

Integrated Report 2023



Company Philosophy

Leverage the power of people to deliver the earth's resources in more useful forms and contribute to the happiness of humankind

Company Policy

- 1 Integrate the management strategies of the entire Group to maximize the synergy effects of each Group company.
- 2 Focus on the development and quality improvement of world-class smelting technology, and establish the world-leading platform for management efficiency and competitiveness.
- 3 Promote compliance.
- 4 Secure appropriate profits through fair, transparent and free competition.
- 5 Actively tackle all environmental problems to protect the irreplaceable earth.
- 6 To develop the individuality of employees and fully demonstrate their creativity, pursue a sense of comfort and affluence both physically and mentally, and realize a rewarding workplace.
- 7 Promote wide-ranging exchanges with society and actively disclose fair corporate information.

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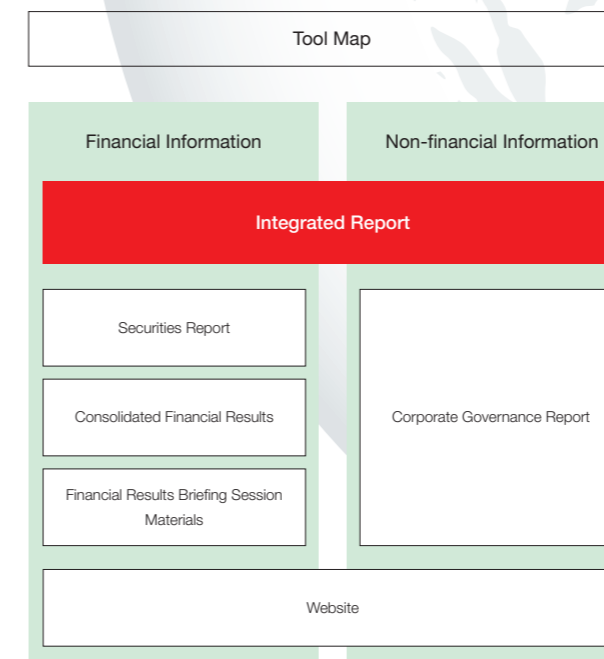
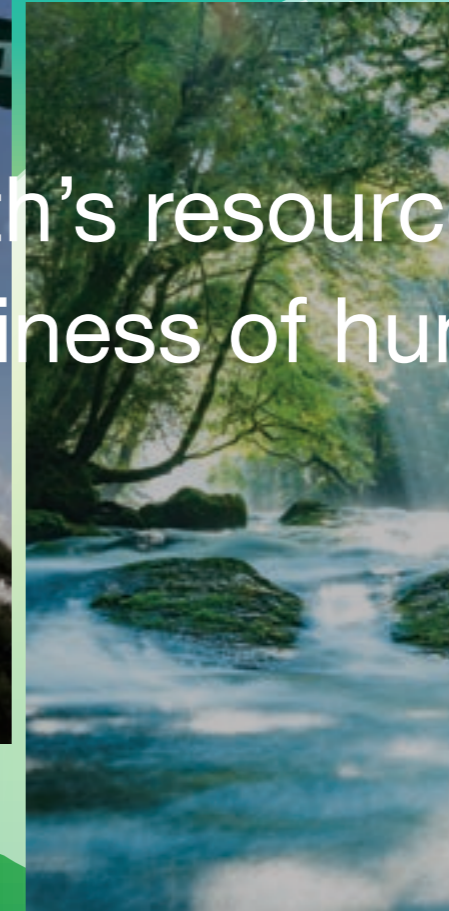
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**Editing policy**

This report covers our performance during the target period and our initiatives for the medium-term business plan, and explains our approach to sustainability linking financial and nonfinancial information. By doing so, we aim to make this report a tool for our shareholders, investors, and all other stakeholders to better understand the Company and deepen dialogue with us.

Scope of report

PACIFIC METALS CO., LTD. (Domestic Offices)
*The activities of some affiliate companies are included.

Reporting period

FY2022 (April 1, 2022 to March 31, 2023)
*Some activities outside the reporting period included.

Month of issue

November 2023

Reference guidelines

"Guidance for Collaborative Value Creation" by Ministry of Economy, Trade and Industry
"Environmental Reporting Guidelines (Fiscal Year 2018 Version)" by Ministry of the Environment
"Sustainability Reporting Guidelines Version 4" by the Global Reporting Initiative (GRI)

Disclaimer

The contents of this report refer not only to past events, but also cover future plans and forecasts at the time of publication. Please note that actual future activities and results may differ from those described herein.

Business Growth at PACIFIC METALS and the History of Our Environmental Activities



1970

The Company absorbed Pacific Nickel Co., Ltd. through merger and changed its name to PACIFIC METALS CO., LTD. and established a foundation as the top manufacturer of ferronickel.



40,000 KVA closed nickel furnace (Hachinohe 45.9)

1970

Opened Philippines Office.

1972

Concluded a technological support agreement with Indonesian company PT Aneka Tambang for construction of a ferronickel smelting plant (Antam Plan).

1973

Acquired an equity stake in Rio Tuba Nickel Mining Corporation of the Philippines and started to involve development of nickel mines.

1975

Telemeter system
Installed SOx monitoring equipment (compliance with agreement)

1979

Completed construction of Niigata Plant and departments of electromagnetic materials and activated carbon of Shibata Plant moved to Niigata Plant.

Indicates environmental initiatives

1980

Acquired industrial waste disposal business permit.

1983

Separated and transferred Iwase Plant to Pacific Rundum Co., Ltd., along with its abrasives business operation.



No.2 Mannesmann curved continuous casting machine (Hachinohe 56.10)

1984

Separated and transferred Naoetsu, Toyama and Narashino Plants to Pacific Special Alloy Castings Co., Ltd., Pacific Steel Mfg. Co., Ltd. and Pacific Machinery & Engineering Co., Ltd., respectively, along with its casting, forging and machinery business operations.

1985

The name Hachinohe Plant was renamed to Hachinohe Works.

1988

Developed a nickel mine by taking an equity stake in Taganito Mining Corporation in the Philippines.

1995

Installed a 60,000 kVA electric furnace. Three electric furnaces system established at Hachinohe Works.

1996

Completion of Kawaragi Wharf No.2 at Hachinohe Harbor (public).

1997

Completed installation of raw material transport conveyor line (Kawaragi).



1997

Established Pacific Energy Center Co., Ltd. (power supply from 2000 to 2015)

1998

Acquired ISO9002.

1999

Transferred headquarter functions to Hachinohe to become a specialized manufacturer for ferronickel.

Since our founding, we have been committed to meeting the diverse needs of our customers. By developing new technologies and new products and working on quality control, we have established ourselves as one of the world's top manufacturers of ferronickel. At the same time, we continue to enthusiastically promote environmental activities to contribute to a sustainable society.

2000

Registered as environmental measurement certification business.

2003

Construction completed "Incinerated ash and scallop shell recycling facility" for recycling business.

2003

Transitioned to ISO9001:2000.

2005

Achieved 1 million tons of ferronickel production.

2005

- Conducted environmental assessment in accordance with the Aomori Prefecture Environmental Impact Assessment Ordinance.
- Acquired special management industrial waste disposal business permit.
- Installed denitration equipment in the second power plant.

2006

Completed a recycling facility for molten fly ash for recycling business.

2007

- Installed a small-scale wastewater treatment device as part of the drainage port.
- Installed drainage monitors (compliance with agreement).

