



Financial Results Briefing for the Second Quarter of the Fiscal Year Ended March 2025

December 2, 2024

KROSAKI HARIMA CORPORATION

(Securities Code: 5352)

1. Overview of the Financial Results for the
2Qs of the Fiscal Year Ending March 2025

2. Full-year Business Results Forecast

3. Progress on the 2025 Revised
Management Plan

[Reference] Overview of the Company

1. Overview of Financial Results for the 2Qs of the Fiscal Year Ended March 2025 (First Half of FY2024)

Overview of the Financial Results for the 2Qs of the Fiscal Year Ending March 2025 (Consolidated)

Overview of Business Results

(Billions of yen)

	First half of FY2023	First half of FY2024	Year-on-year change	
Net sales	89.39	88.09	(1.30)	(1.5)%
Operating profit	7.59	6.28	(1.31)	(17.3)%
Ordinary profit	8.59	6.54	(2.05)	(23.9)%
Profit ^{*1}	6.61	4.16	(2.45)	(37.1)%
ROS ^{*2}	9.6%	7.4%	(2.2)pt	
ROE ^{*3}	17.2%	9.4%	(7.8)pt	
ROIC ^{*4}	9.7%	7.3%	(2.4)pt	

Business Environment

- Domestic total crude steel output (first half of FY2024): 41.84 million tons (down 4.4% year on year)
- Worldwide crude steel output (January to September 2024): 1,394.10 million tons (down 1.9% year on year)
- Total crude steel output in India (January to September 2024): 110.30 million tons (up 5.8% year on year)

*1: Profit attributable to owners of parent *2: Return on sales (ordinary profit to net sales ratio)

*3: ROE (return on equity) has been calculated by doubling the profit for the first half of the fiscal year

Analysis of Factors Causing Change in Ordinary Profit

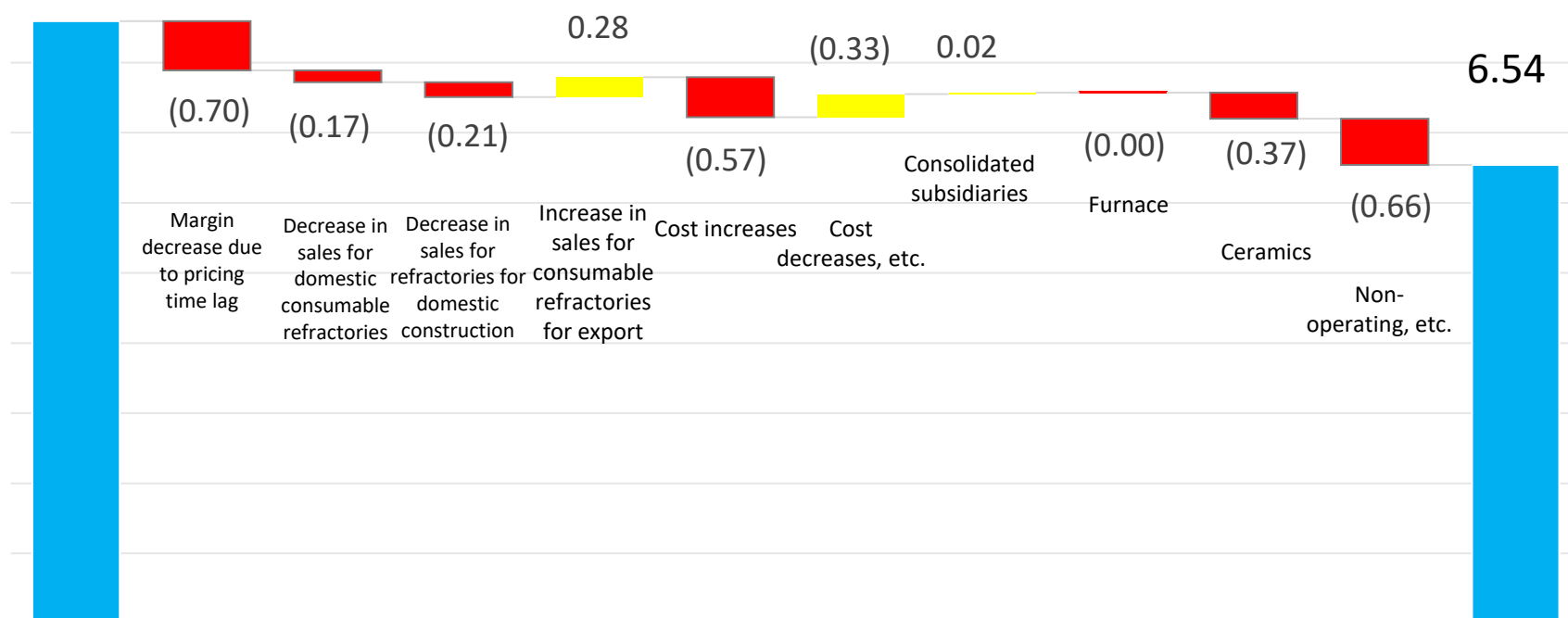
[First Half of FY2023 vs. First Half of FY2024] (Consolidated)

The impact of the decreased domestic and overseas crude steel output, as well as the one-time cost burden caused by the rising cost of imported raw materials reflecting the weaker yen in the earlier half of the period under review led to the decline in ordinary profit.

(Billions of yen)

Profit decline of ¥2.05 billion

8.59



First half of FY2023

First half of FY2024

Financial Position (Consolidated)

<Balance Sheets>

(Billions of yen)

	March 31, 2024	September 30, 2024	Change	Main factors
Assets	179.01	177.15	(1.86)	—
Current assets	119.16	116.67	(2.48)	Decrease in inventories
Property, plant and equipment and intangible assets	46.98	48.20	+ 1.22	Acquisition of machinery and equipment
Investments and other assets	12.86	12.26	(0.60)	—
Liabilities	86.32	81.79	(4.53)	Decrease in trade payables
Net assets	92.69	95.35	+ 2.66	Increase in retained earnings

Balance of interest-bearing liabilities	36.88	38.85	+ 1.97
D/E ratio	0.42	0.43	+ 0.01
Equity ratio	48.7%	50.6%	+ 2.0pt

<Cash Flows>

	First half of FY2023	First half of FY2024	Main factors for cash flows during period under review
Cash flows from operating activities	5.81	3.97	Profit before income taxes
Cash flows from investing activities	(2.15)	(4.09)	Acquisition of non-current assets in Japan and overseas
Free cash flow	3.66	(0.12)	—
Cash flows from financing activities	(1.94)	(0.26)	—

Performance by Segment (Consolidated)

(Billions of yen)

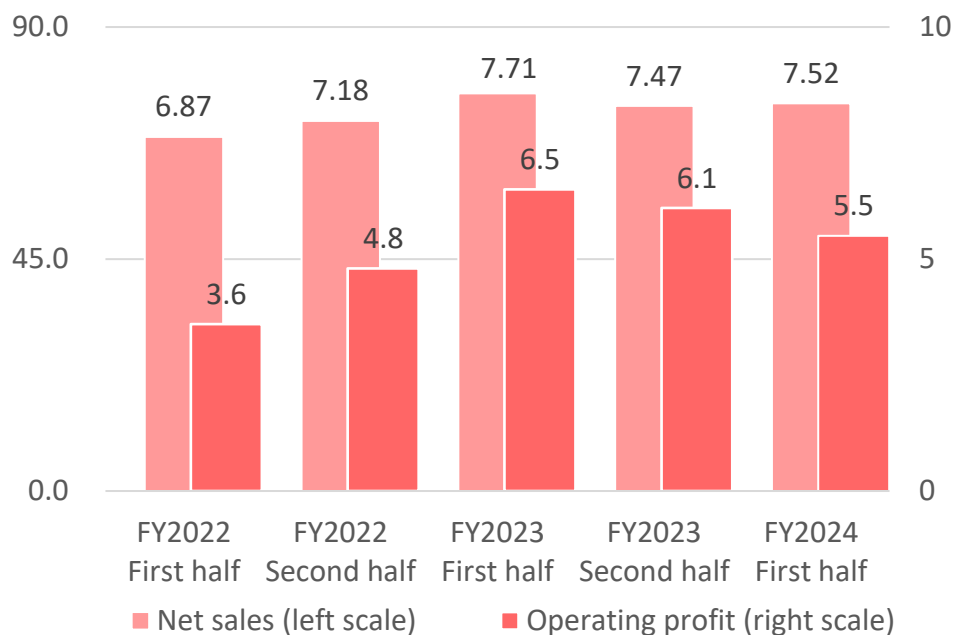
		First half of FY2023	First half of FY2024	Year-on-year change	
Refractories	Net sales	77.13	75.27	(1.85)	(2.4)%
	Segment profit	6.50	5.55	(0.95)	(14.6)%
Furnace	Net sales	7.32	8.18	+0.86	+11.8%
	Segment profit	0.30	0.29	(0.00)	(0.1)%
Ceramics	Net sales	4.15	3.75	(0.40)	(9.7)%
	Segment profit	0.49	0.11	(0.37)	(75.6)%
Real estate and others	Net sales	0.78	0.86	+0.08	+11.5%
	Segment profit	0.29	0.30	+0.00	+2.8%
Total	Net sales	89.39	88.09	(1.30)	(1.5)%
	Segment profit	7.59	6.28	(1.31)	(17.3)%

Note: The net sales of each segment represent sales to external customers and do not include inter-segment sales or transfers. The amounts of segment profit are based on operating profit.

Business Result

(Billions of yen)

	First half of FY2023	First half of FY2024	Year-on-year change	
Net sales	77.13	75.27	(1.85)	(2.4)%
Operating profit	6.50	5.55	(0.95)	(14.6)%



Review of the First Half

- Despite efforts to expand business in the strong Indian steel market, due to the impact of a decrease in domestic and overseas crude steel output, as well as the one-time cost burden caused by the rising costs of imported raw materials reflecting the weaker yen in the earlier half of the period under review, both sales and profits decreased.

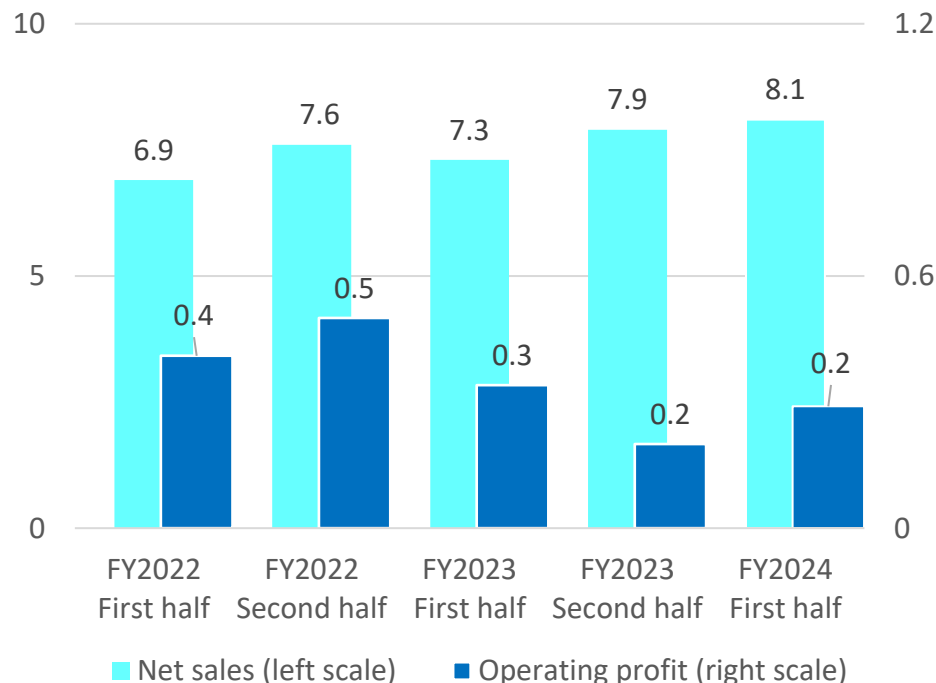
Initiatives for the Future

- In Japan, further enhance competitiveness through the promotion of automation, labor-saving, and digital transformation, as well as market launch of new products by using our technological strength, and strengthen revenue base.
- In India, strengthen production capacity to capture growing demand.
- In Europe and the Americas, work to further expand business revenue through deepening collaboration between alliance partner companies and our manufacturing and sales bases.

Business Results

(Billions of yen)

	First half of FY2023	First half of FY2024	Year-on-year change	
Net sales	7.32	8.18	+0.86	+11.8%
Operating profit	0.30	0.29	(0.00)	(0.1)%



Review of the First Half

- Sales increased due to the commencement of large-scale construction projects. Profits decreased owing in part to temporary differences in the composition of orders received.

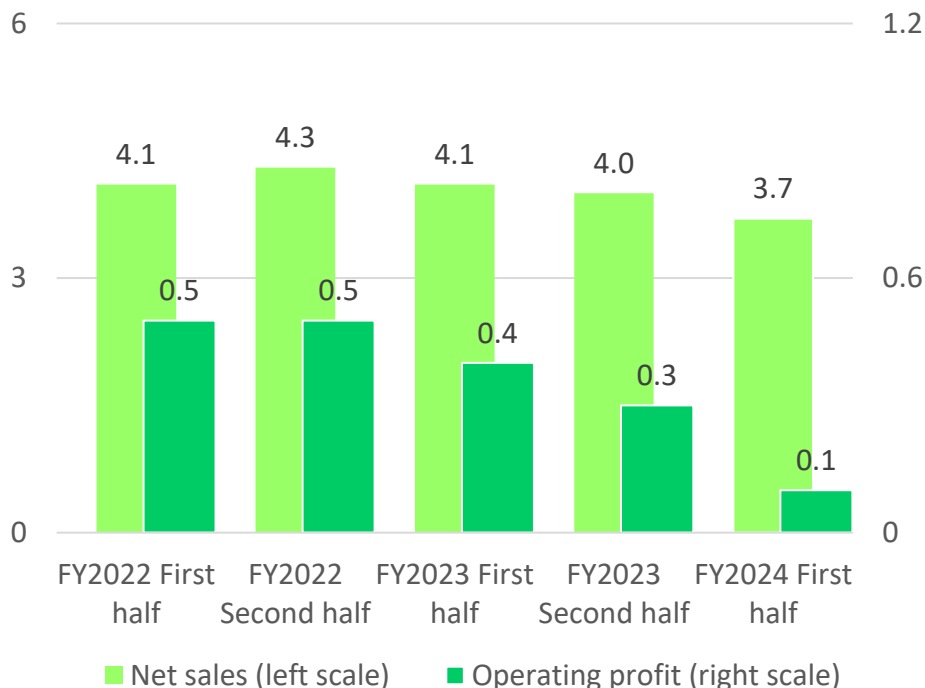
Initiatives for the Future

- Increase earning power by continuing to receive orders for maintenance work for steel facilities and reducing costs through personnel optimization, etc.
- Expand revenue through orders received for new and maintenance projects for non ferrous materials users such as biomass and other power generation boilers and incinerators, in addition to the design and construction of energy saving industrial furnaces.

