ROK Market Brief No.13

Nickel Ores Market

Opportunities under the Korea-Central America Free Trade Agreement

The Korea-Central America FTA (K-CA FTA) brings significant benefits for CA exporters. Under the agreement, the Republic of Korea and the Central American countries will immediately or gradually reduce tariff on more than 95 percent of traded products. Such benefit will help CA exporters compete with exporters from other countries which have trade deals with Korea.

This guide provides an overview of the nickel ores category that benefit from tariff reductions under the K-CA FTA and have market access.

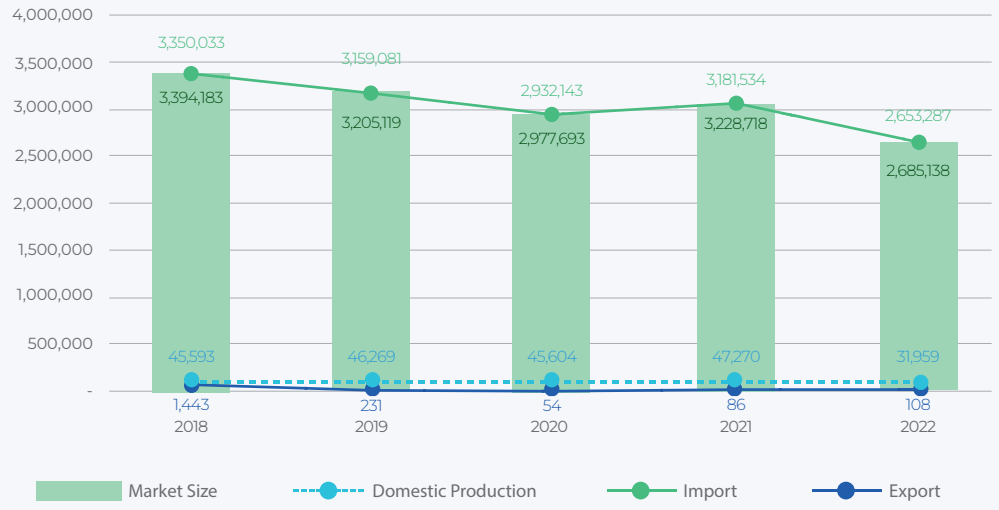
Market Snapshot

The ROK nickel ores market volume in 2022 shows a major drop since 2018, indicating an average annual growth of -5.27%. On the other hand, the market value has shown a strong growing trend. This increase is attributed to the increased global commodity price including nickel ores which reached its peak in 2022.

Imports dominate the ROK nickel ores market, accounting for 99% in volume and 100% in value. It indicates ROK market's heavy reliance on imported nickel ores, with minimal domestic production and export.

Figure 1. ROK nickel ores market in volume (2018-2022)

(Unit: Ton)



Source) Korea Customs Service Import and Export Statistics (2023); Korea Institute of Geoscience and Mineral Resources (KIGAM).
Note) Market Size = (Domestic production+Import) – Export

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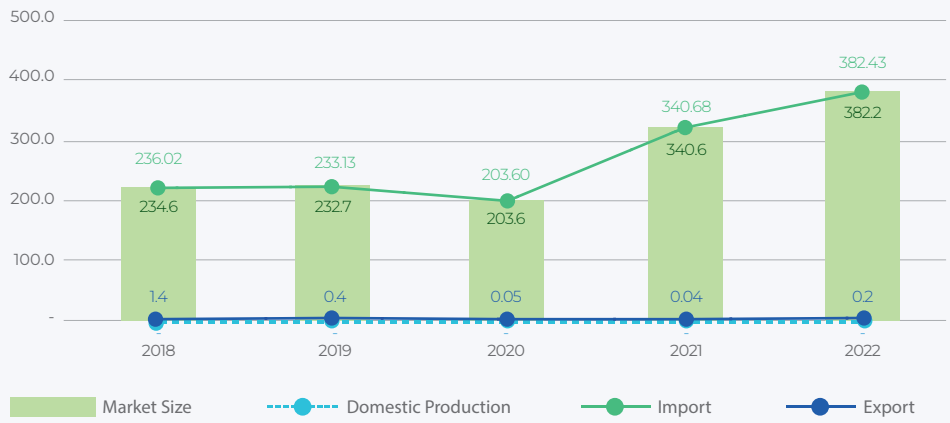
Figure 2. ROK nickel ores market in value (2018-2022)