2008

Opened Jakarta Office.



2009

Acquired ISO 14001:2004.

2010

- Installed a dust monitor in the ore yard.
- Launched webpage for waste disposal status.

2011

Installed monitoring cameras for drainage and chimneys (drainage and dust control).

2012

Acquired OHSAS 18001:2007.
Transitioned to ISO 45001:2018.

2013

Installed wastewater treatment system (compliance with agreement).



2014

Started operation of Integrated Management System.

2015

Established Basic Policy on Corporate Governance.

2016

Formulated a new "company philosophy" and "long-term vision."

2017

Awarded "Excellent Workplace" from the Aomori Industrial Waste Association.

2018

Received the "Mottainai Aomori Award" on the 10th Anniversary of the Mottainai Aomori Prefectural Movement Promotion Council.

2020

Obtained certification of a specially controlled industrial waste disposal operator "Excellence."

2021

- Transitioned to ISO 45001:2018.
- Signed a capital and business alliance agreement with AMITA HOLDINGS CO., LTD. to strengthen and enhance our resource recycling business and environmental recycling business.

2022

Transitioned to Prime Market of Tokyo Stock Exchange.

2022

- Endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).
- Developed a manufacturing process of raw materials for lithium-ion battery materials, utilizing emulsion flow.

2023

Signed a joint research and development agreement with Emulsion Flow Technologies Ltd. to realize rare metal recycling of lithium-ion batteries.

1970-

Established a foundation as a top ferronickel manufacturer

In 1949, the Company was founded as Nisso Steel Co., Ltd., and following the establishment of Pacific Nickel Co., Ltd. in 1959, in 1970 the Company absorbed Pacific Nickel and changed its name to PACIFIC METALS CO., LTD. In 1973, we started developing nickel mines. We have established a stable supply of raw materials and a high-quality production system.

Pollution countermeasures and regulations have been strengthened due to factors such as the spread of pollution-related diseases, so we have also accelerated the promotion of environmentally friendly business activities, such as concluding pollution prevention agreements.

1980-

Spun off affiliated companies and formed the Pacific Group

In 1983, the Company separated and transferred its Iwase Plant to Pacific Rundum Co., Ltd., and in 1984, separated and transferred Naoetsu, Toyama and Narashino Plants to Pacific Special Alloy Castings Co., Ltd., Pacific Steel Mfg. Co., Ltd. and Pacific Machinery & Engineering Co., Ltd., respectively. Consequently, this formed the network of the Pacific Group.

At that time, waste disposal in Japan was increasingly becoming an issue garnering attention as waste volume was surging due to growing consumption and expanded production activities. This was when the Company acquired the industrial waste disposal business permit.

1990-

Established the three electric furnaces system. Transformed to become a specialized manufacturer of ferronickel.

With the installment of the third ferronickel smelting electric furnace at Hachinohe Works in 1995, the Company established its three electric furnaces system. Subsequently, in 1999, we transferred headquarter functions to Hachinohe, transforming ourselves to become a specialized manufacturer of ferronickel. In addition, in 1997 we established Pacific Energy Center Co., Ltd. to specialize in the wholesale supply of electric power to electric utility companies by leveraging the technology for the in-house power generation system developed by the Company.

2000-

Promoting the recycling business to contribute to the creation of a recycling-oriented society

Having accumulated a track record of accomplishments as a top manufacturer of ferronickel, in 2005 we reached production volume of 1 million tons. Moreover, as waste disposal and recycling measures for the development of a recycling-oriented society escalated in importance, in 2003 we completed construction of a "recycling facility for incinerated ash and scallop shell" and similarly in 2006, completed a "recycling facility for molten fly ash" among other efforts to promote our recycling business.

2010-

Initiatives for ESG management based on a new company philosophy and vision

Awareness of ESG has risen worldwide, and we addressed social issues and worked on the development of corporate governance while strengthening our environmentally friendly business activities to realize ESG management.

Then in 2016, we formulated a new "company philosophy" and "long-term vision" in order to achieve sustained growth and a sustainable society from a medium- to long-term perspective.

2020-

Aiming to realize a sustainable society

Now, when the whole world is working on climate change countermeasures, we are also promoting the use of carbon-free energy and other environmentally friendly manufacturing technologies and methods, as well as expanding sales of eco products.

We will continue to contribute to the realization of a sustainable society by responding to all environmental risks and promoting initiatives to achieve carbon neutrality by FY2050.

The material that realizes a wide range of possibilities by making the most of its excellent properties

Features of Ferronickel

▶ Excellent material properties

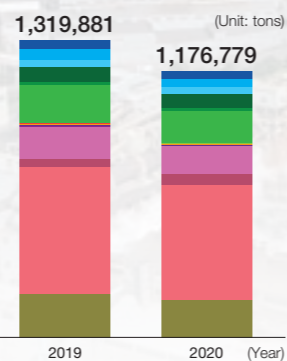
Made of stainless steel and alloy steel, it can realize high heat resistance and high corrosion resistance. It is used as an alloy material that requires resistance to high temperatures, fresh water, sea water, and alkaline aqueous solutions.

▶ Wide range of uses

Stainless steel has excellent corrosion resistance and heat resistance, and has a beautiful luster, so it is used in large quantities in household goods such as spoons and forks, automobiles, building materials such as buildings and housing, and various industrial fields such as chemicals, foods, and brewing.

- Construction
- Industrial equipment
- Electrical equipment
- Home and commercial equipment
- Ships
- Automotive
- Rolling stock
- Other transportation equipment
- Containers
- Various products
- Next process
- Reprocessing
- For distributors
- For non-reporters
- Domestic demand total
- Exports

Order statistics for stainless steel sheets by application



* Referred to application examples and order statistics by application from Japan Stainless Steel Association (JSSA)

Nickel ore is smelted in one of the world's largest electric furnaces using the ELKEM method and is transformed into ferronickel, an alloy of iron and nickel that is the main raw material of stainless steel. PACIFIC METALS' ferronickel is put to use in lifestyle equipment and helps to enrich people's lives in invisible ways.

▶ High recyclability

Nickel is one of the most recycled materials in the world. It is often recovered and recycled as an alloy. Today, about half of the nickel content in stainless steel products comes from recycling.

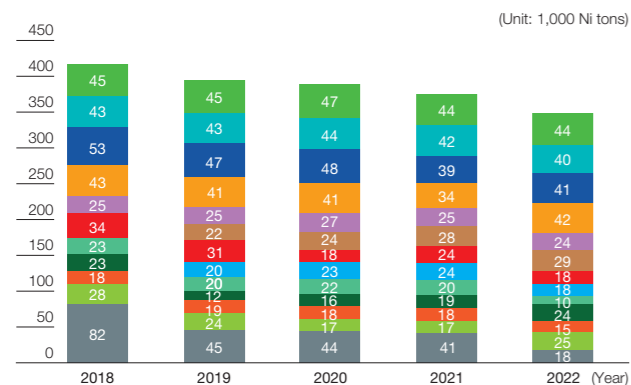


▶ Growth potential

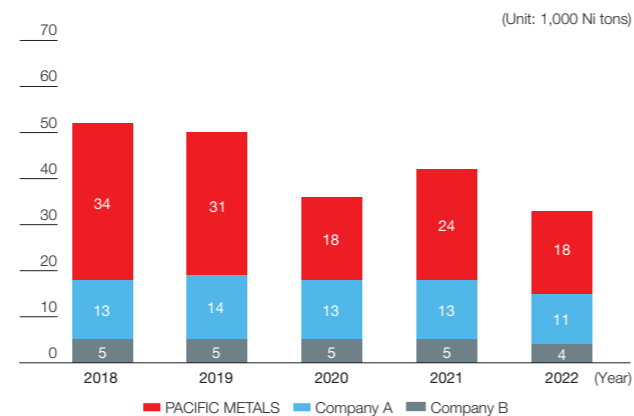
Due to its diverse performance, ferronickel is widely used from the dining table to the industry. It can be considered a useful material as the need for sustainable materials is expected to increase around the world.