Business Results

(Billions of yen)

	First half of FY2023	First half of FY2024	Year-on-year change	
Net sales	4.15	3.75	(0.40)	(9.7)%
Operating profit	0.49	0.11	(0.37)	(75.6)%



Review of the First Half

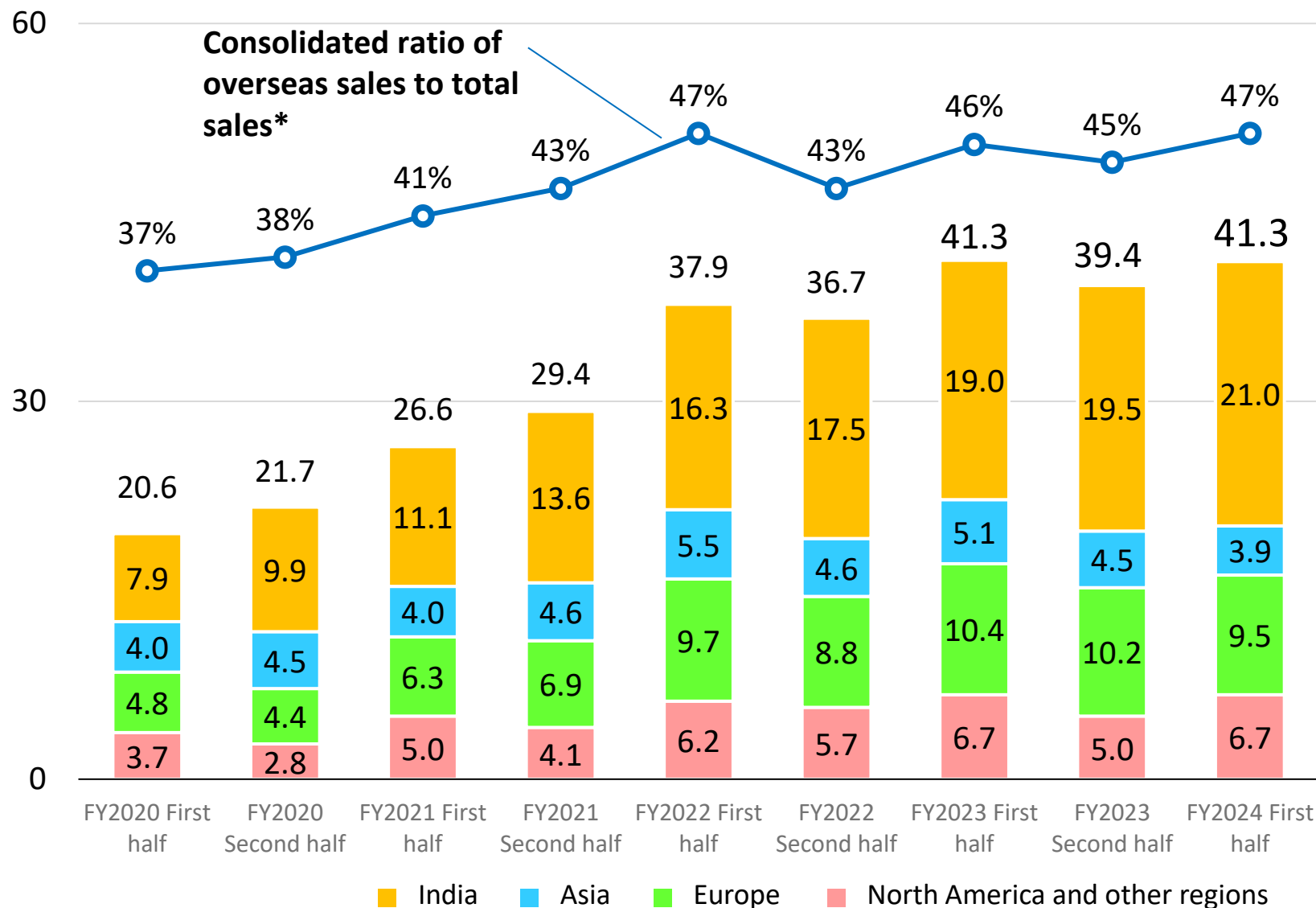
- Both sales and profits declined due to a trough in orders received for ceramic materials for semiconductor manufacturing equipment and for thermal insulation materials for household fuel cells.

Initiatives for the Future

- The US Semiconductor Equipment and Materials International (SEMI*) announced in September its forecast that from 2025 to 2027, the world's semiconductor manufacturers will make the largest investment in history in semiconductor manufacturing equipment. We will steadily capture the growing demand for ceramics primarily for semiconductor lithography equipment.
- We will further grow revenue by driving sales expansion in each field, including thermal insulation materials for the environmental field, ceramic materials for electronic components, and products for new fields such as aerospace and health care.

Consolidated Overseas Net Sales (in Japanese Yen)

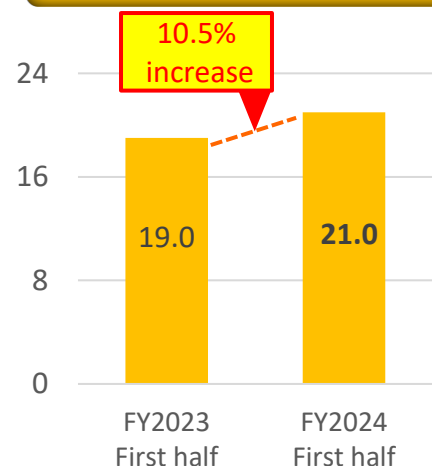
(Billions of yen)



*Percentages are rounded to the nearest whole number.

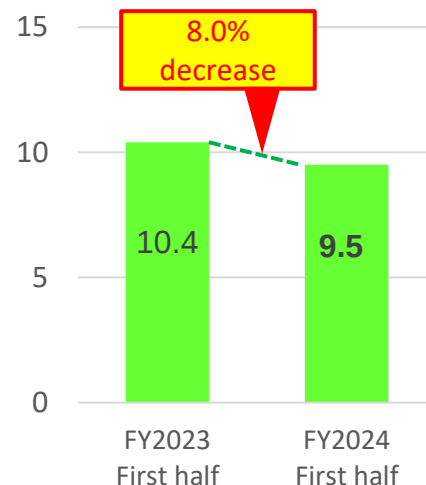
Consolidated Net Sales by Region (in Billions of Yen)

India



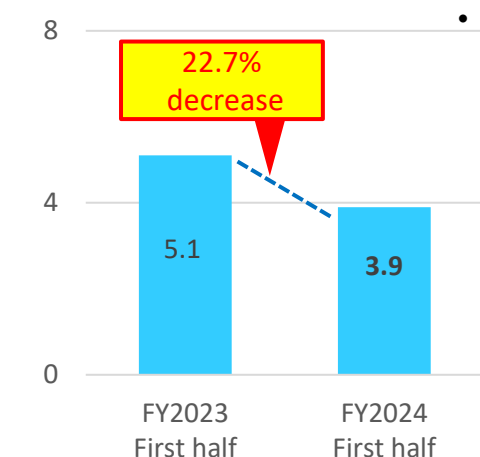
- In Jan–Sep, crude steel output increased 5.8% year on year.
- Growth in crude steel output slowed down year on year mainly due to the effects of the general elections in India, however, sales increased thanks to the establishment of the full-range system at the local subsidiaries and expanded sales utilizing our product competitiveness.

Europe



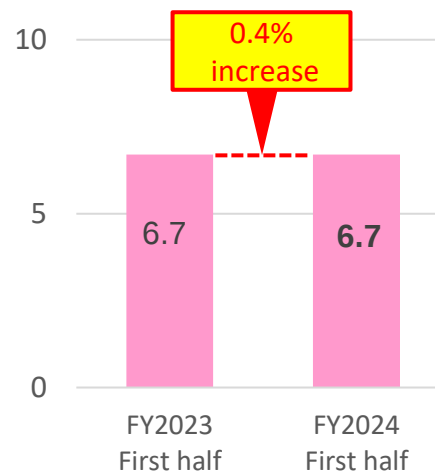
- In Jan–Sep, crude steel output in the 27 EU countries for the steel industry increased slightly by 1.5% year on year, but orders from certain customers declined mainly due to changes in production structure. Additionally, orders from the cement industry also declined due to decreased customer production and postponement of maintenance work.
- As a result, overall sales decreased.

Asia



- Demand for refractories declined due to a decrease in crude steel output in the Asia region stemming from the inflow of inexpensive Chinese steel products.

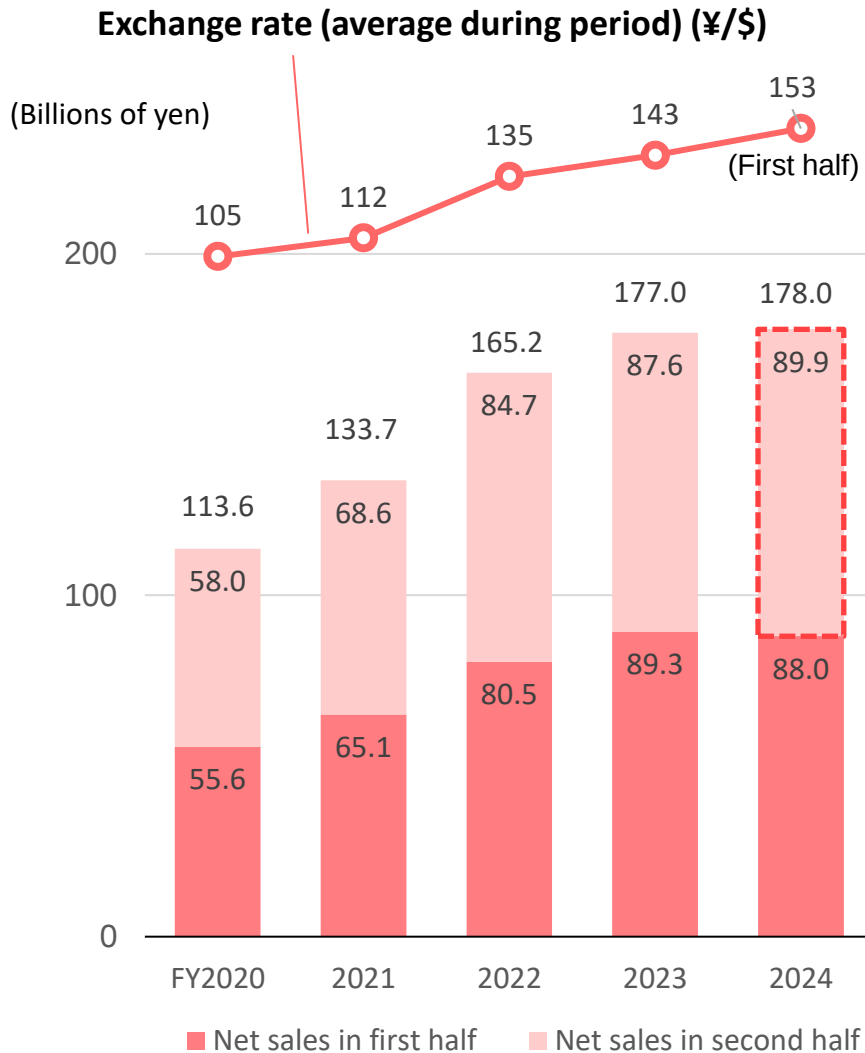
North America and other regions



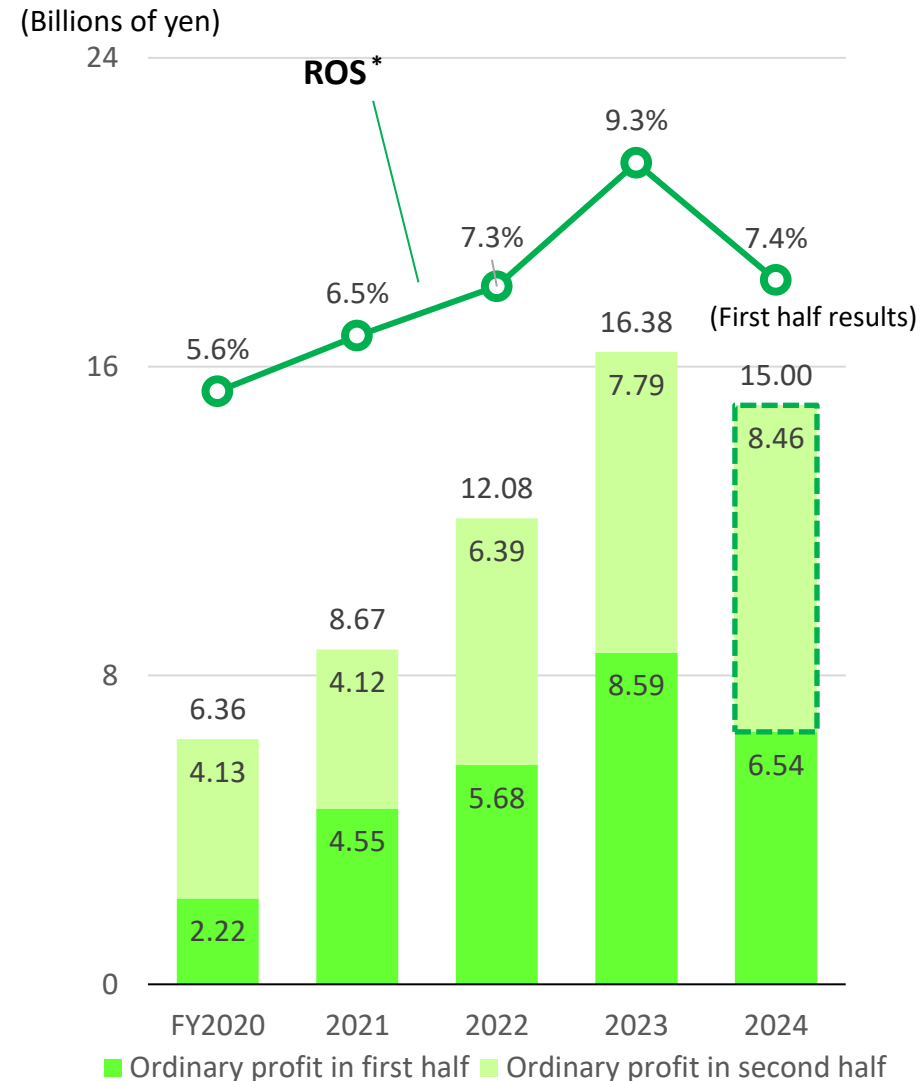
- North America: In Jan–Sep, crude steel output decreased 3.9% year on year, however, sales increased slightly due to expanded sales of the refractories for the cement industry.
- South America: Promoted collaborations with alliance partners.

