteries (NAS Battery) NAS MODEL L24

BASF Stationary Energy Storage GmbH, a wholly owned subsidiary of BASF, and we have released an advanced container-type NAS battery (sodium-sulfur battery).

The new product NAS MODEL L24 has been jointly developed by NGK and BASF and is characterized by a significantly lower degradation rate of less than 1% per year thanks to a reduced corrosion in battery cells. These improvements allow projects to be implemented using significantly fewer number of NAS battery containers over project running time, and with lower maintenance costs.

NAS batteries are long-duration, high-energy stationary storage batteries. They feature long life and enhanced safety and can provide a stable power supply over six hours or longer. In more than 20 years they have been deployed at over 250 locations worldwide, with a total output of almost five gigawatt-hours. NAS batteries are used for various use cases, including stabilizing of renewable energy and optimizing its utilization, through peak shaving and load balancing as well as emergency power supply. NAS Batteries are one of key contributors to a successful energy transition and carbon neutrality.



Exterior image of NAS MODEL L24

2. Revision of Key Post Personnel System Toward the Active Participation of and Promotion of Autonomous Behavior of Diverse Human Resources

We are to revise the personnel system for key posts (managerial positions) in April 2025 with the aim of making the most of diverse human resources and promoting their autonomous behavior. We will support human resources that take up challenges and initiate a change through measures such as treating employees in accordance with the contents of their work, regardless of age and years of service, by which we will drive the transformation of our business make-up toward the fields related to carbon neutrality and Digital Society, which are cited in the NGK Group Vision.

Currently, only one category covers all grades. In the new key post personnel system, multiple categories expert grade for those who specialize in deploying high levels of professional knowledge and skills and a management grade that is exclusively dedicated to organizational management—will be newly established to provide diverse human resources with places that help them demonstrate their talents. We will prepare job descriptions for all duties and disclose them internally so as to clarify the contents of each duty. At the same time, annual wages will be determined by duties, and the downgrading of treatment depending on age and the age limit for managerial personnel will be abolished. The performance evaluation scheme will include appraisals of actions that key posts are required to take, in addition to achievement-based assessment, whereby we encourage the creation of the workplace that allows members to take up challenges for reform, respects diversity and is full of energy and excitement. Furthermore, we will introduce an internal talent scout system in addition to the current internal job application system so that we will increase the opportunity for employees to proactively take up the challenge of moving up to a higher job grade. Through these initiatives, we can revitalize the organization and prepare an environment that creates new challenges.

3. NGK's DAC Ceramic Substrate Adopted for DAC Demonstration Project at Expo 2025 Osaka-Kansai

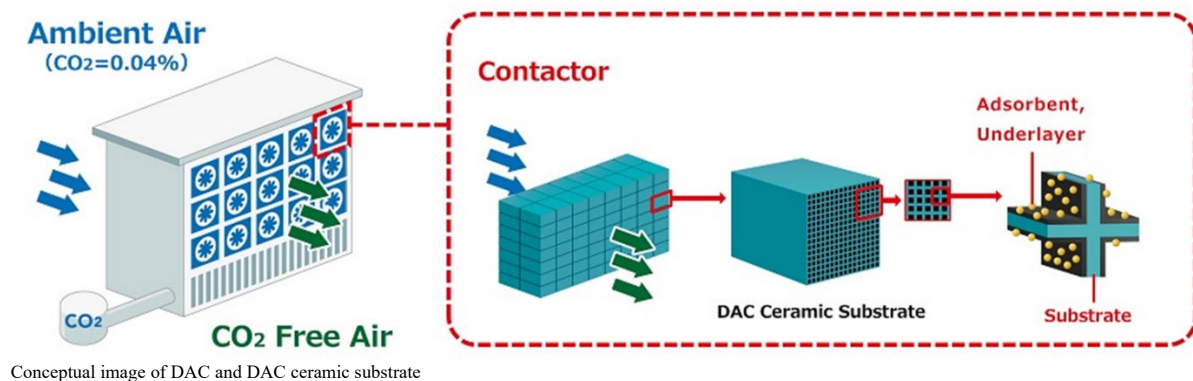
We have been selected by the Research Institute of Innovative Technology for the Earth (RITE) to provide its Direct Air Capture (DAC) ceramic substrate for use in a DAC system to be demonstrated at the 2025 World Expo in Osaka, Kansai, Japan (Expo 2025 Osaka-Kansai). The DAC substrate will be used in one of several CO₂ removal units to be installed at the event.

DAC is a technology for capturing CO₂ contained in the atmosphere via direct adsorption. Projections suggest DAC will adsorb approximately 1 billion tons* of CO₂ per year from the atmosphere by the year 2050.

Our DAC ceramic substrate will be used to adsorb CO₂ in a DAC system to be demonstrated at Expo 2025 Osaka-Kansai. Leveraging its ceramic honeycomb structure technology cultivated through the development of ceramic substrates for automotive catalytic converters, we are focusing on the development of DAC ceramics with compact dimensions, large surface areas and low-pressure loss (ability to efficiently process large volumes of air). Using coating technology specifically developed for DAC ceramic substrates, the substrate is coated with a porous material that supports CO₂ adsorbents on the surface layer of the substrate.

Working with companies that have DAC plant manufacturing technologies, we aim to contribute to the public rollout of DAC technology to help realize a carbon-neutral society.

Image of DAC facilities



Conceptual image of DAC and DAC ceramic substrate

4. NGK published the NGK Report 2024

We see the NGK Report 2024 as an important tool for communicating with stakeholders such as shareholders and investors. Its goal is to provide an integrated report of financial and non-financial information, as well as our business strategy, to facilitate a more systemic understanding of our corporate value and the form we should aspire to.