Information Relating to Production

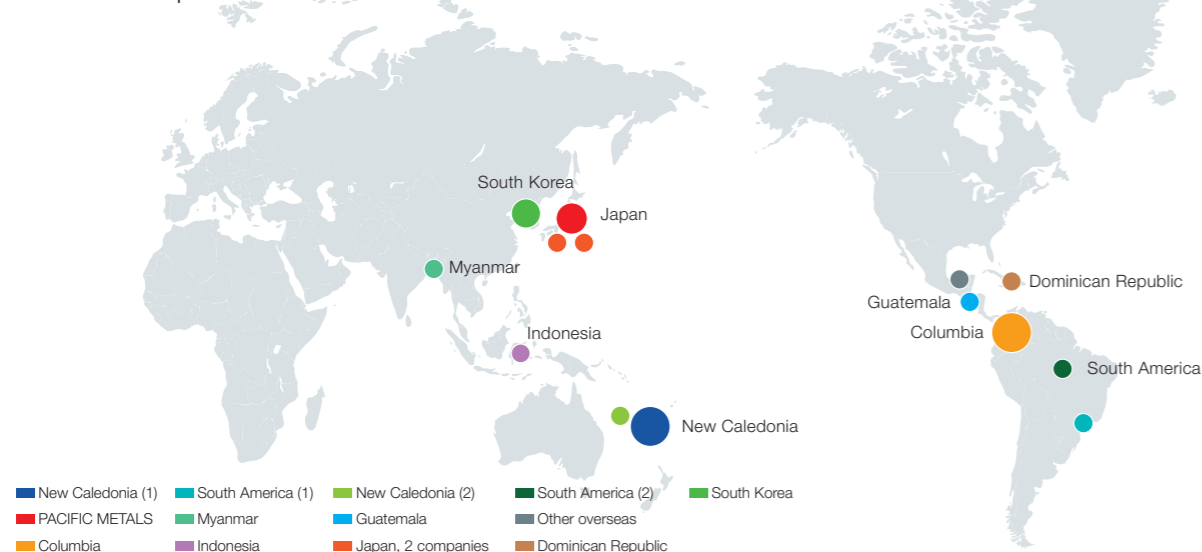
Global ferronickel production



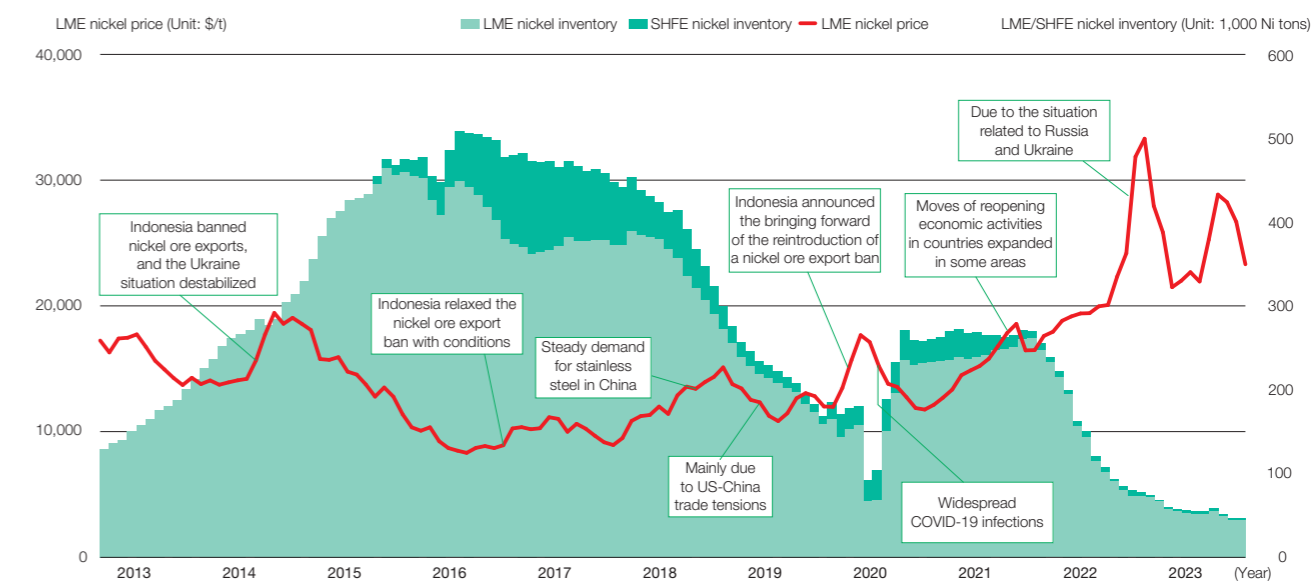
Japan's ferronickel production



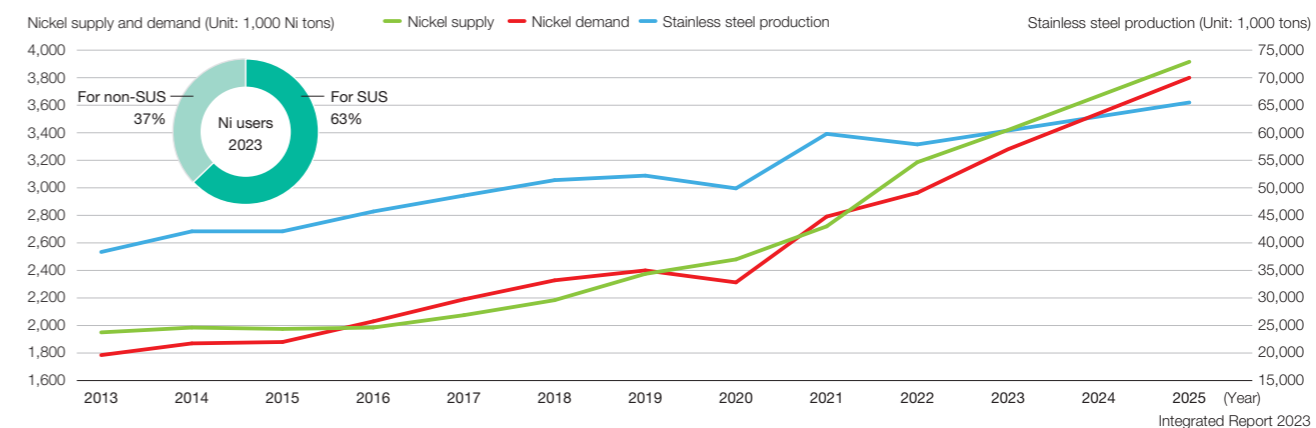
Global ferronickel production bases *Our research