Key Indicators (Consolidated)

Net Sales



Ordinary Profit



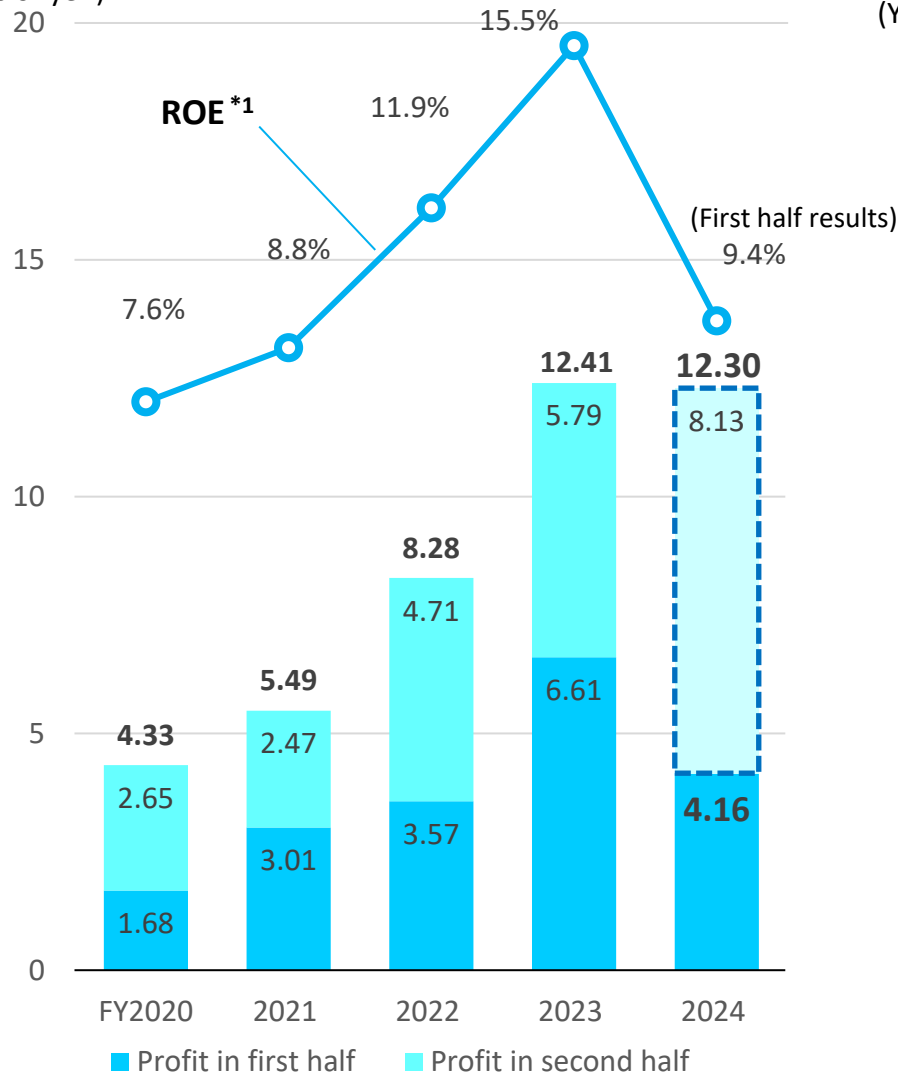
*Full-year return on sales (ordinary profit to net sales ratio). Figures for FY2024 are for the first half.

Key Indicators (Consolidated)

Profit

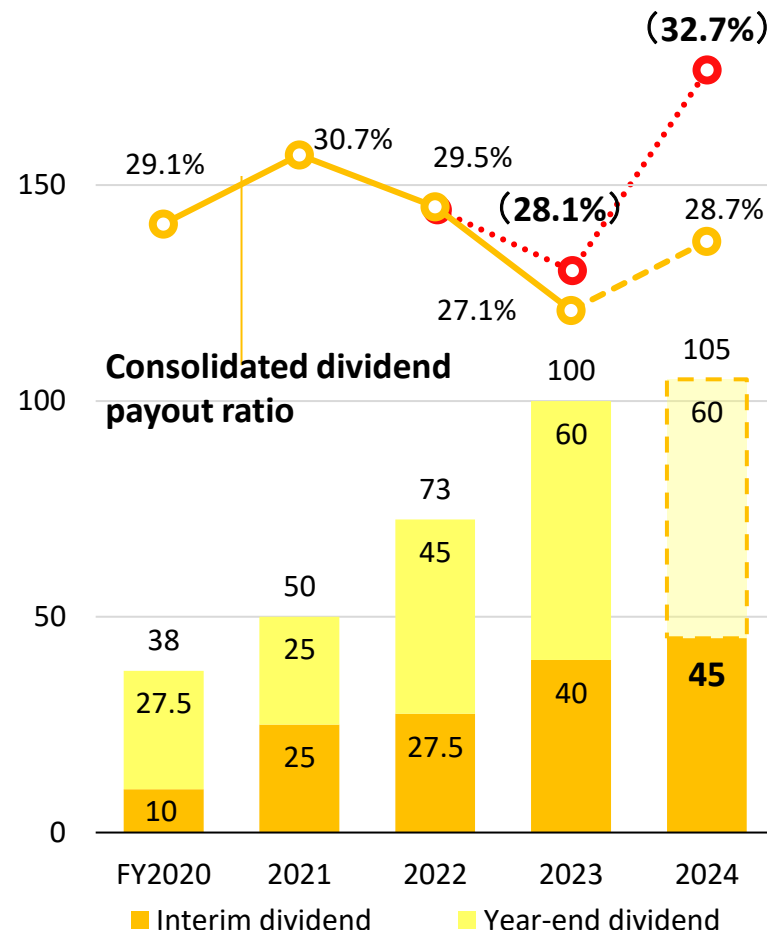
Shareholder Dividends

(Billions of yen)



(Yen)

Figures in parentheses indicate the dividend payout ratio after deduction of the gain on sales of land of the Indian subsidiary from profit.



*1: Full-year return on equity. Calculated by doubling the profit for the first half of the fiscal year for FY2024 only.

The Company conducted a 4-for-1 stock split of its common shares as of April 1, 2024. Stock prices are calculated on the assumption that the stock split was conducted at the beginning of FY2020.

2. Full-year Business Results Forecast

FY2024 Full-year Business Results Forecast (Consolidated)

(Billions of yen)

	FY2023	FY2024*	Year-on-year change	
Net sales	177.02	178.00	+ 0.97	+ 0.5 %
Operating profit	14.69	15.00	+ 0.31	+ 2.1 %
Ordinary profit	16.38	15.00	(1.38)	(8.5)%
Profit	12.41	12.30	(0.11)	(0.9)%
ROS	9.3%	8.4%	(0.9)pt	—

*A notice regarding revisions to performance forecasts was released on October 29, 2024.

Analysis of Factors Causing Change in Ordinary Profit

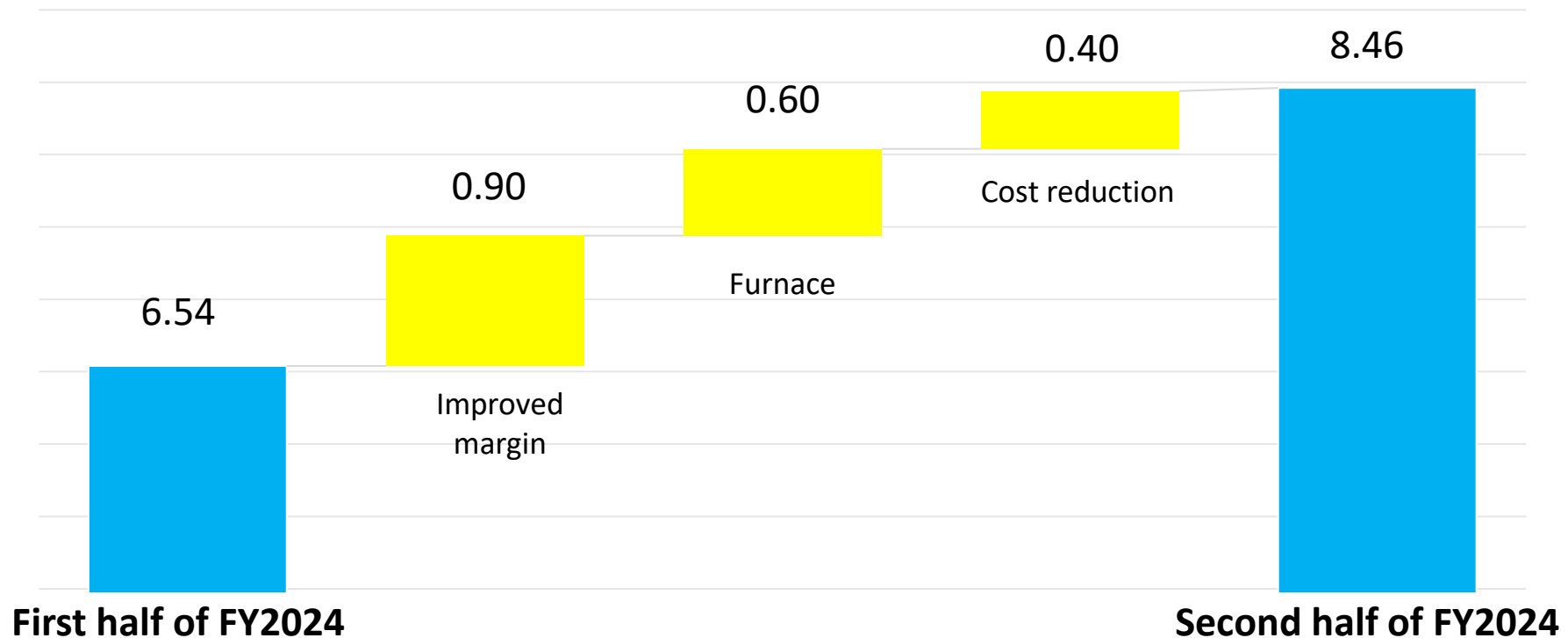
[First Half of FY2024 vs. Forecast for Second Half of FY2024] (Consolidated)



In the second half, an improvement in business results is expected due to the certainty of passing on the rise in costs, which were temporarily borne in the first half, to selling prices, the finalized orders received for large-scale construction projects in the Furnace Business, the expansion of global business mainly in India, and the further pursuit of self-help efforts.

(Billions of yen)

Profit increase of ¥1.92 billion



The Company, as a general rule, employs a consolidated dividend payout ratio of around 30%.

In FY2024, the Company plans to reward shareholders who have held the Company's shares in the long term by increasing dividends compared to the previous year.

	FY2022	FY2023	FY2024
Interim	27.5 yen	40 yen	45 yen
Year-end	45 yen	60 yen	60 yen (planned)
Total	72.5 yen	100 yen	105 yen (planned)

*The Company conducted a 4-for-1 stock split of its common shares as of April 1, 2024.

Dividends are calculated on the assumption that the stock split was conducted at the beginning of FY2022.

3. Progress on the 2025 Revised Management Plan

(1) Progress on the 2025 Revised Management Plan

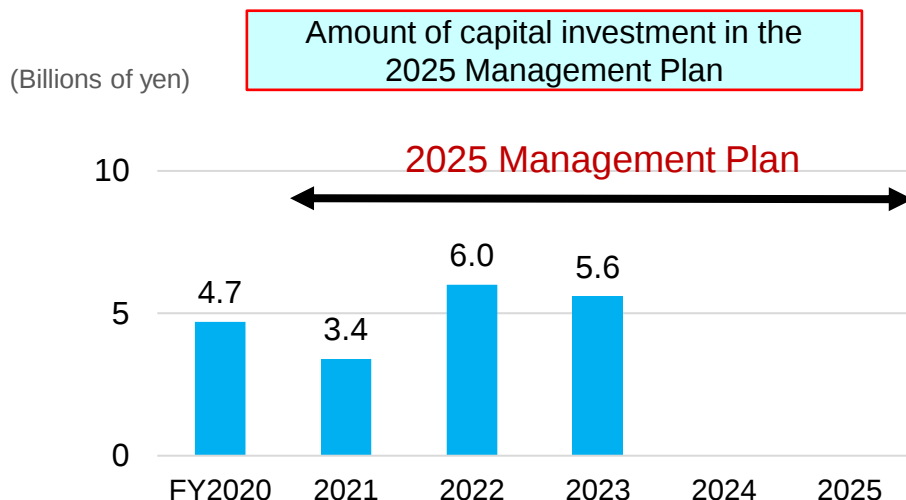
(Billions of yen)

	2025 Revised Management Plan	FY2021	FY2022	FY2023	FY2024 Forecast
Net sales	180.0	133.7	165.2	177.0	178.0
Ordinary profit	15.0	8.6	12.0	16.3	15.0
ROS	8.3%	6.5%	7.3%	9.3%	8.4%
ROIC	9.0% or higher	6.3%	8.5%	9.7%	—

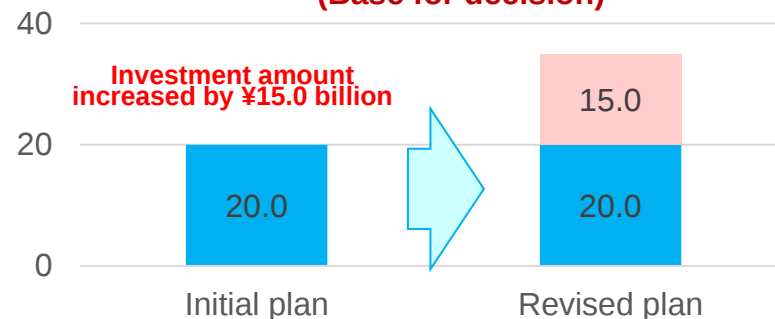
Ordinary profit for FY2024 is expected to achieve the ordinary profit target of the 2025 Revised Management Plan. Going forward we will aim for further increases in profits.

(1) Progress on the 2025 Revised Management Plan

Increase in the amount of capital investment and actively investing in growth fields



(Billions of yen) Amount of capital investment in the 2025 Management Plan
(Base for decision)



- The increased amount will be allocated to investment to enhance capabilities in growth fields and quality improvements in Japan and overseas.

Major capital investments in FY2021–FY2023

Japan

Investment in upgrading material handling for processing at the SN Plant



Investment in fully automating the packaging process at the Setouchi Plant



Replacement of equipment for the kneading and forming processes at the alumina plant



Overseas

TRLK AG Plant



Investment in expanding TRLK Dolomite Plant for calcination



WKM automated line



KAMR forming machine



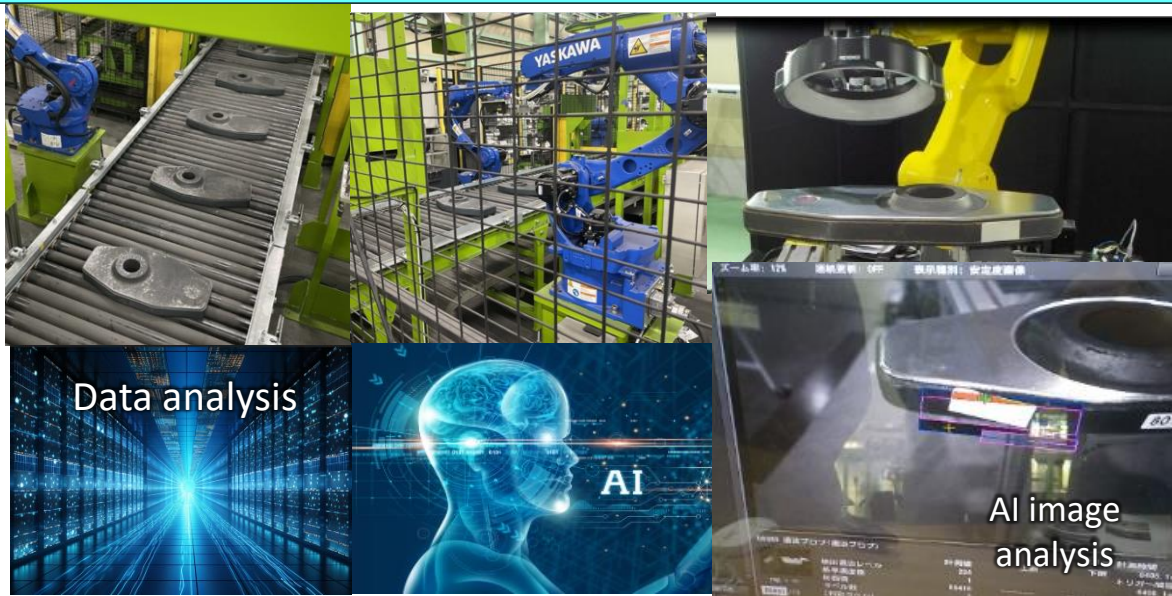
(1) Progress on the 2025 Revised Management Plan

Increase in capital investment amounts and proactive investments in growth areas

Renewal is ongoing to automate the plants utilizing digital technology

- Raising customer satisfaction by achieving high levels of quality control and assurance through automation and data management utilizing digital technology.
- Addressing the issue of labor shortages by implementing manpower-saving measures.
- Improving productivity by promoting automated transport lines.