(Unit: million USD)



Source) Korea Customs Service Import and Export Statistics (2023); Korea Institute of Geoscience and Mineral Resources (KIGAM).
Note) Market Size = (Domestic production+Import) – Export

The nickel ores demand is expected to have a notable increase due to the expanding electric vehicle and environmentally friendly energy markets, as well as the growing popularity of high-nickel batteries, leading to a more rapid rise in nickel demand compared to other metals. While there is no nickel mines in Korea, by 2040, the demand for nickel for energy transition purpose is expected to double under the 2050 carbon neutrality goal.

Hence, for the next 5 years from 2022 to 2027, it is expected that the ROK market size in value will increase further even at a higher growth rate, at around 19.7% average annual growth rate, and the market volume is likely to steadily increase at 8% annual growth rate.

As for tariff, the general tariff for imported nickel ores (HS Code 260400) in ROK is subject to a base rate of 0%. Therefore, all countries exporting nickel ores to Korea, including the countries under K-CA FTA, benefit from a complete elimination of tariff rates for nickel ores. This tariff elimination provides a substantial advantage for these countries in the competitive worldwide landscape of nickel ore imports.

Table 1. Tariff on HS Code 260400 as of 2024

Country	HS Code	WTO bound rate	Current rate (2024)	Elimination of custom duties[1]
Costa Rica	260400.0000	1%	0%	2019.11.01
El Salvador	260400.0000	1%	0%	2020.01.01
Panama	260400.0000	1%	0%	2021.03.01
Honduras	260400.0000	1%	0%	2019.10.01
Nicaragua	260400.0000	1%	0%	2019.10.01
Guatemala	260400.0000	1%	0%	-
New Caledonia	260400.0000	1%	0%	-

Source) Customs Law Information Portal. (2024). Tariff; FTA powerhouse, KOREA. (2024). FTA agreement and basic documents

[1] Effective date of the FTA: Nicaragua and Honduras(Oct. 2019), Costa Rica(Nov. 2019), El Salvador (Jan. 2020), Panama (Mar. 2021), For Guatemala, it is assumed in the report that the FTA will come into effect within the year 2024.

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Competitive Landscape

The ROK's import volume of nickel ore indicates that the New Caledonia, Philippines, and Guatemala are the major suppliers. In 2022, the total import volume from the three major suppliers accounted for 98% of total nickel ore imports. The detailed import statistics in volume from 2018 to 2022 is presented in the table below.

Table 2. Import volume of Nickel ores per country (2018-2022)

(Unit: Ton)

Country	2018	2019	2020	2021	2022
New Caledonia	3,337,363	3,158,991	2,932,121	3,076,534	2,401,819
Philippines	12,000	0	0	105,000	109,943
Guatemala	0	0	0	-	96,424
Côte d'Ivoire	-	-	-	-	45,100
China	20	43	22	0	0
Others	620	47	0	0	1
Total	3,350,003	3,159,081	2,932,143	3,181,534	2,653,287

Source) Customs and Excise Department import and export statistics (2023); Export and import performance
Note) Value – means there is no import volume at all. Value 0 means there was import but with a very insignificant and small number which is close to zero.

In addition to the tariff dynamics, it is essential to recognize that Korea is a substantial importer of copper ores, nickel ores, and zinc ores. The local production of these minerals is limited to non-existent, making Korea heavily reliant on imports to meet its industrial demands. This presents significant opportunities for exporters dealing in these minerals to tap into the thriving Korean market.