Trends in LME nickel prices and nickel inventory volumes



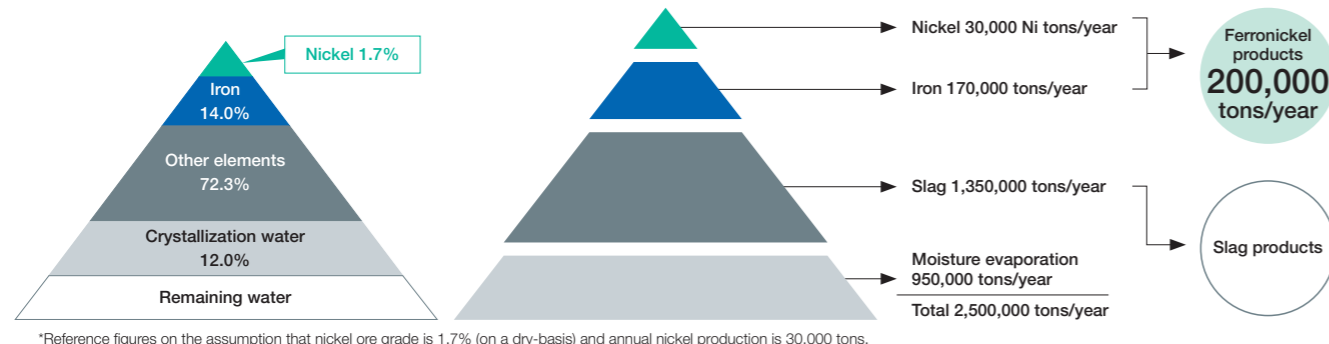
Outlook for stainless steel production and nickel supply and demand



What Is Ferronickel?

Raw Material Information of Ferronickel

Composition of nickel ore



*Reference figures on the assumption that nickel ore grade is 1.7% (on a dry-basis) and annual nickel production is 30,000 tons.

Composition of ferronickel (on the assumption of nickel sales volume of 30,000 Ni tons/year)

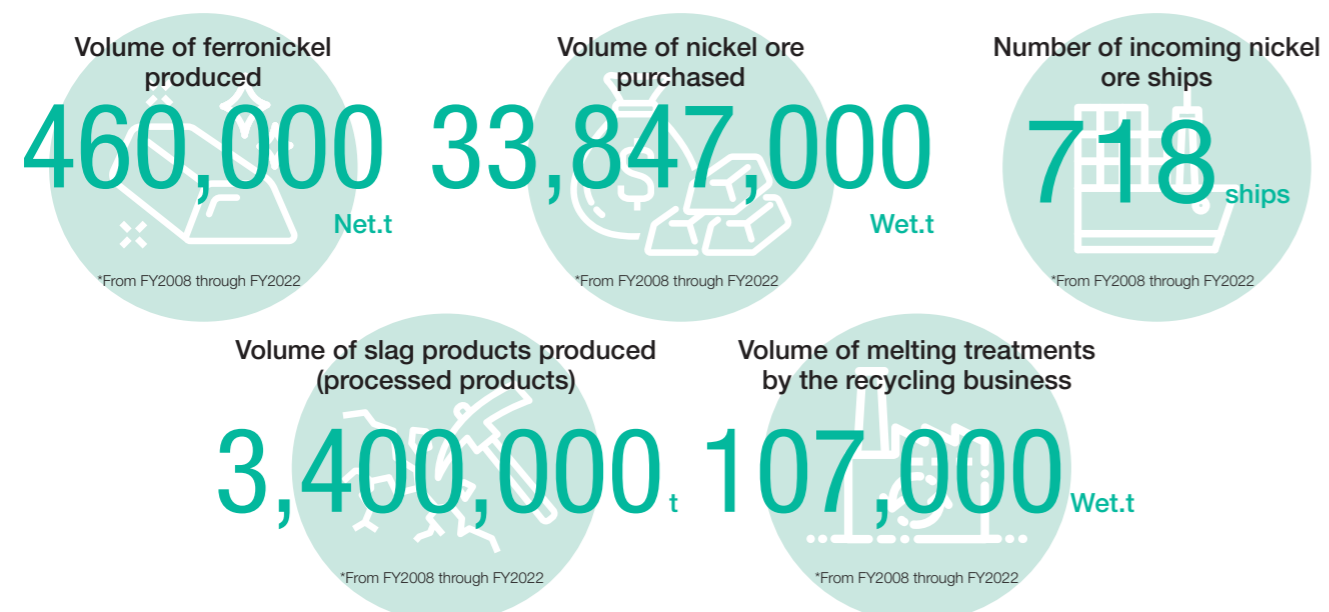


All Slag Generated in the Ferronickel Manufacturing Process Is Recycled

Ferronickel slag is a by-product of the ferronickel smelting process. Molten slag is poured into cooling pits, where it is cooled by atmospheric cooling and moderate sprinkling with water, to turn it into a solid, rock-like state. This rock-like slag is crushed and mechanically stabilized before being recycled. This resource is attracting attention as an environmentally friendly recycled material.