Automation of SN plant finishing line



Automation of the transport line at Bizen Monolithic Plant



(2) Strengthen earning power and competitiveness in the Refractories Business

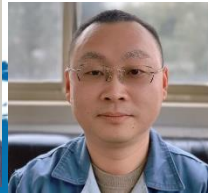
Group's global management framework and manufacturing and sales through local production for local consumption

Actively appointing local employees to top positions at the local subsidiaries

Appointing local managers to operate our local subsidiaries and develop manufacturing and sales activities focused on the local region

3 European bases

1 alliance partner



5 Chinese bases

Japan

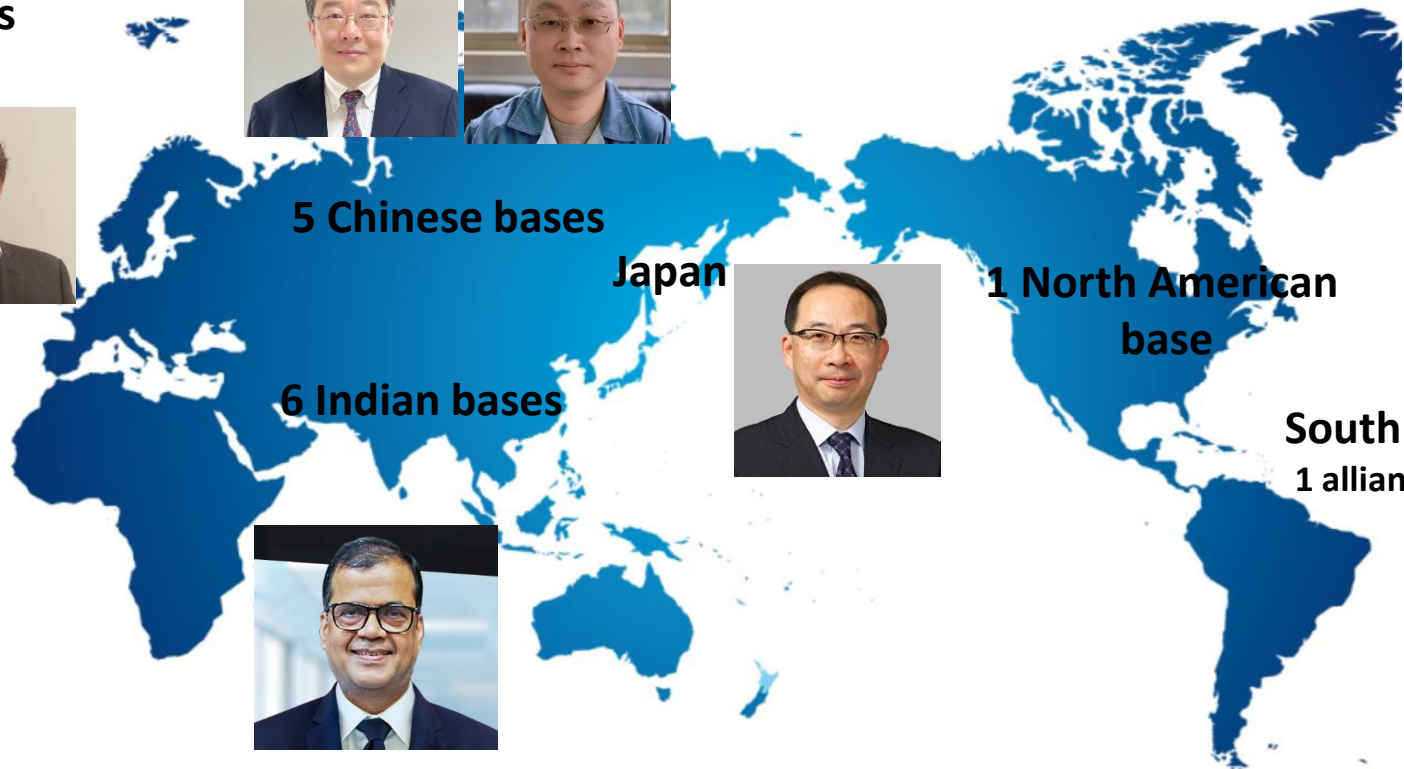


1 North American base

6 Indian bases



South America
1 alliance partner



(2) Strengthen earning power and competitiveness in the Refractories Business

Strengthen our R&D system on a global scale

Working in R&D that matches the regional characteristics at both the bases in Japan and India.

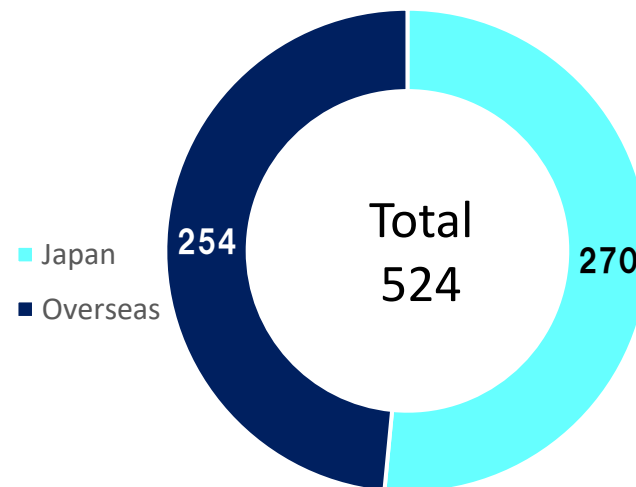
Also considering a framework for mutually sharing information by adding a base in Europe as the third.

Number of the Company's R&D staff
including technological services

524

Annual R&D expenses amount to

¥3.4 billion (1.9% of net sales)



(2) Strengthen earning power and competitiveness in the Refractories segment

Future growth potential of the Indian market

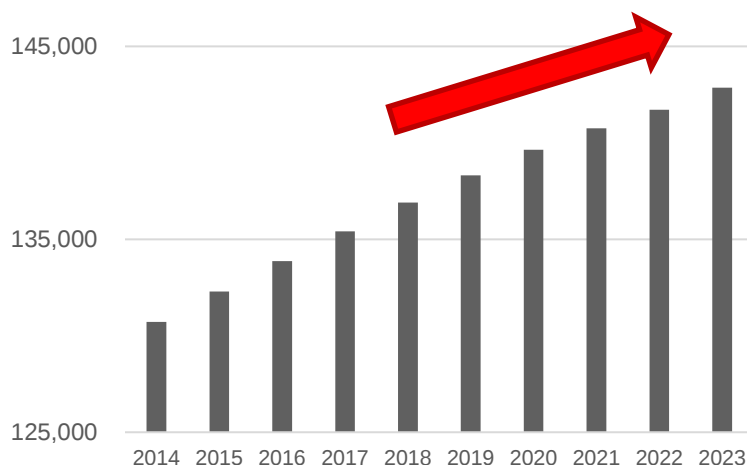
The Indian government is promoting various measures to **boost manufacturing and large-scale infrastructure development**, with the **Make in India** slogan for **expanding domestic production** and the **Self Reliant India** slogan for a **self-sufficient nation**.

Continued expansion of market size due to population growth

Population: 1,425,670,000
(world's largest)

India's total population growth

(Tens of thousands)



Global GDP ranking and economic growth rate (*)

Rank	Country	GDP (Billions of USD)	Economic growth (real GDP growth rate)	Annual iron consumption (Per head)
1st	America	29,167	2.8	Approx. 300kg
2nd	China	18,273	4.8	Approx. 650kg
3rd	Germany	4,710	0.0	Approx. 300kg
4th	Japan	4,070	0.3	Approx. 440kg
5th	India	3,889	7.0	Approx. 80kg

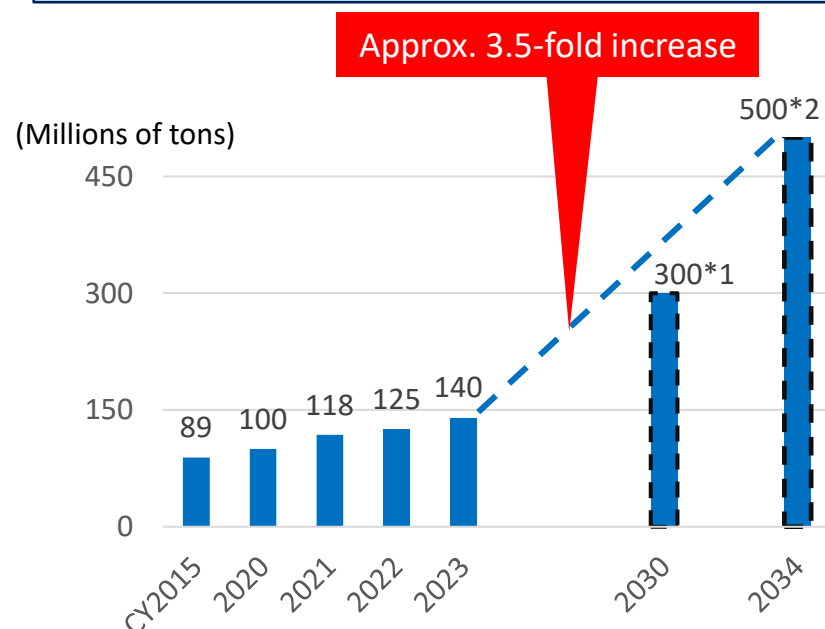
(*) The IMF's world country GDP ranking announced in 2024.

(2) Strengthen earning power and competitiveness in the Refractories Business

Enhance competitiveness in the expanding Indian market

- The Indian steel market is expected to expand steadily.
 - As the steel market expands, steelmakers are producing steel products that are higher in grade and wider in variety.
 - Refractories to be used will invariably increase quantity and advance in the level of technological requirements.
- ⇒ **Opportunities to benefit from our technologies will grow.**

Results and outlook of crude steel output in the Indian market



Major Indian steelmakers' production increase plans

TATA	JSW	AM/NS
19.60 million tons (2022 results)	20.40 million tons (2022 results)	6.60 million tons (2022 results)
25.00 million tons (2025 plan)	42.00 million tons (2027 plan)	15.00 million tons (2026 plan)
Approx. 1.3-fold increase	Approx. 2.0-fold increase	Approx. 2.2-fold increase
	50.00 million tons (2030 plan)	
	Approx. 2.5-fold increase	

*1: Crude steel output capacity for 2030 targeted by the Indian government.

*2: Crude steel output capacity for 2034 targeted by the Indian government.

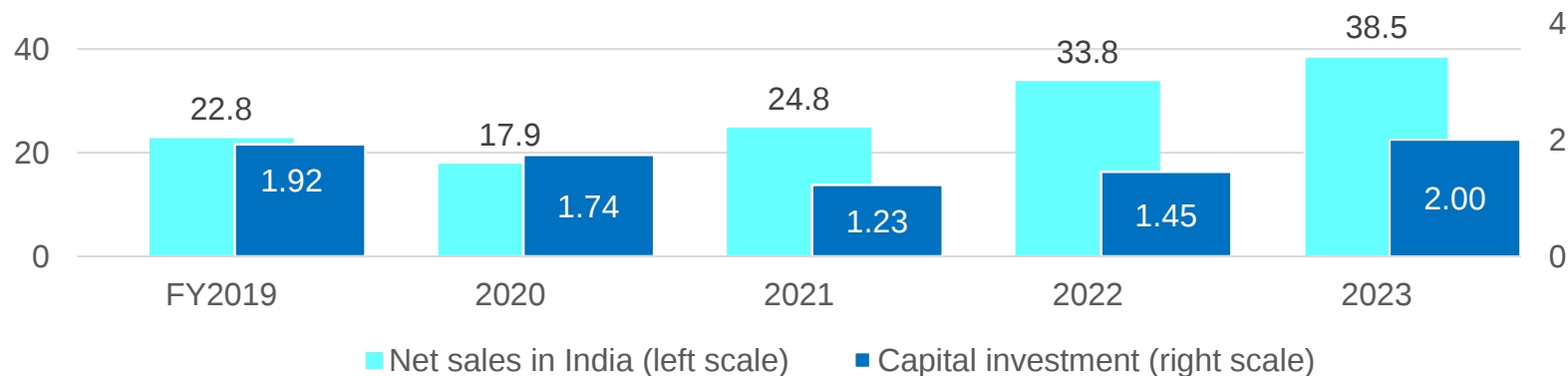
(2) Strengthen earning power and competitiveness in the Refractories segment

Achieve an increase in net sales by active investment in growth in India

- **TRLK**, a company in the Group, holds a **top-class share** of the Indian market, doing business with approximately 50 steelmakers covering the whole country, including TATA Steel, AM/NS India, and JSW.
- It is making the **utmost use of the full-range production/sales capabilities** for refractories for steel.

(Billions of yen)

Net sales and capital investment in India



New plants supporting the full range of production capabilities for TRLK



(2) Strengthen earning power and competitiveness in the Refractories segment

~Expanding capacity to capture growing demand in india~

First in India
refractory brick factory
for converters



RH SNORKEL
New plant
under construction



Taphole Clay
Line expansion (No. 4)



(2) Strengthen earning power and competitiveness in the Refractories Business

Construction of a plant in the state of Gujarat, India

Our 7th plant to be constructed in Western India (state of Gujarat)

Scheduled completion: July 2026

Details of the capital investment

Site area: 230,000m²

Investment amount: Approx. ¥2,400 million

Products: High alumina bricks and
monolithic refractories

Scheduled completion: July 2026

State of Gujarat

Population: over 60 million

Features:

The state boasts the largest industrial production output in India, and is a major demand area for refractories with a concentration of cement and steel companies.