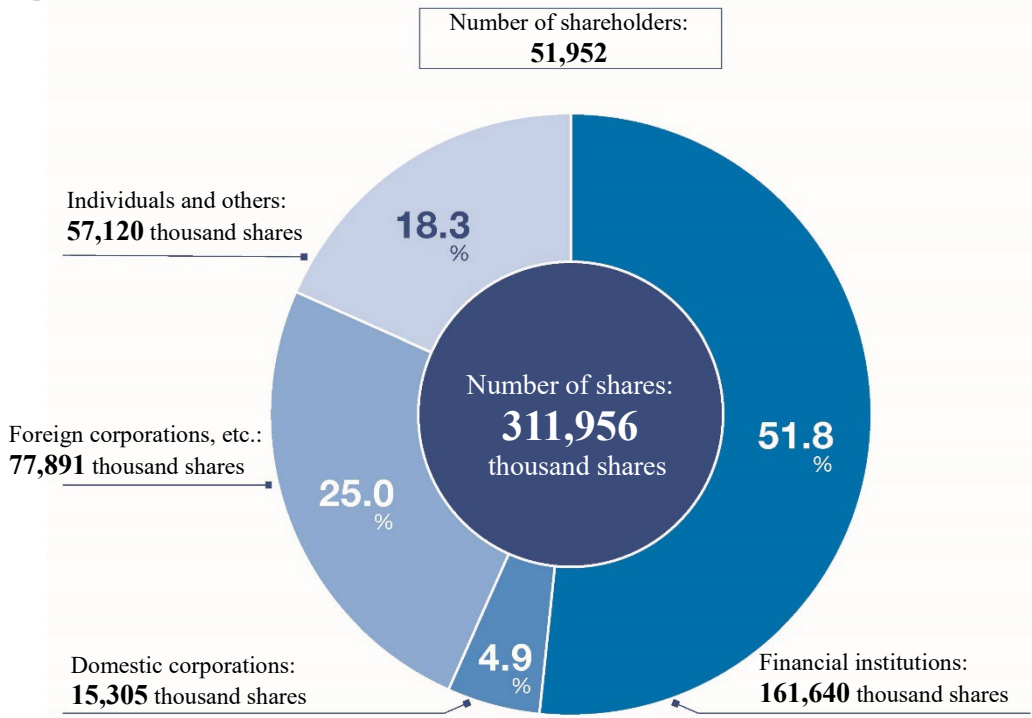
For more details on the NGK Report 2024, please see the following URL:

[NGK REPORT 2024](#)

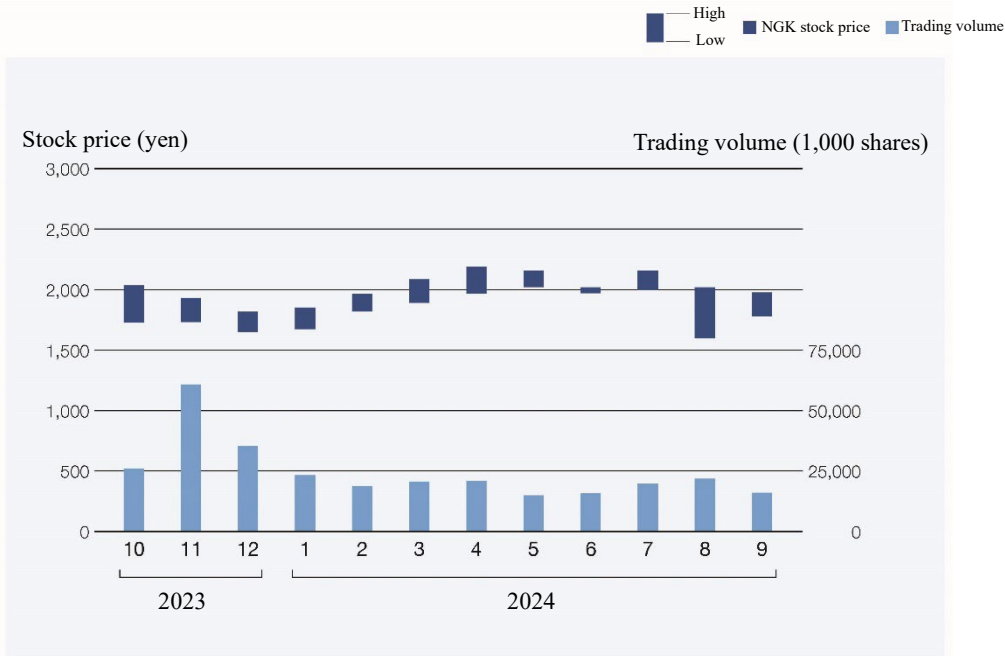


Stock Information

Shareholder status (as of September 30, 2024)



Stock price trend



Major shareholders (top 10)	Number of shares held (1,000 shares)	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	52,364	17.74
Meiji Yasuda Life Insurance Company	21,695	7.35
The Dai-ichi Life Insurance Company, Limited	21,457	7.27
Custody Bank of Japan, Ltd. (Trust Account)	19,390	6.57
MUFG Bank, Ltd.	7,204	2.44
National Mutual Insurance Federation of Agricultural Cooperatives	7,029	2.38
Aioi Nissay Dowa Insurance Co., Ltd.	4,387	1.48
STATE STREET BANK AND TRUST COMPANY 505001	3,924	1.32
JPMorgan Securities Japan Co., Ltd.	3,667	1.24
BNYM AS AGT/CLTS 10 PERCENT	3,563	1.20

(Notes) We hold 16,838,621 treasury shares but they are excluded from the major shareholders above. The shareholder ratios above are calculated based on the number of shares after deducting the number of treasury shares from the total number of shares issued and rounded down to the second decimal place.