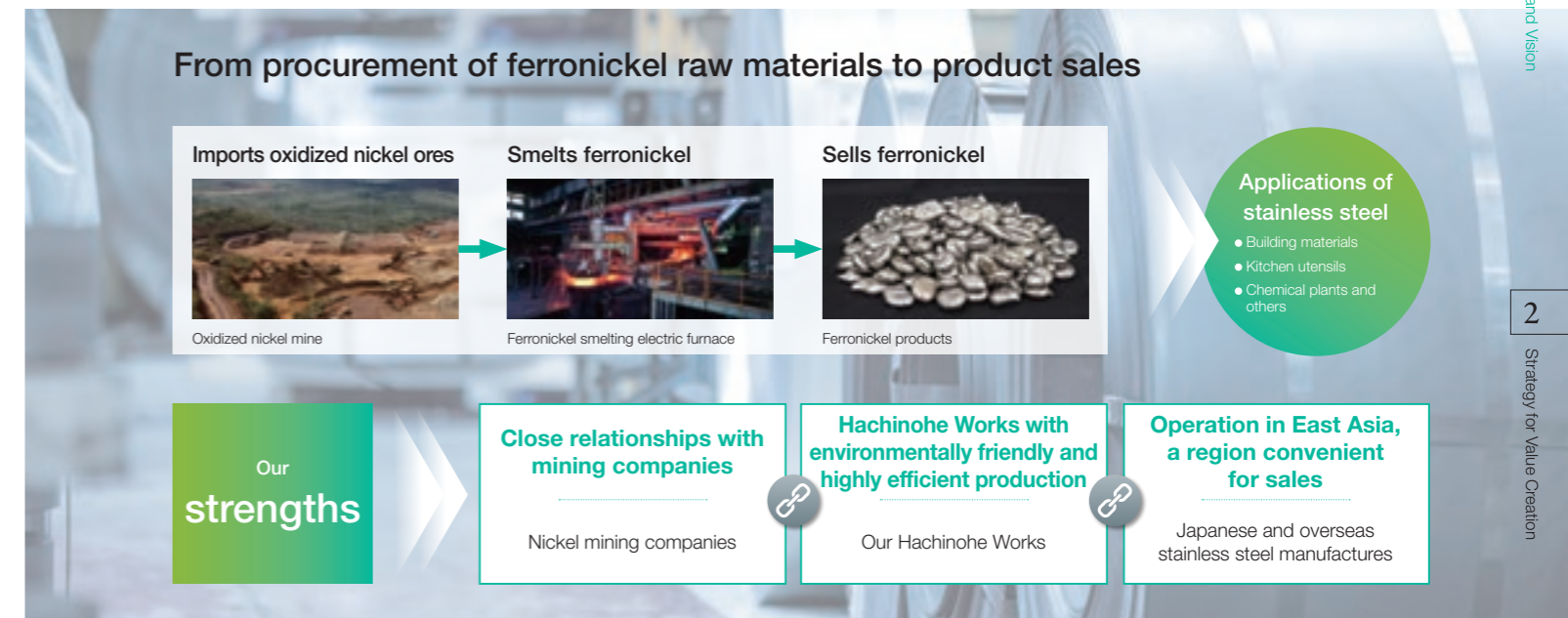


PACIFIC METALS by the Numbers



Business Model and Competitive Advantage

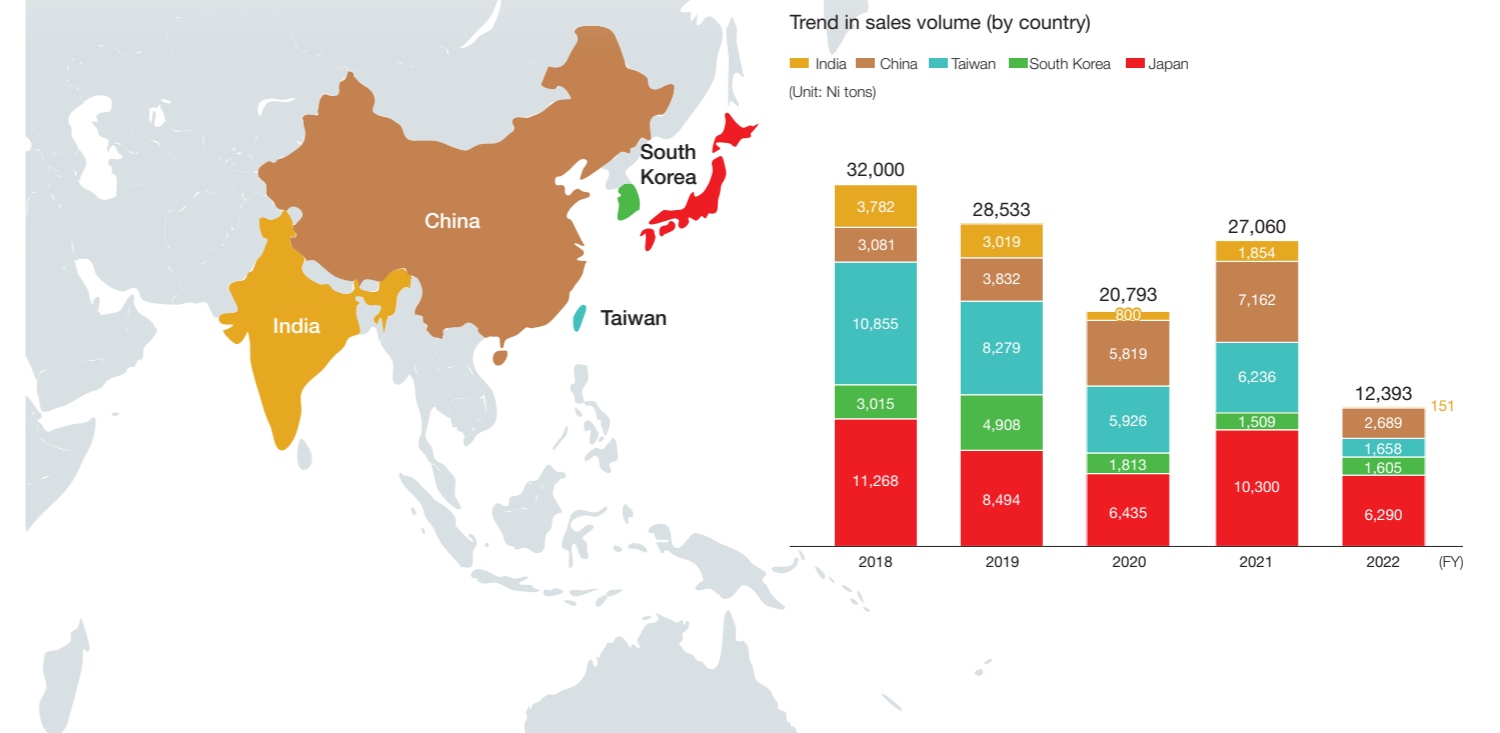
As One of the World's Top Ferronickel Manufacturers



Strength 1 Operation in East Asia, a Region Convenient for Sales

Currently, about 50% of our sales are made overseas, supported by our network centered on East Asia. Through our carefully cultivated information network, we collect information on the market and technology, and use it effectively for future business development.

As one of the world's top manufacturers of ferronickel, the Company has also actively ventured into overseas businesses, working with local companies in the Philippines, Indonesia, and other countries to develop resources. In order to comply with international rules and local laws and regulations and conduct corporate activities that contribute to the development of each country, we give due consideration to local traditions, culture, business practices, and labor-management practices, based on international goals related to human rights such as the SDGs.



We sell ferronickel not only to Japan but the rest of the world as well. Our strengths are in our production capacity made possible with some of the world's largest electric furnaces, our connections with mining companies supporting that production, and our sales network that supports overseas expansion. By combining these strengths, we have realized the production and supply of high-quality, stable products that are valued around the world.

Strength 2 Hachinohe Works With Environmentally Friendly and Highly Efficient Production

We own three of the world's largest electric furnaces, and we use world-class smelting technology to carry out efficient manufacturing.

Achieving highly efficient production

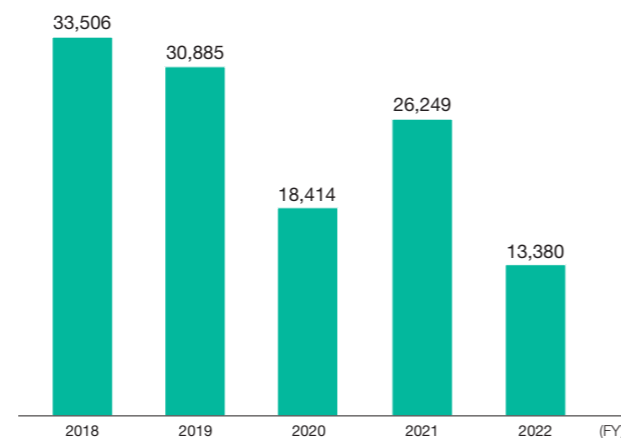
Our Hachinohe Head Office (Manufacturing Works) is located in Hachinohe Port, which is a cornerstone of the coastal industrial zone facing the Pacific Ocean, making it easy to import nickel ore from overseas. In terms of product sales, this also enables us to expand into the Asian region, starting with major domestic stainless steel manufacturers. Our raw materials are transported efficiently from Hachinohe Port on a large conveyor with a belt width of 3.2m and a total length of 2.4km, saving energy and costs compared to truck transportation. We extract nickel efficiently from the transported nickel ore using our proprietary smelting technology and some of the world's largest electric furnaces.



Environmentally friendly technology

We are making innovations to reduce our environmental impact, such as reducing our energy consumption by using the high-temperature exhaust gas emitted from electric furnaces in the ore drying process, and partially replacing nickel ore with recycled raw materials that contain nickel.