(2) Strengthen earning power and competitiveness in the Refractories segment

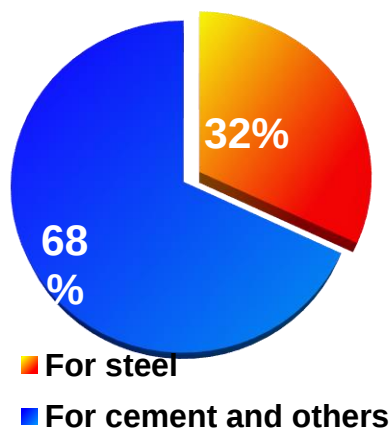
Leverage the effects of the business portfolio in the European market

Business portfolio in Europe

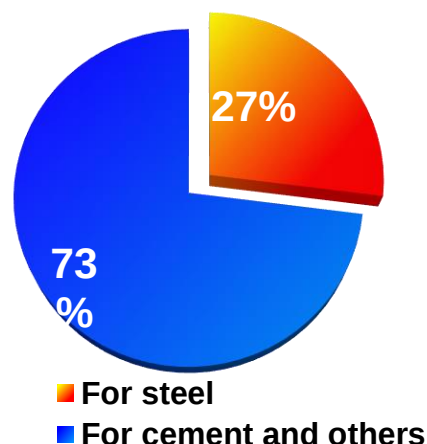
We have a business structure with strength in products for the non-ferrous materials (cement), in addition to those for the steel industry. Furthermore, there are synergistic effects from our system of providing integrated product supply and construction services, namely, to manufacture refractories and offer installation work as well.

Sales breakdowns for two European subsidiaries

<KAMR sales breakdown>



<REF sales breakdown>



REFT overview

Company name: Refractaria Technologies, SL
(SL means limited liability company.)

Location: Spain

Established: January 19, 2012 (*)

Business: Furnace construction

Employees: Approximately 30 temporary workers are hired as needed for each construction project.

Parent company: REF (Refractaria, S.A.)

(*) Resumed business as a furnace construction company on March 4, 2021.

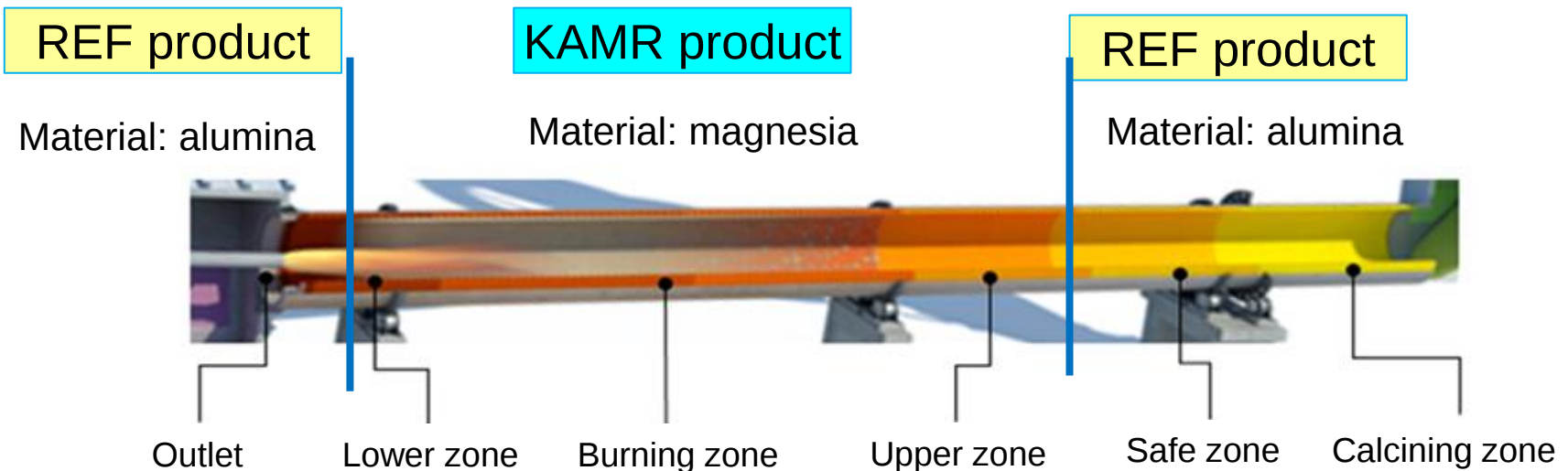
(2) Strengthen earning power and competitiveness in the Refractories segment

Capture demand for refractories for cement manufacturers that is growing on a global scale

Synergies between three European subsidiaries

There are two types of refractory materials used in rotary kilns for manufacturing cement. KAMR and REF manufacture different refractories. In combination with construction company REF-T, the synergy between the three subsidiaries has been evaluated positively by customers, contributing to expanding sales.

Sectional view of rotary kiln



(2) Strengthen earning power and competitiveness in the Refractories segment

Capture demand for refractories for cement manufacturers that is growing on a global scale

Actively sell refractories for cement manufacturers that are produced by two subsidiaries of the Company in Spain to countries outside of Europe

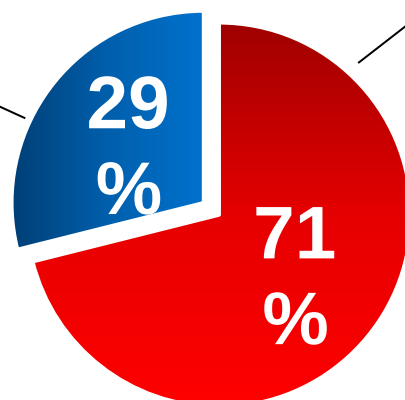
Due to the growth of the global population and rapid urbanization in developing countries, there is an increase in construction of housing and commercial facilities. With the increase in demand for construction, demand for cement is trending higher.

By market:
From Spain to the global market

Net sales in FY2023
KAMR + REF (€135 million)

Outside
Europe

North
America,
Central and
South
Americas,
Middle and
Near East,
Africa, etc.



Europe

As overseas cement manufacturers do not frequently repair rotary kilns, they tend to use highly durable refractory materials, utilizing the Group's technological capabilities.

(2) Strengthen earning power and competitiveness in the Refractories Business

Leverage the effects of partnerships in the South American markets

Concluded a sales agency agreement in May 2020 and a refractories license agreement in October 2021 with IBAR

Securing manufacturing and sales bases for our licensed products in Brazil **has enabled us to expand our sales in the South American market**. Our technological expertise has highly regarded by South American steel companies.

[IBAR]

- Location: Poá, Sao Paulo, Brazil
- Primary business: Manufacture and sale of refractories, production of raw materials for refractories (owning refractory materials mines)

In **October 2024**, we established a 50:50 **joint venture** with IBAR to locally manufacture and sell high-quality filling material for blast furnace tap holes, commonly known as taphole clay, and **started production in March 2026**.

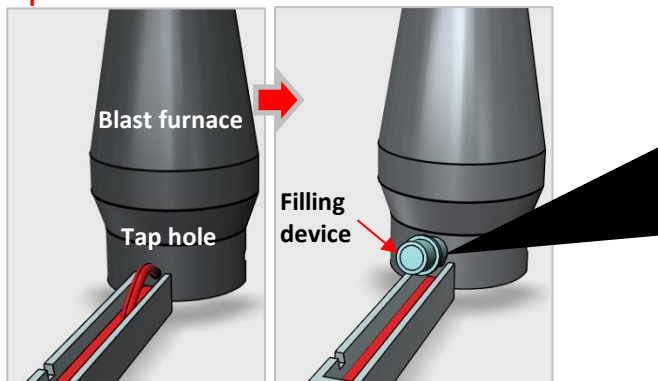
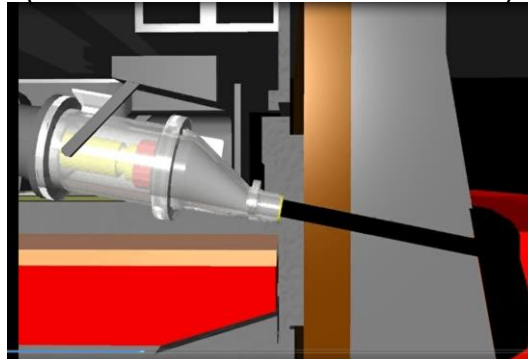


Illustration of a closed tap hole
(cross-section view of a blast furnace)



Major Brazilian steel manufacturers and IBAR



(2) Strengthen earning power and competitiveness in the Refractories segment

Exhibited at METEC, the world's leading international trade fair for metal manufacturing and metallurgical technology

Overview of METEC

- June 12–16, 2023, at Messe Duesseldorf, Germany (held once every four years)
- Visitors: Approx. 63,000 from 114 countries
(*Total number of visitors to four specialized trade fairs, including METEC, that were held concurrently.)

⇒ We showcased our state-of-the-art technologies and products, including display and demonstration of **REX-ROBO®**, a robot to auto-replace refractories, to highlight the technological expertise we possess.

Very well received by visitors from all over the world [Deliveries on a rise]

Received order for the first unit from a domestic electric furnace manufacturer
Received an offer overseas

The Group's exhibition booth



Exhibition of REX-ROBO®



(2) Strengthen earning power and competitiveness in the Refractories segment

Meet customers' needs with our engineering technologies

Robotic automation of slide gate plate changing
(REX-ROBO®)

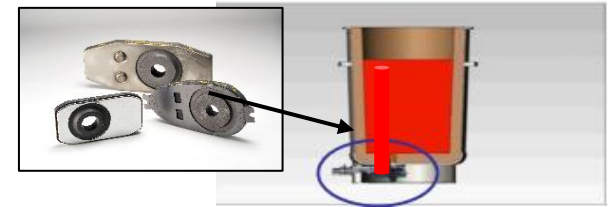
- Achieved the robotic automation of the operation to change refractories (slide gate plate*) placed on the bottom of the steel ladle
 - Traditionally, this was heavy duty operations performed by human workers in a hot environment. Our engineering technologies contributed to improving safety and labor saving in these operations at customers' sites.

*Slide gate plate

A plate used to regulate the flow of molten steel.

(Each plate weighs approx. 20 kg)

It is placed in the valve unit on the bottom of the steel ladle.



Changing operation
by a human worker



Changing operation by REX-ROBO®

(2) Strengthen earning power and competitiveness in the Refractories segment

Turn the structural change in the domestic steelmaking processes into a growth opportunity

Challenges for the steelmaking processes in Japan

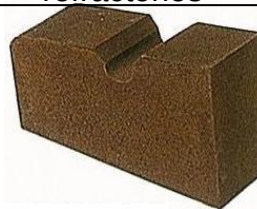
- Reducing CO₂ emissions in the blast furnace method is a challenge in the pursuit of carbon neutrality.
 - To tackle this, blast furnace manufacturers are driving structural reforms in the steelmaking processes, such as expanding the use of the electric arc furnace method and hydrogen reduction.
 - Using electric arc furnace method to achieve 24-hour continuous operation (vs. traditional non-continuous operation)
 - Using electric arc furnace method to manufacture high-grade steel (vs. traditional general-purpose steel)
- ↓
- Demand will grow for highly durable refractories (**that can withstand higher temperatures and have a longer service life**) for high-grade steel manufacturing.
 - These refractories are within the area where the Group has an edge with its advanced technologies.

Examples of our highly durable refractory products

Porous plugs



Magnesia-chrome refractories



Magnesia-carbon refractories



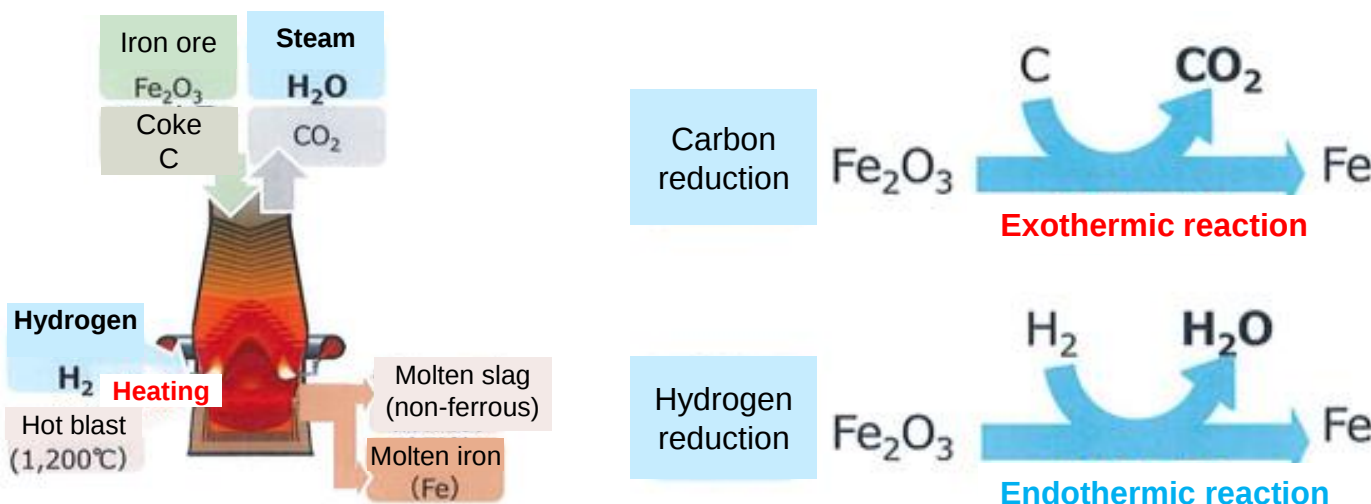
(2) Strengthen earning power and competitiveness in the Refractories segment

Turn the structural change in the domestic steelmaking processes into a growth opportunity

Manufacture of refractories that contribute to changes in iron reduction methods (methods for removing oxygen content from iron ore) used by steel manufacturers

In NEDO(*)'s project for Hydrogen Utilization in Iron and Steelmaking Processes, **our refractories were requisitioned for use** in NIPPON STEEL CORPORATION's test hydrogen reduction furnaces

Illustration from NIPPON STEEL CORPORATION's publicly available "Nippon Steel Carbon Neutral Vision 2050"



As a higher temperature is required to induce an endothermic reaction, there is a need for refractory materials that can withstand the heat.

(2) Strengthen earning power and competitiveness in the Refractories segment

Development of new materials contributing to carbon neutrality

Development of a no-need-to-dry (Dry-Free®) gunning material

Feature: No drying needed after construction due to quick-drying properties

Before

Drying needed before use

⇒ CO₂ emissions

Patented

After development

No drying needed before use

⇒ Zero CO₂ emissions

[Technological requirements]

We used to produce gunning materials by mixing unshaped refractories with cement and water, which required drying after construction. To reduce CO₂ emissions, we needed to develop alternative materials for cement and water.

→ Developed a solution binder with excellent quick-drying properties



Our Dry-Free® Series of products was awarded the highest rating by the City of Kitakyushu in its initiative for selecting products that contribute to the reduction of environmental impact.



Mr. Katayama, Deputy Mayor of the City of Kitakyushu (left) and Mr. Nishi, Executive Counsellor of the Company (right)

Dry-Free® new customer delivery results

Dry-Free® gunning materials: 36 customers

Dry-Free® castable: 25 customers

Orders have rapidly increased since launch in 2020. Received orders for overseas projects as well.