Consumer Preference

For nickel ores and concentrates, the foremost important task for ROK smelters is diversifying the resource supplier to diverge from the long-time dependency on imports from China. Furthermore, most of smelters find it important to have a long-term contract with mining companies. Since ROK does not have natural reserves of nickel, supply of nickel ore concentrates is solely relied on its import. For industries with high nickel import dependencies, signing long-term contracts with suppliers can provide price stability and predictability. This approach can help mitigate the impact of short-term price fluctuations and ensure consistent nickel supply.

When it comes to preference regarding nickel itself, the recent preference is from laterite mines. Previously, sulfide mines were widely preferred as it rendered production of high purity anode materials due to its higher grade of nickel. However, due to the long-term mining from sulfide mines, it faces deterioration of its nickel grade. Also, it is discovered that laterite mine has larger reserves than that of sulfide mines. Thus, demand for laterite mine is rising.

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Main Distribution Channels

Raw nickel ores are imported by ROK's several major domestic manufacturers who smelts and manufactures nickel ores to distribute refined nickel in ROK. Nickel product can also be distributed and sold in bulk or tonnage after further chemical or physical production processes.

One of the largest refineries in Korea is POSCO SNNC nickel refinery. Established in 2006, it stands as Korea's inaugural specialized ferronickel manufacturer, dedicated to the production and sale of ferronickel (composed of 20% nickel and 80% iron). In 2021, POSCO initiated the production of high-purity nickel and plans to annually produce 20,000 tons specifically for electric vehicle batteries. Additionally, POSCO aims to augment its production capacity through collaboration with global nickel companies, particularly in Australia and Indonesia.

Given South Korea's lack of domestic nickel ores and concentrates production, many local enterprises find themselves dependent on foreign sources maintaining certain levels of import demand. Some of the major importers of nickel ores in ROK are listed below:

Table 3. Major ROK importers of nickel ores

No.	Company name	Enterprise scale	Import value (Unit: million USD)	Industry classification	Major importing countries	Address	Tel	Website
1	Korea Nickel Corp	Conglomerate	50 ~ 100	Other non-ferrous metal smelting, refining and alloy manufacturing	New Caledonia, Canada, UK	400, Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea	+82-(0)31-737-0954	www.korea-nickel.co.kr
2	Panasonic Korea Co., Ltd.	Midsize business	50 ~ 100	Home appliances and parts wholesale	China, Japan, Thailand	254, Seocho-daero, Seocho-gu, Seoul, Republic of Korea	+82-(0)2-2106-6666	www.panasonic.co.kr
3	Muji Korea Co., Ltd.	SMEs	50 ~ 100	General product wholesale	China, Vietnam, Japan	12, Yonsei-ro, Seodaemun-gu, Seoul, Republic of Korea	+82-1577-2892	www.mujikorea.net
4	Black and Decker Asia Pacific Pte. Ltd.	SMEs	50 ~ 100	Bulb, lamp and lighting equipment wholesale	China, Mexico, Czech Republic	218, Yeoksam-ro, Gangnam-gu, Seoul, Republic of Korea	+82-(0)2-3016-9200	www.blackanddecker.co.kr
5	Enertec Co., Ltd.	SMEs	50 ~ 100	Other non-ferrous metal smelting, refining and alloy manufacturing	Canada, Chile, Iran	138, Gongdanbuk-gil, Chilseo-myeon, Haman-gun, Gyeongsangnam-do, Republic of Korea	+82-(0)55-586-5193	www.ener-tec.co.kr
6	Cuchen Co., Ltd.	Midsize business	20 ~ 50	Kitchen electrical appliance manufacturing	China, Germany, Vietnam	530, Samseong-ro, Gangnam-gu, Seoul, Republic of Korea	+82-(0)2-2008-7272	www.cuchen.com