Production volume
(Unit: Ni tons)

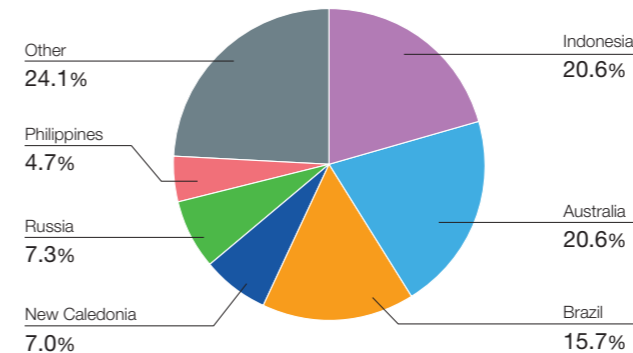


Strength 3 Close Relationships With Mining Companies

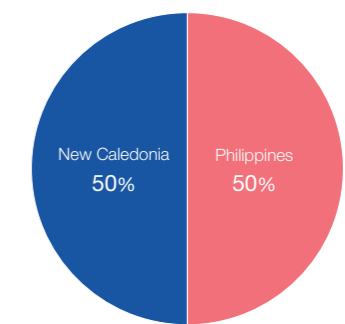
As one of the world's top manufacturers of ferronickel, the Company has also actively ventured into overseas businesses, working with local companies in the Philippines, Indonesia, and other countries to develop resources. The nickel mine development businesses of Philippines-based Rio Tuba Nickel Mining Corporation and Taganito Mining Corporation, which were formed through joint ventures with local capital, support our production of high-quality products through the stable supply of raw materials. We have built up a network of trust that transcends the oceans in addition to technological assistance and resources development.

Information relating to purchasing

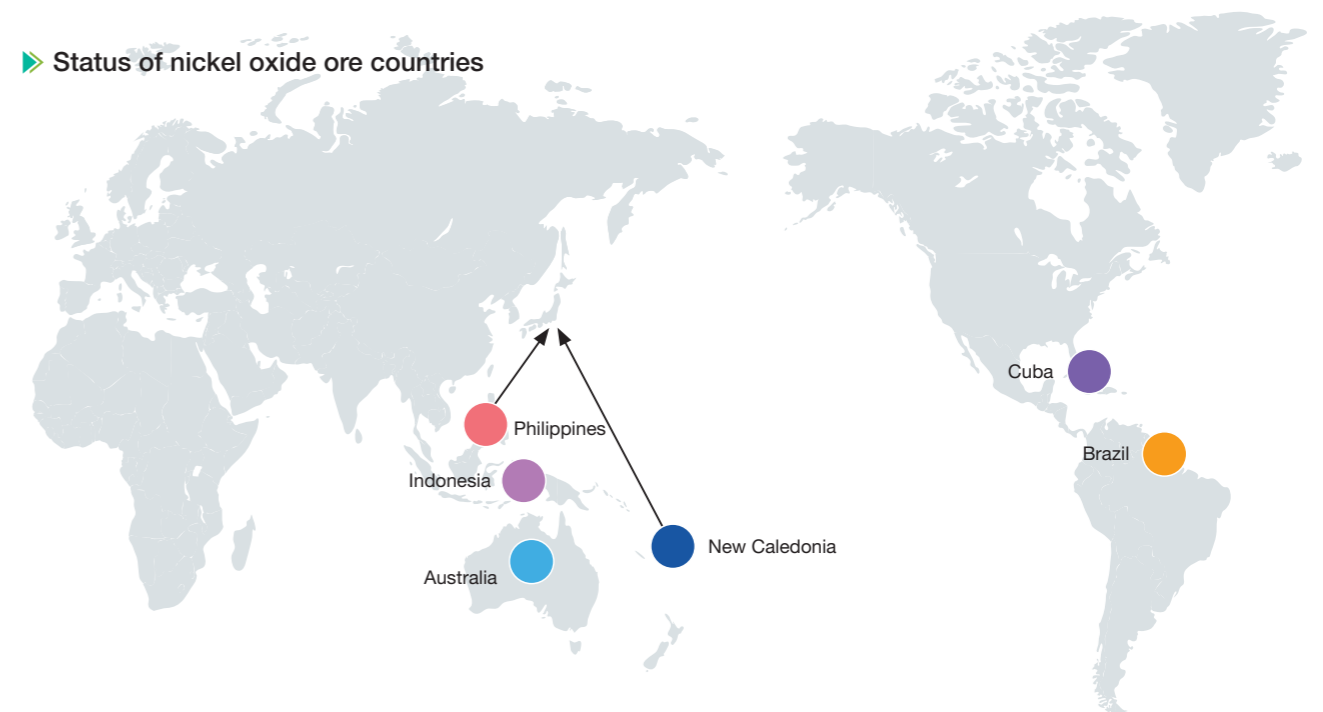
Global nickel ore reserves
(102,070,000 Ni tons as of 2022)



Amount of nickel oxide ore we purchased
(14,000 Ni tons for FY2022)



Status of nickel oxide ore countries



Philippines Both the Rio Tuba Nickel Mining Corporation and the Taganito Mining Corporation are joint ventures in which we have contributed 36% and 33.5% of the capital, respectively. We have continuously provided the mutual exchange of technical and human support since the mines first opened.

New Caledonia We procure ore from Société Minière Georges Montagnat SARL and Mai Kouaoua Mines on a stable basis under 10-year long-term contracts.

Indonesia In 1975, we provided technical assistance to PT Antam Tbk as a general supervisor involved in the construction of Indonesia's first ferronickel smelting plant, as well as operational guidance, and over the years we had provided a wide range of technical assistance in mining operations, nickel smelting, and other areas.

*In January 2014, a policy to ban exportation of unprocessed ore came into effect. From January 2017 to December 2019, that policy was partially eased.
*A policy to ban exportation is being implemented again since January 2020

Leverage the power of people to deliver the earth's resources in more useful forms and contribute to the happiness of humankind

Value Creation Process

Environmental Changes Affecting Business

- Climate change issues
- Soaring resource and energy prices
- Materialization of resource nationalism in the nickel ore-supplying countries
- Changes in main products' market structure

INPUTS

PACIFIC METALS' Main Capitals

Financial capital

- Net assets 72.0 billion yen

Manufactured capital

- Smelting equipment Three furnaces (Capacity: 60,000-80,000 kVA)
- Capital investment 1.2 billion yen

Natural capital

- Long-term nickel ore sales and purchase agreement 6 units
- Purchase volume of nickel ore 1,150,000 tons