(2) Strengthen earning power and competitiveness in the Refractories segment

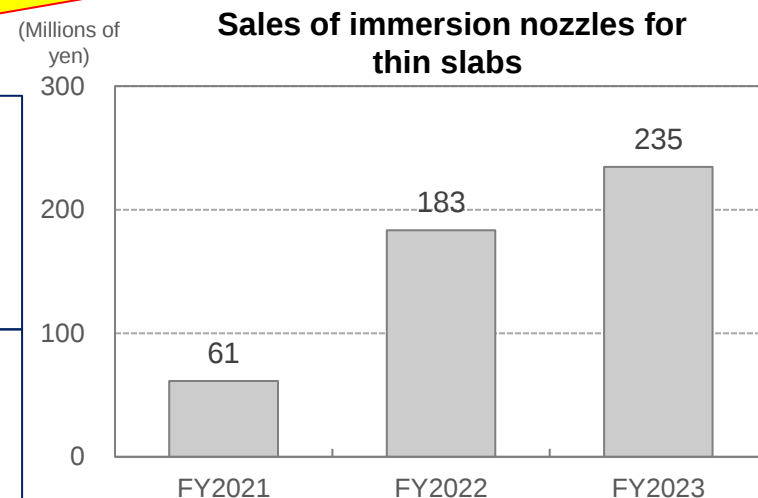
Our refractory technologies essential for high-grade steel manufacturing

For manufacturing hybrid and electric vehicles, lightweight, durable, and workable sheet steel (= high-grade steel) is essential.

- High-grade steel manufacturing requires technologies to regulate the flow of molten steel and control inclusions during continuous casting.
- Refractories play a critical role in realizing the above technologies.

Our technology solutions

Our patents	Developed a uniquely shaped immersion nozzle for steel sheets (thin slabs) that enables a substantial reduction in drift
	Developed nozzle material for continuous casting that prevents the accumulation of impurities



(3) Strengthen earning power in the Furnace Business

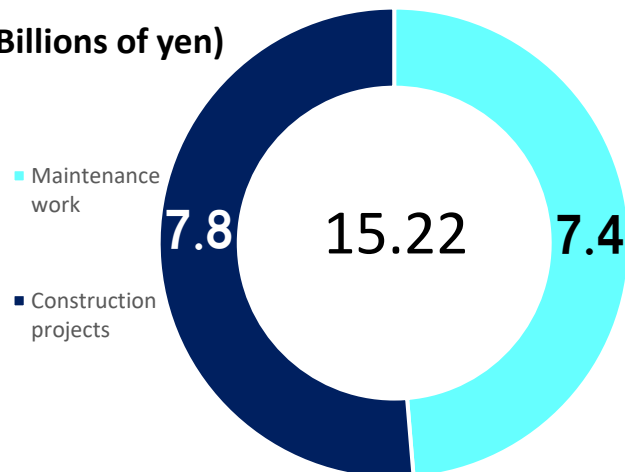
Continue to receive large project orders by leveraging integrated product and construction services and our technological superiority

Received orders for large-scale industrial furnace projects

- There has been a rise in maintenance projects for large-scale industrial furnaces.
Heading into the busy season.
- Unlike the numerous other vendors who only contract construction, our strengths lie in our construction services as a comprehensive refractories manufacturer as well as our ability to contract integrated services from the design of the interior to the supply of refractories (integrated product and construction solutions).
- We have a strong and varied track record in large-scale industrial furnace projects that require a high level of technology.

FY2023 Furnace Business sales breakdown

(Billions of yen)



Large-scale construction projects are in progress from the later first half of FY2024

Illustrations of large-scale industrial furnaces

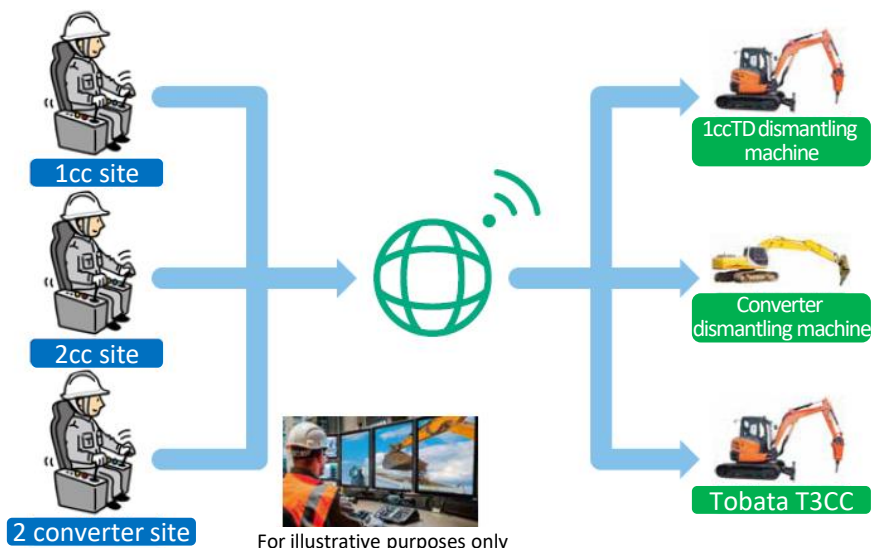


(3) Strengthen earning power in the Furnace Business

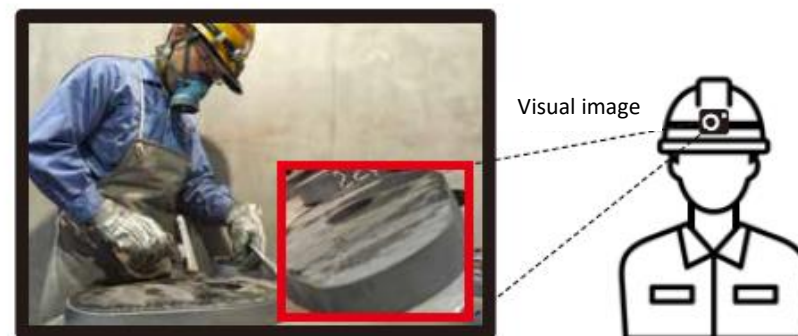
Solving problems by proactively leveraging digital technology

Improve productivity and hand down skills by leveraging digital technology

Manpower-saving concept through remote operations of heavy machinery



Handing down skills by using “GoPro,” small video cameras



Utilized in education

At the regular workshops, opinions are exchanged on the differences in work processes with skilled workers.

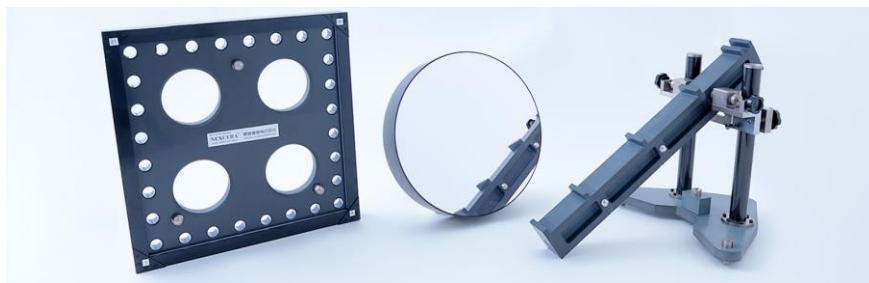
(4) Strengthen earning power in the Ceramics Business

Expand fine ceramics sales in line with the growing semiconductor market

Our ceramic products are valued highly by manufacturers of semiconductor manufacturing equipment in Japan and overseas.

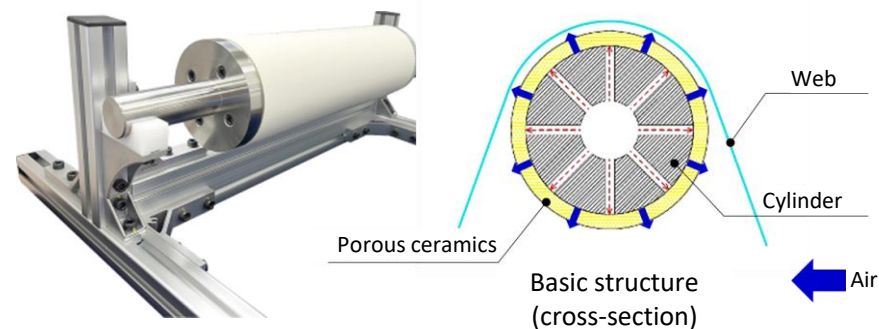
In the market for semiconductor lithography equipment, which provides core technologies in semiconductor manufacturing, there is an accelerating trend toward greater resolution, which has increased demand for NEXCERA®, our zero-expansion products. **Additionally, we are expanding sales activities in new areas (ceramics for floating transporters).**

NEXCERA®, ultra-low thermal expansion ceramics



Our advanced technology has been recognized, and NEXCERA® is supplied to major global semiconductor lithography equipment manufacturers.

Ceramics rollers for floating transporters



The floatation of web materials such as film through a uniform and stable supply of air from porous ceramics prevents the formation of creases.

(4) Strengthen earning power in the Ceramics Business

Manufacture and expand sales of high-performance insulation material that contributes to the achievement of carbon neutrality

Developed a nano-porous insulation material (*) KROTECT®

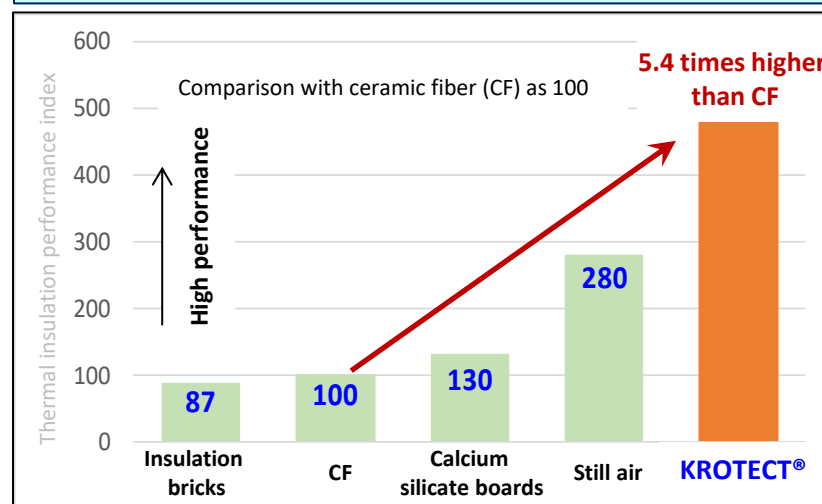
Made low thermal conductivity (high thermal insulation) and high-strength products possible by incorporating our material technology and manufacturing know-how.

Low thermal conductivity is becoming increasingly important in achieving a decarbonized society, and by supplying our low thermal conductivity, high-strength, nano-porous insulation materials, we will contribute to saving energy and reducing CO² emissions in fuel cells for household use, steel, and industrial furnaces.

Nano-porous insulation material



Comparison of insulation performance with various heat-resistance insulation materials



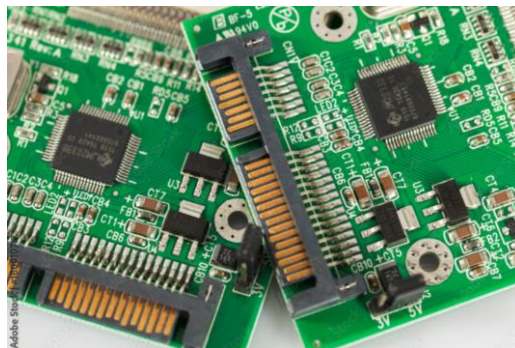
*: Heat insulation material using fumed silica (silicon dioxide fine particles) as its main raw material to form numerous nano-sized pores to suppress heat transfer. Its thermal conductivity is lower than that of still air and remains low even in a high temperature range.

(4) Strengthen earning power in the Ceramics Business

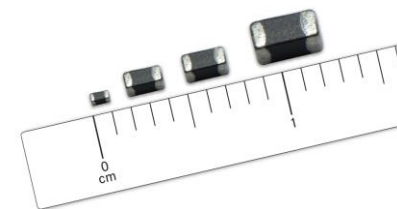
Expand sales of PLATECT® (ceramics materials for electronic components)
in line with the growth of the MLCC market

Manufacturers of multi-layer ceramic capacitors (MLCC) mounted in smartphones and automobile electronic components are making capital investments to upgrade their production capacity. **The MLCC market is expected to grow by approximately 9% annually from 2023 to 2030. (*Our estimated global market share: 40%)**

Due to the spread of xEV and ADAS (advanced driver assistance systems), the widespread and practical use of 5G and 6G communications, and the development of AI and IoT, the MLCC market is expected to grow along with the growing demand for our strategic product, PLATECT®.



Ceramic capacitor



(5) Reinforce the business foundations on a company-wide basis and promote contributions to the realization of a sustainable society

Promote DX to increase productivity

Intensifying our KROSAKIHARIMA Monozukuri System (KMS) activities



Site inspection by top management

- We pursue safety, quality, and efficiency at sites by implementing small-group *kaizen* (improvement) activities (= KMS activities).
- Top-down and bottom-up direct sharing is achieved through periodic inspection by managers.
- We raise individuals' levels of common sense by actively holding training and inter-plant exchange sessions.

We presented Kyushu the case studies at the 65th Annual National Tournament

- Our small group presented an activity case study at the 45th Annual Kyushu IE^(*) Tournament and was **selected as Kyushu representative**.
- We presented the case study at the 65th Annual National IE Tournament (July).



Presenting at the Annual Kyushu IE Tournament

Case study

How we created an in-house logistics management system for the manufacturing process leveraging DX, achieving a smart, low-waste process management system by combining the *kaizen* activities of each process.

(5) Reinforce the business foundations on a company-wide basis and promote contributions to the realization of a sustainable society

Initiatives to promote sustainability

◆ CO₂ reductions achieved to date

CO₂ emissions for FY2023 were reduced by 0.1% compared to FY2013.

Across the Company's core Refractories, Furnace, and Ceramics segments, total CO₂ emissions decreased by 15.5% against a total decrease in production volume of 10.8%, giving a 6.5% decrease in CO₂ emissions per unit of production.

◆ Future CO₂ reduction targets

By FY2030: **50% reduction** compared to FY2013

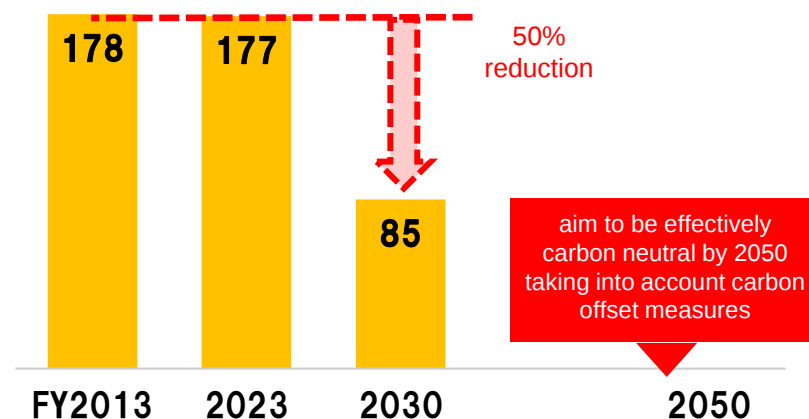
By FY2050: aim to be effectively carbon neutral by 2050 taking into account carbon offset measures

<Policies for achieving reduction targets>

- (1) **Improve productivity** in the manufacturing process and reduce CO₂ emissions through **energy saving, model conversion**, etc.
- (2) Provide products and solutions that contribute to **reducing society's overall CO₂ emissions**.