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No.	Company name	Enterprise scale	Import value (Unit: million USD)	Industry classification	Major importing countries	Address	Tel	Website
7	SungEel Hitech Co., Ltd.	SMEs	20 ~ 50	Other basic inorganic chemical substances manufacturing	Japan, Malaysia, Singapore	143-12, Gunsansandan-ro, Gunsan-si, Jeonbuk-do, Republic of Korea	+82-(0)63-466-9200	www.sungeelht.com
8	Bokuk Electronics Co., Ltd.	SMEs	20 ~ 50	Home appliances and parts wholesale	China, Hong Kong	57, Seongseoseo-ro, Dalseo-gu, Daegu, Republic of Korea	+82-(0)53-582-7063	www.bokuk.com
9	Electrolux Korea Co., Ltd.	SMEs	20 ~ 50	Home appliances and parts wholesale	China, Hungary, Thailand	41, Cheonggye cheon-ro, Jongno-gu, Seoul, Republic of Korea	+82-(0)2-6020-2200	www.electrolux.co.kr
10	Core Commodity INTL INC.	SMEs	20 ~ 50	Primary metal product wholesale	USA, Vietnam, Canada	27, Heolleung-ro 569-gil, Gangnam-gu, Seoul, Republic of Korea	+82-(0)2-579-4282	https://coreint.co.kr/98
11	Joelee Corp.	SMEs	Less than 1	Button and similar fastener manufacturing	Vietnam	30, Seolleung-ro 100-gil, Gangnam-gu, Seoul, Republic of Korea	+82-(0)2-569-7411	www.joelee.co.kr

Source) KOIMA (www.koima.or.kr)

Quicklime or desulfurization lime, necessary for further processing, is often sold through national metal & mineral producer associations, and large-scale consumers place orders and participate in bids either individually or through consortiums.

While nickel is largely supplied for industrial uses, the Nickel containing products after processing and manufacturing stages, such as kitchen utensils, rechargeable batteries, jewelries, could reach final customers via retailers or independent stores.

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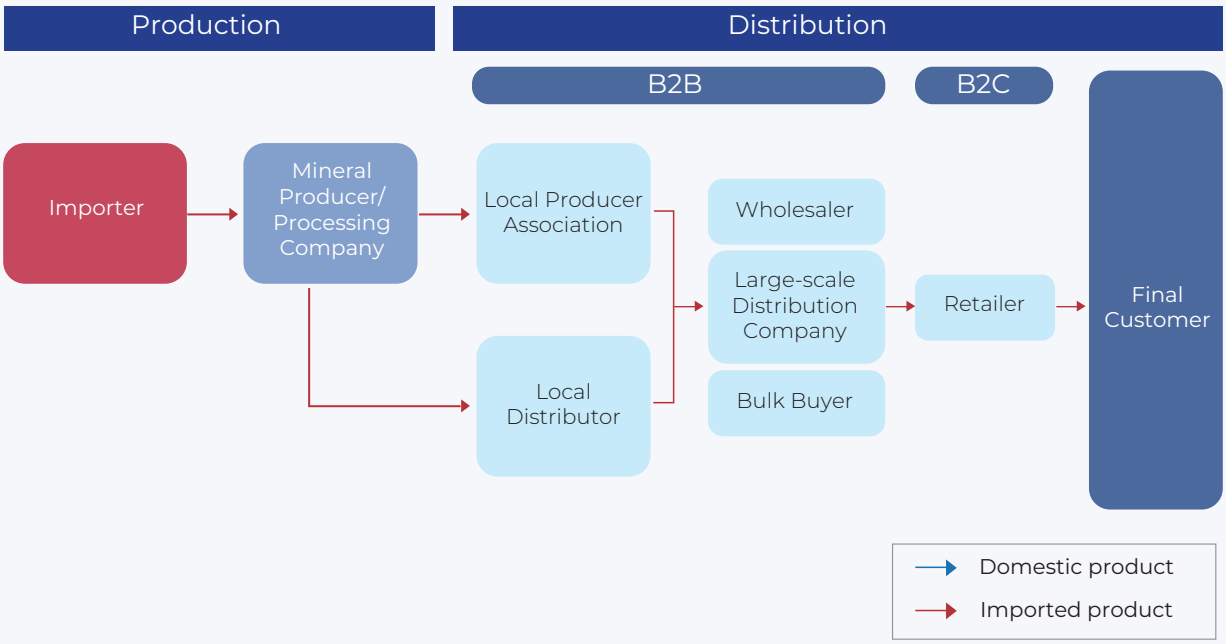
Figure 3. Distribution Channel of Nickel Ores