Human capital

- Number of employees (consolidated) 468

Social capital

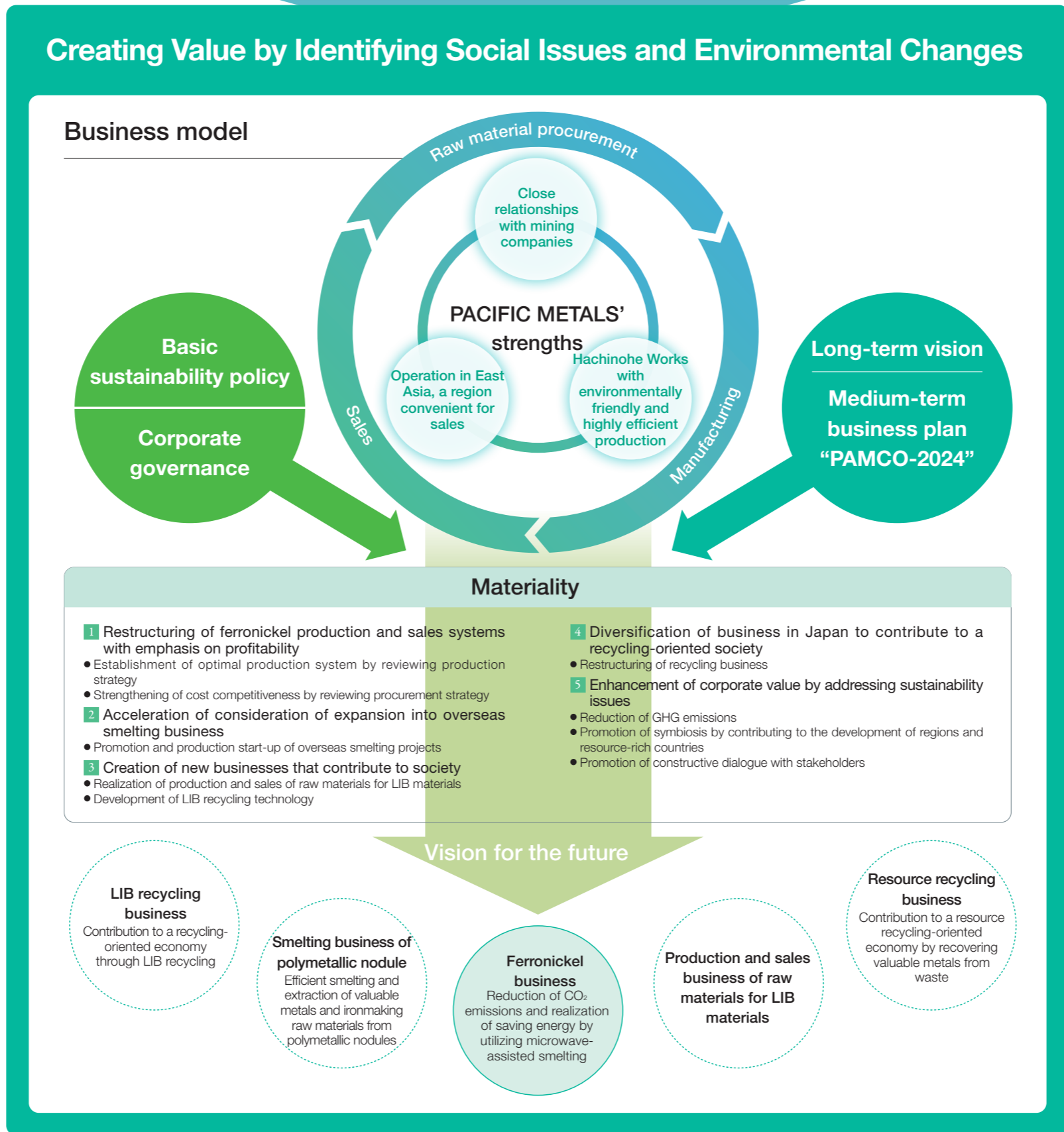
Customers (delivery destination)

- Ferronickel sales destination 13 companies
- Ferronickel slag sales destination 46 companies

Intellectual capital

- R&D investment cost 360 million yen
- 1 GHG emissions reduction
- 2 Expanded use of nickel recycling resources
- 3 Increased ferronickel slag applications
- 4 R&D related to hydrometallurgical and smelting technologies

Creating Value by Identifying Social Issues and Environmental Changes



Vision

A comprehensive materials company that co-creates a sustainable, recycling-oriented society

OUTCOMES

Values provided to society

- Efficient use of limited resources
- Creation of a sustainable recycling-oriented society
- Reduction of GHG emissions
- Contribution to the development of regions and resource-rich countries

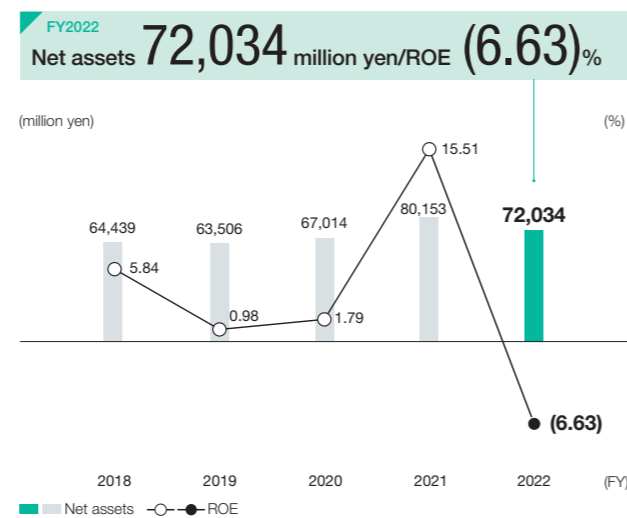
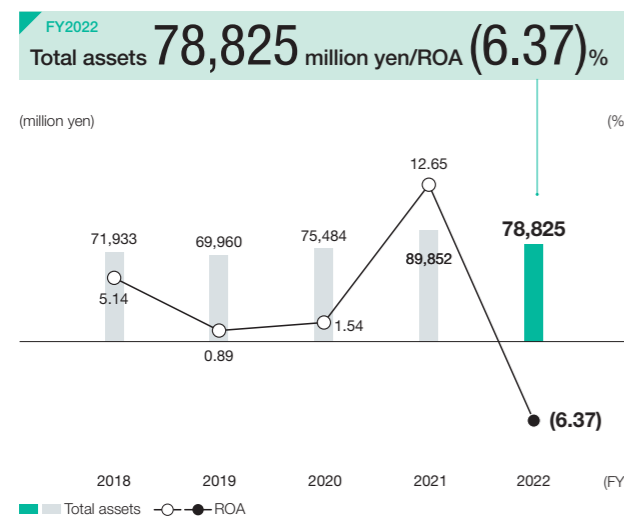
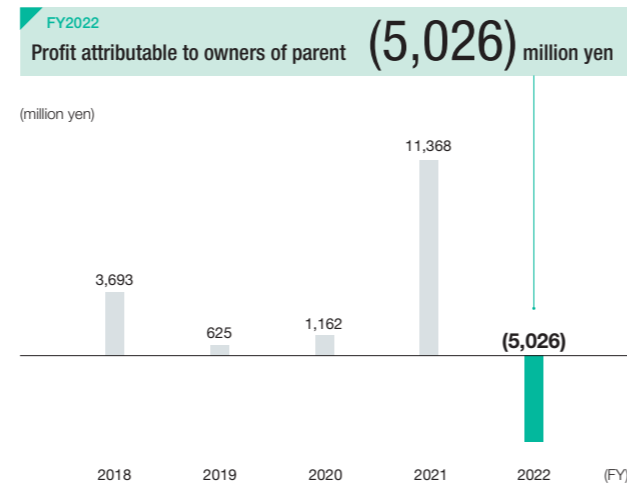
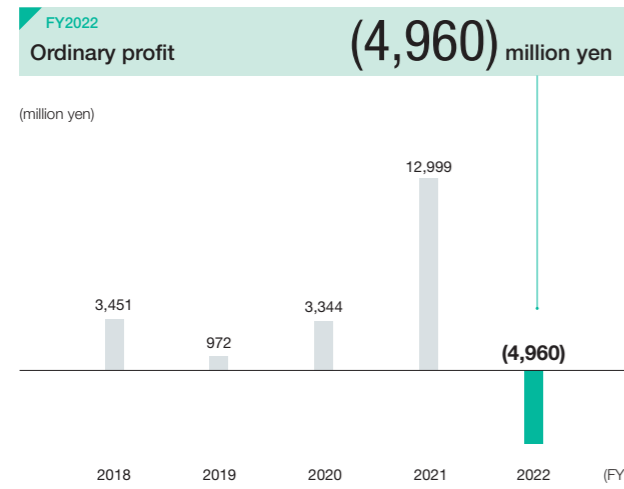
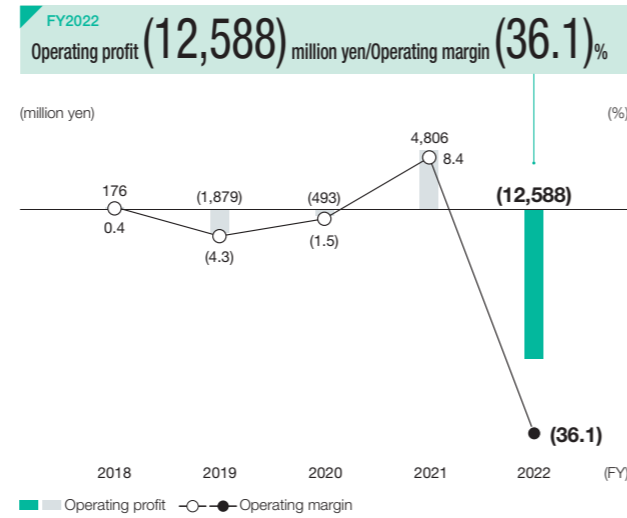
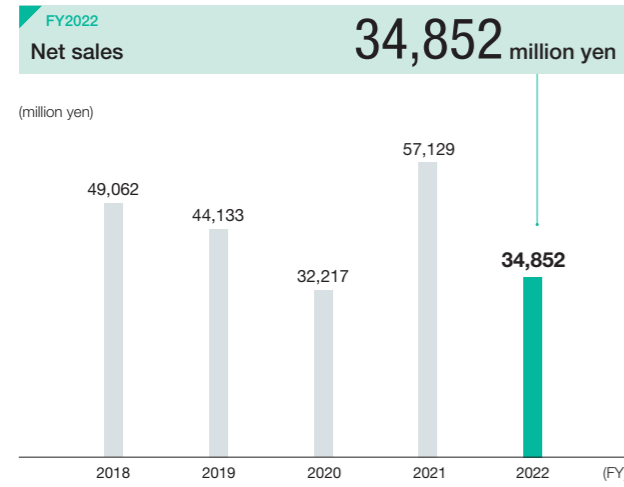
OUTPUTS