<The Company's CO₂ emissions>

(Thousands of tons)



* Scope

Krosaki Harima Corporation only

- SCOPE 1: The company's direct CO₂ emissions from fuel consumption and the production process
- SCOPE 2: The company's indirect CO₂ emissions from usage of power and heat procured from other sources

The Company achieved a B score in the third-party climate change assessment administered by CDP.

(5) Reinforce the business foundations on a company-wide basis and promote contributions to the realization of a sustainable society

Initiatives to promote sustainability

November 2021: Implementation of basic policy on D&I and setting of management targets

Priority initiatives

A: Empowering women: Take advantage of employee diversity (related to diversity)

B: Working styles, resting styles, and health promotion: Work to increase employee productivity (related to work style reforms)

C: Creating employee-friendly workplaces and management systems (Prevent harassment and improve work morals)

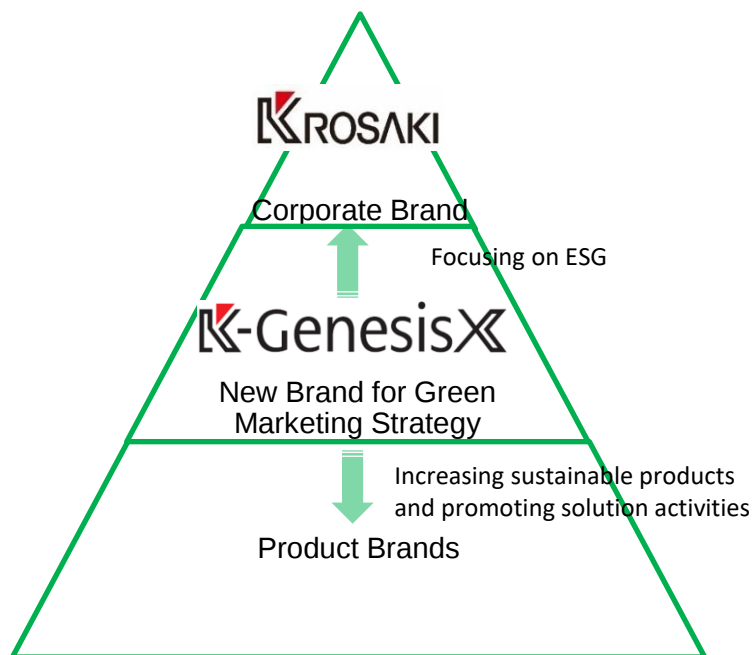
	Targets					
	Ratio of women in new graduates hired (%)	Ratio of women in managerial positions (%)	Total actual working hours annually (hrs)	Annual leave taken (days)	Childcare leave taken by male workers (%)	Implementation rate of specific health guidance (%)
FY2030 target	30 or more	4.35	Below 2,000			
FY2025 target	20 or more			15	Taken by all male workers	2x or more than current rate (17.4)
FY2022 results	7.69	3.23	2,076	13.3	22	69.4
FY2023 results	29.41	3.25	2,067	15.4	34.7	80
Trend	○	○	○	○	○	○

(5) Reinforce the business foundations on a company-wide basis and promote contributions to the realization of a sustainable society

Launch of our sustainability brand

The Group has launched **K-GenesisX** with the objective of delivering forward-looking solutions to customers by integrating state-of-the-art technology and a strong commitment to realizing a sustainable society. Under this brand, we are developing a variety of sustainable products aimed at achieving carbon neutrality.

[Brand Positioning]



[Brand Concept]

Krosaki

Kurosaki Harima Group's

Green

sustainable products and technologies,

Evolution

along with continuous evolution and innovation

Nature

harmonized with nature to preserve for the future

Sustainable

to realize a sustainable society

Intelligent Solution

through efficient solutions

X

serving as a symbol of futurism

- ## Initiatives to promote sustainability



Integrated report URL

SDGs HP URL

<https://www.krosaki.co.jp/sdgs-en>

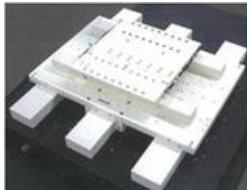
[Reference] Overview of the Company

Company name:	KROSAKI HARIMA CORPORATION
Share capital	5,537 million yen
Founding	October 14, 1918
Establishment	June 1, 1919
Main business	Manufacture and sale of refractories
Number of employees	Consolidated, 4,904; non-consolidated, 2,468
Number of consolidated subsidiaries ^{*1}	13 (3 in Japan, 10 overseas)

^{*1} Including companies accounted for by the equity method.

1919	Established as KUROSAKI REFRACTORIES CO., LTD. (in what is now Yahatanishi-ku, Kitakyushu City, Fukuoka)
1949	Listed on the Tokyo Stock Exchange
1956	Capital participation from Yawata Iron & Steel Co., Ltd (presently NIPPON STEEL CORPORATION)
1989	Acquired shares from the Spanish corporation ARISTEGUI MATERIAL REFRACTARIO, S. A., and made it the Company's subsidiary. Said subsidiary changed its name into AMR Refractarios, S. A. (presently Krosaki Amr Refractarios, S. A., a consolidated subsidiary)
2000	Merged with Harima Ceramic Co., Ltd. and changed the name to KROSAKI HARIMA CORPORATION
2002	Made Kyushu Refractories Co., Ltd. a subsidiary (merged in 2012)
2011	Made TATA REFRACTORIES LIMITED (presently TRL KROSAKI REFRACTORIES LIMITED) in India a subsidiary
2019	Became a consolidated subsidiary of NIPPON STEEL CORPORATION (April) 100th anniversary of establishment (June 1)

Refractories-related businesses (refractories + furnaces) account for at least 90%



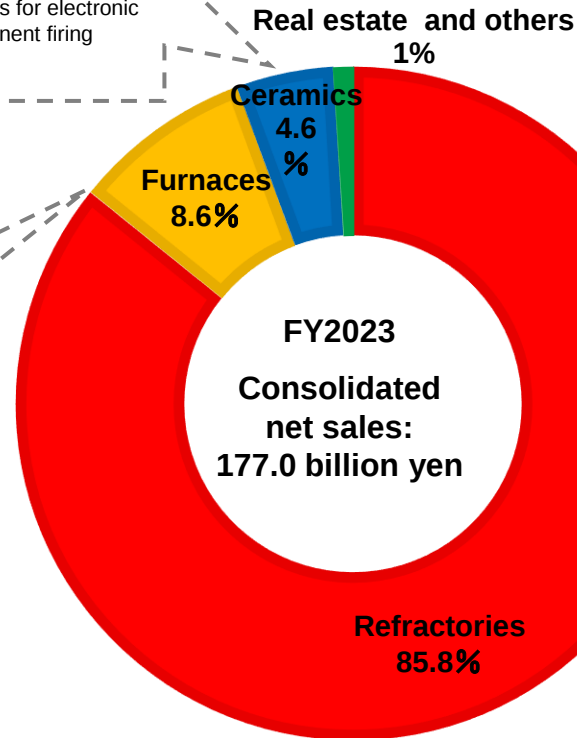
Fine ceramics for semiconductor manufacturing equipment



High-performance insulation materials



Components for electronic component firing



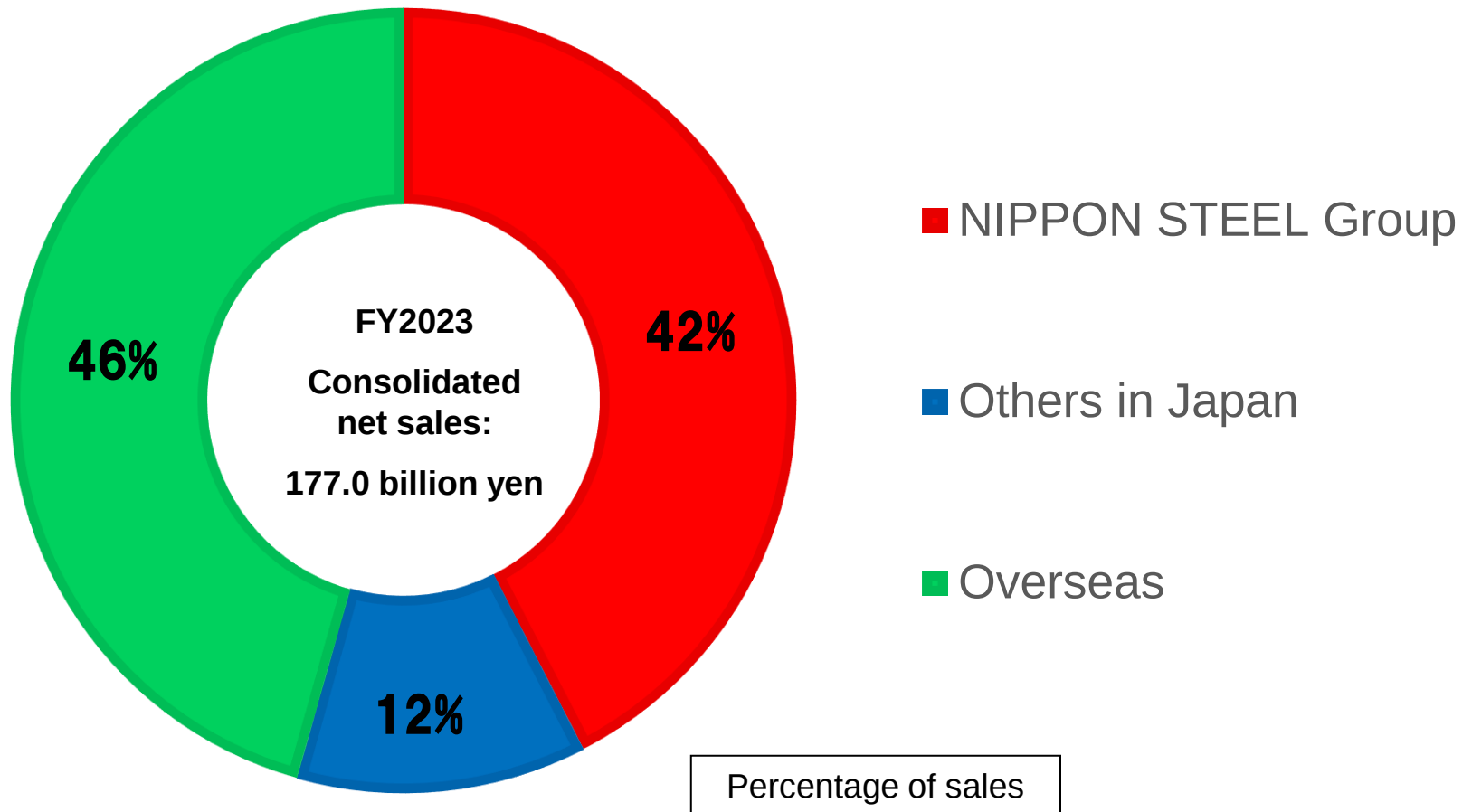
Percentage of sales



Example of construction work: pusher type billet continuous hot rolling heating furnace

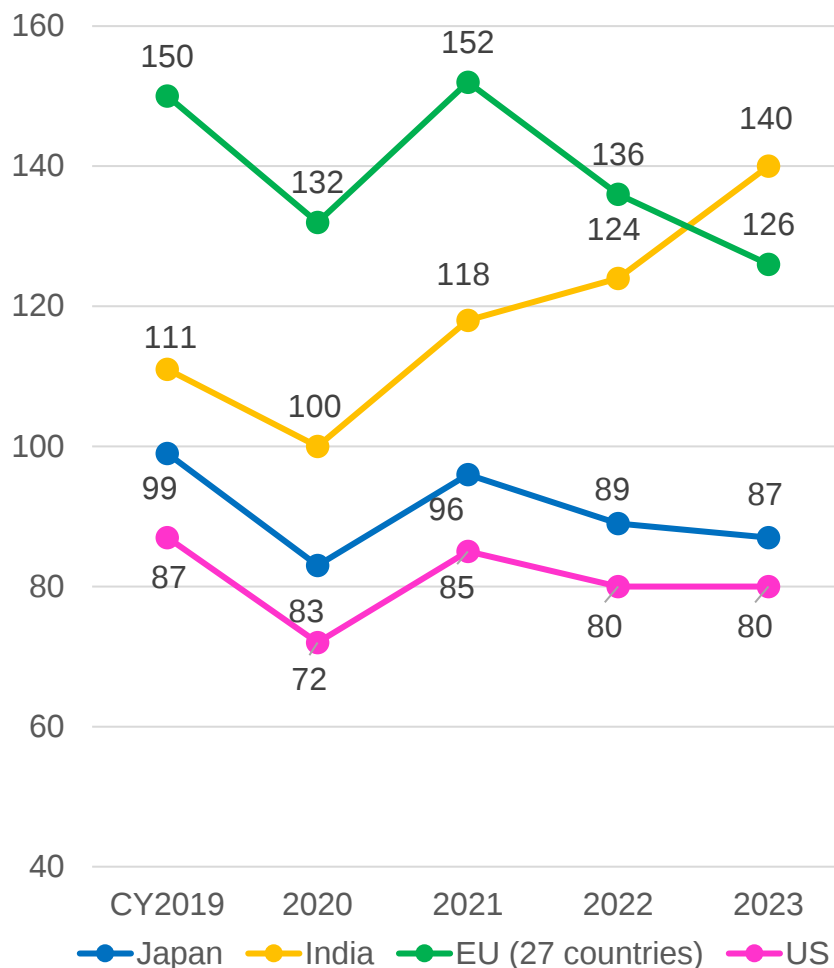


Refractories



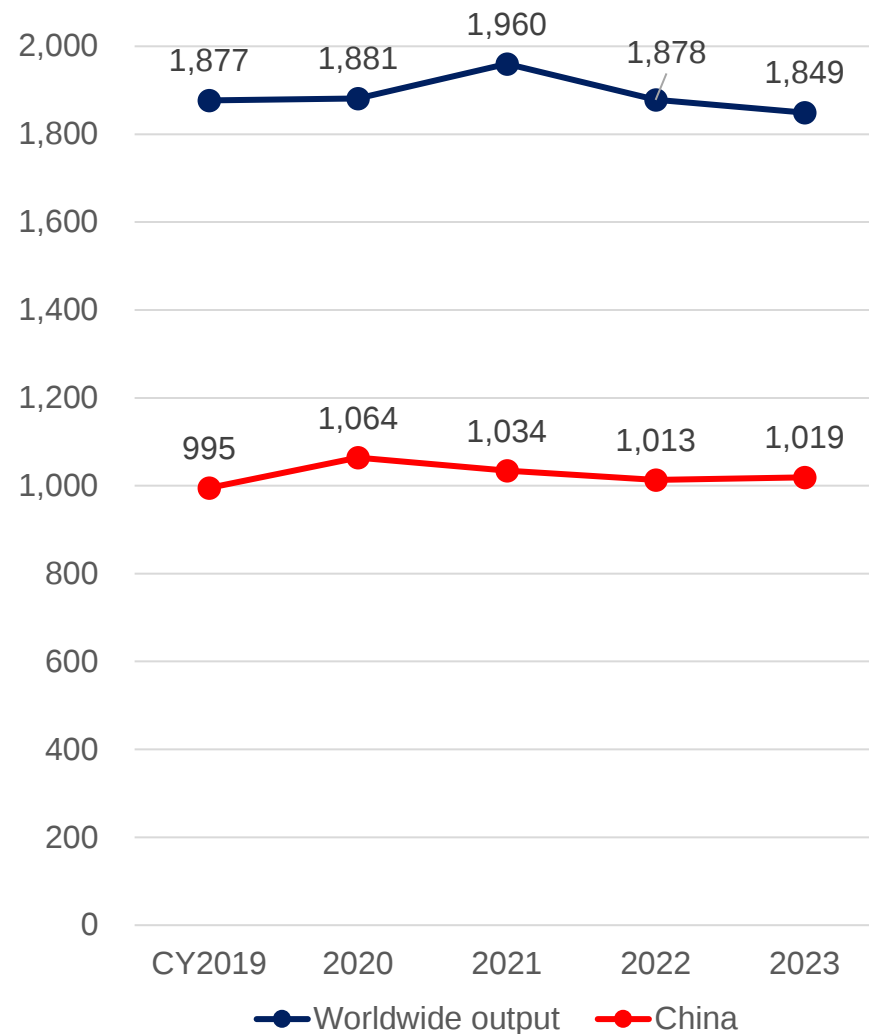
Crude steel output in Japan, India, the EU and the US