Market development

Results for FY2022

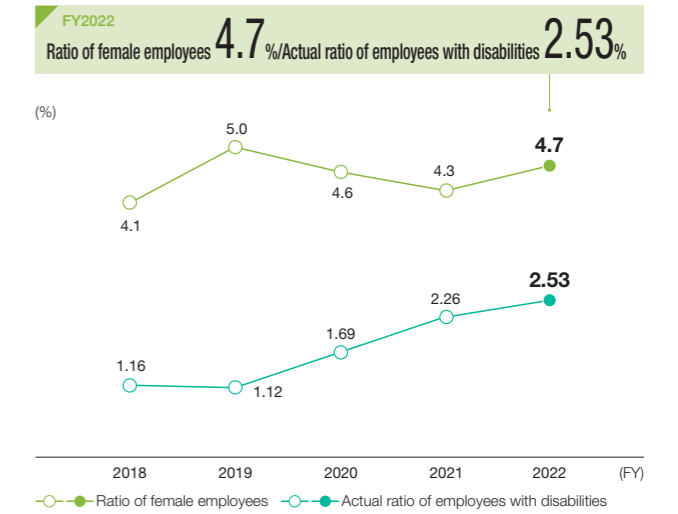
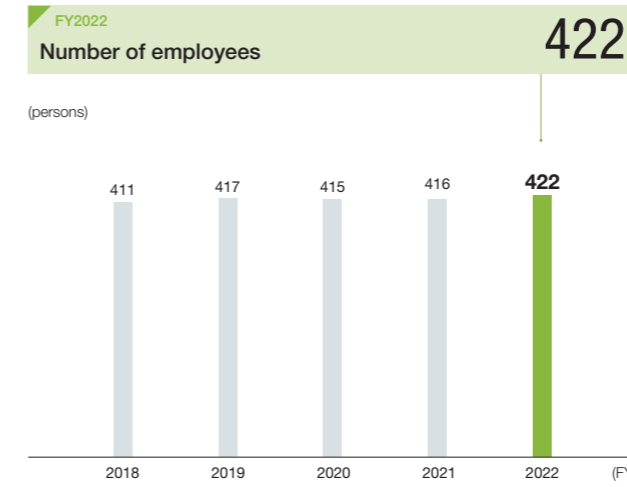
- Ferronickel sales volume 12 kt
- Ferronickel slag sales volume 737 kt
- GHG emissions (CO₂-equivalent) 646 kt-CO₂/year
- Recycled water volume 47,670 k m³/year
- Consolidated net sales 34.8 billion yen
- Dividend payout ratio 30%

Financial Data (Consolidated)

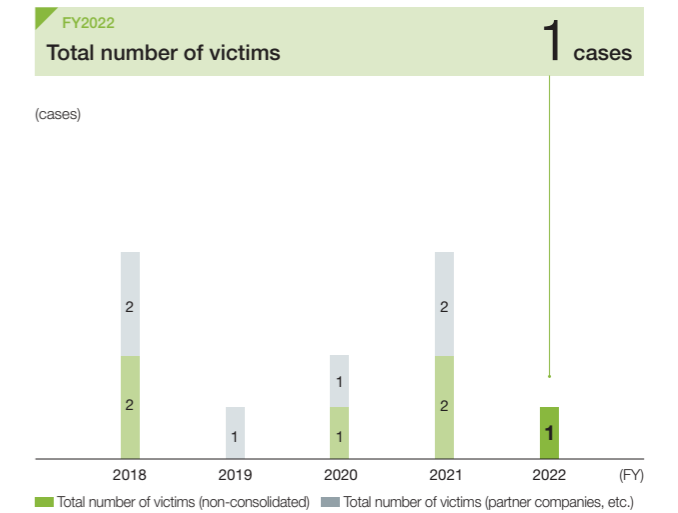
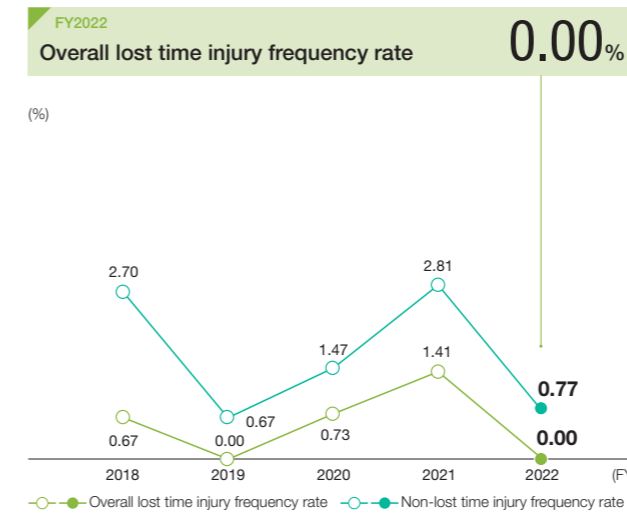


Non-financial Data (Non-consolidated)

Employee-related



Occupational health and safety-related



Environment-related