(Millions of tons)

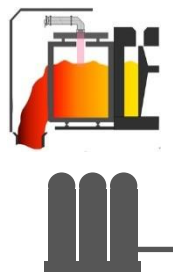


Crude steel output worldwide and in China

(Millions of tons)



<Steelmaking process>



Coke ovens /
hot-blast
stoves

Life of refractories
Approx. 40 to 50 years



Coke oven refractories



Blast
furnaces

Life of refractories
Approx. 20 years



High alumina
refractories for
blast furnaces



Torpedo
ladles

Life of refractories
Approx. 3 to 4 months



Al₂O₃-SiC-C refractories for torpedo
ladles



Magnesia-carbon
refractories for oxygen
converters



Converters

Life of refractories
Approx. 3 to 4 months



Unshaped refractories for converter blowing
(The blowing is shown in the photograph above)

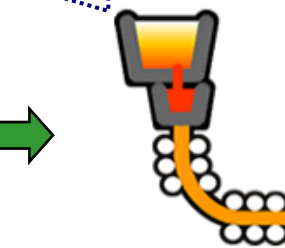


Direct-bonding
magnesia-chrome
refractories for degassing furnaces



Secondary
refining
furnaces

Life of refractories
<Upper part> Approx. 1 year
<Lower part> Approx. 1 month



Steel ladles / continuous
casting equipment

Life of refractories
Replaced every day or
every few days



Gas bubbling
plugs



AG tubes for
continuous
casting

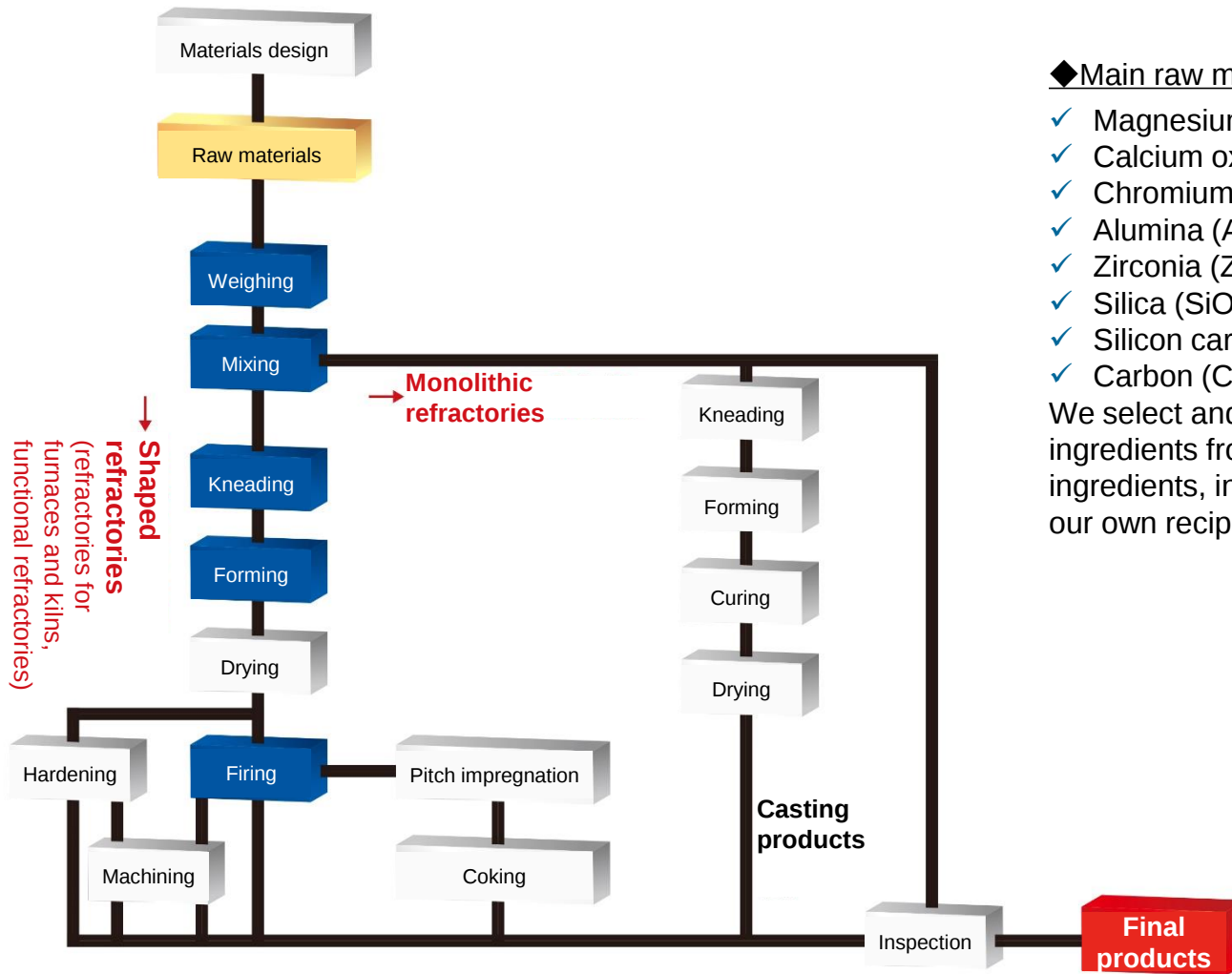


Slide gate plate operating
device



Slide gate plates
for continuous
casting

Type of refractory	Refractories for furnaces and kilns 	Functional refractories			monolithic refractories	
		AG nozzles 	SN nozzles and plates for continuous casting 	Gas babbling plugs 	Repair materials / casting materials 	Mud materials 
Main steelmaking equipment and facilities	Blast furnaces, hot-blast stoves, coke ovens, torpedo ladles, converters, secondary refining furnaces	Continuous casting equipment	Continuous casting equipment	Steel ladles	Blast furnaces, converters, steel ladles	Blast furnaces
Applications (functions)	Inner lining of equipment	Regulating the flow of molten steel	Controlling the flow of molten steel	Agitating the molten steel	Repairs and inner lining of equipment	Blocking blast furnace tap holes
The KROSAKI HARIMA Group's main production bases	•Japan •China •Spain •India	•Japan •China •India	•Japan •Spain •India •China	•Japan •India •China	•Japan •China •India •Spain	•Japan •India
The KROSAKI HARIMA Group's main markets	•Japan •Asia •Europe •North America •India •South America •China	•Japan •Asia •Europe •North America •Australia •China •India	•Japan •Asia •Europe •North America •Australia •China •India	•Japan •Europe •North America •Asia	•Japan •India •Asia •Australia •North America •Europe	•Japan •Asia •North America •Australia •India



◆ Main raw materials used in refractories ◆

- ✓ Magnesium oxide (MgO)
- ✓ Calcium oxide (CaO)
- ✓ Chromium oxide (Cr₂O₃)
- ✓ Alumina (Al₂O₃)
- ✓ Zirconia (ZrO₂)
- ✓ Silica (SiO₂)
- ✓ Silicon carbide (SiC)
- ✓ Carbon (C), etc.

We select and combine the optimal ingredients from over 1,000 types of ingredients, including particle size, to create our own recipes.

Upkeep and maintenance

We undertake the construction, repair and maintenance of refractories in equipment at steel mills, cement plants, and other facilities.



Refractories work in a coke oven



Refractories work inside a rotary cement kiln

Design and construction of industrial furnaces (heating furnaces, environmental industry furnaces, etc.)

We mainly engage in the design and construction of industrial furnaces (heating furnaces, incinerators, power generation boilers, etc.). We also design and construct only the locations where refractories are used, and provide engineering for ancillary machinery and equipment.

We also contribute to addressing energy and environmental problems by achieving energy savings.



Exterior of a walking beam furnace (heating furnace)



Refractories work inside a heating furnace

■ Locations where refractories are used

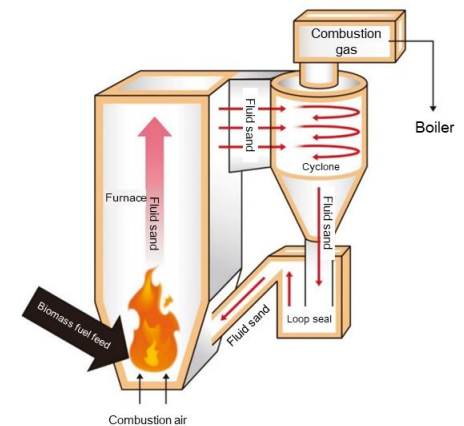
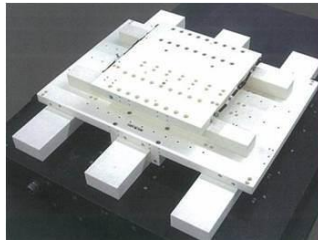


Illustration of a biomass power generation boiler

Contributing to constant performance enhancement for our customers

● Ceramics for precision components

- Semiconductor manufacturing equipment, measurement devices, and optical devices



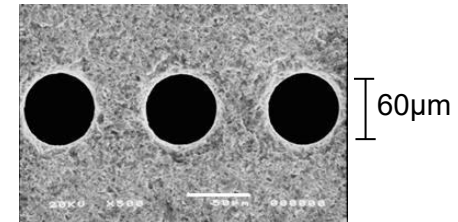
Fine ceramics for applications such as precision machinery and semiconductor manufacturing equipment, utilizing our strengths in large-sized and precision processing, as well as assembly techniques.



We have begun to utilize the outstanding dimensional stability and environmental robustness of NEXCERA™ zero-expansion ceramics in applications such as standards and corrections for precision measuring devices.

● Machinable ceramics

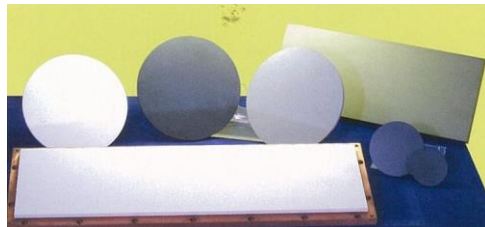
- Electronic component manufacturing, industrial machinery, and semiconductor manufacturing



Our machinable ceramics can be processed in the same way as metals, achieving precision processing on the scale of microns. The photograph shows a Macerite HSP probe card (an IC chip inspection jig formed on a silicon wafer) drilled with tiny holes (60μm in diameter).

● Sputtering target materials

- Electronic components and semiconductor devices



High-purity ceramic sputtering target materials that form a film to protect electronic components and semiconductor devices from heat and abrasion. Used in applications such as thermal printer heads.

● Components for electronic component firing

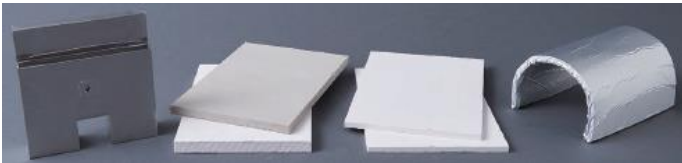
- Electronic component manufacturing



Indispensable components, mainly for ceramic electronic component firing. We boast the No. 1 market share globally in the ceramic capacitor field.

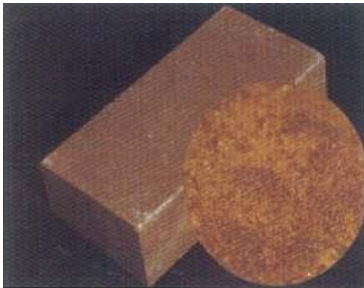
Contributing to society in the fields of energy saving and environment

- High-performance thermal insulation materials
 - Steel and non-ferrous metals manufacturing, various industrial furnaces, aircrafts, automobiles



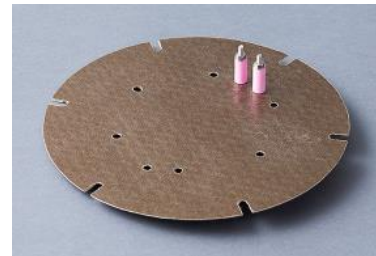
We utilize the thermal insulation characteristics of these products, which provide better thermal insulation than still air and are markedly superior to existing insulation materials, to contribute to saving energy and improving productivity through thinner, smaller, and lighter components.

- High-performance thermal storage materials
 - Regenerative heaters



Our ceramic materials with outstanding thermal storage features are used for applications such as regenerative heaters and underfloor heaters. They contribute to the effective use of electrical energy through nighttime power usage.

- Heaters
 - Liquid crystal manufacturing, semiconductor manufacturing, high-performance heater units



Our slim, flat heaters are notable for their excellent heat uniformity and heat responsiveness. They contribute to enhancing productivity in a wide range of industrial fields. We can respond to customer needs from design onward and provide heaters of various sizes.

- Eco-construction materials
 - Construction materials such as bricks for paving and external walls



Our construction materials serve environmental functions such as permeability and water retention, and feature both texture and design. They contribute to creating recycling cities through technologies using raw materials recycled from urban construction materials.



<https://www.krosaki.co.jp/en>

These materials are not disclosure materials designated under the Financial Instruments and Exchange Act, and we do not guarantee the accuracy or completeness of the information presented herein.

Moreover, the forward-looking statements presented in these materials represent the views of the Company based on the information available at the time when the materials were prepared, and involve uncertainties.

Therefore, we request that users refrain from depending solely on these materials when making investment decisions. The Company shall take no responsibility for any losses that may occur as a result of using these materials.