Source) Ministry of Trade, Industry, and Energy (2016)

Regulations

Import Requirements

Under the laws and regulations of the Republic of Korea, there are no specific import requirements regarding Nickel Ores (260400), thereby allowing importation from all countries worldwide.

Import Process

Nickel Ores and Concentrates can be imported upon the preparation of shipment documents from the exporting country. Based on the shipping documents, after customs clearance process and payment of customs duties, the imported products could be transferred to the importer.

Other Obligations and Cautions

In the case of Nickel Ores, there is no requirement for indicating the origin country, as it is not a designated item for origin labeling. Additionally, there are no peculiarities to note during the import process.

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SWOT Analysis

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Strengths

South Korea's robust infrastructure supports the streamlined supply of nickel ore and nickel-based products, ensuring a smooth process from raw material procurement to end-user delivery. In particular, Korea's battery industry showcases the nickel-based ternary batteries with high performance with the support of the government's R&D initiatives for development and production of advanced technology batteries. Continuous R&D efforts is likely to accomplish even more technology improvements, enabling Korea to position at the forefront of technological advancements in the nickel market. Such market environment and a drive for industrial innovation using nickel is considered a strength factor for CA exporters.

Most importantly, the ROK-Central America Free Trade Agreement (K-CA FTA) would further enhance the appeal by eliminating the tariff on imported Nickel ores and concentrates, providing a competitive edge for potential CA suppliers, and facilitating their entry into the Korean market.

With K-CA FTA, CA exporters are expected to enjoy the full tariff-free status; Nickel ores and concentrates (260400) falls under staging category A. Hence, the tariff for CA countries was immediately eliminated as the agreement went effective.

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Weakness

The ROK market relies 100% on imported nickel ores and concentrates for domestic productions of stainless steel and cathode materials for EV batteries. While nickel is considered a key metal for the transition towards green energy and carbon neutral economy, the side effects of mining nickel, such as air pollution, water contamination and the destruction of habitats, resulted in the advent of environmental regulations and controls even in the ROK market.

Exporters of nickel ore and concentrates must align their practices with the K-ESG guidelines released by South Korea's Ministry of Trade, Industry, and Energy (MOTIE) in December 2021. Even for the domestic production of Nickel, by 2030, the ROK government is planning to make it mandatory to use a certain proportion of recycled Nickel when producing a battery for electric vehicle. Such context is considered a weakness factor of the ROK's import market for nickel for new market entrants in CA.

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Opportunities

Diversifying nickel applications, including its use in advanced materials, alloys, and electronics, can create new markets and revenue streams. As the world embraces green technologies, nickel's role in catalysis, hydrogen production, and fuel cells offers avenues for market expansion. The increasing emphasis on renewable energy sources like wind and solar power is poised to boost nickel demand in these applications as well. Furthermore, with the global economy recovering from economic downturns, a resurgence in industrial activities may lead to increased demand for nickel across various sectors.

The global shift towards electric vehicles has generated an increased demand for nickel in EV batteries, presenting a significant market opportunity. Further advancements in battery technology, particularly in high-performance nickel-based batteries, can open new doors for South Korea's nickel industry. For example, in 2023, Hanyang University disclosed a carbon encapsulation technology designed to concurrently boost the output and lifespan stability of high-nickel lithium NCM. As such, there is ongoing development of high-nickel cathode materials, exceeding 80% nickel content.

In addition, Korea Zinc, a globally prominent refined zinc producer, has disclosed plans to invest 506.3 billion KRW or 386.08 million USD in establishing a cutting-edge nickel refinery in Ulju-gun, Korea. It is the world's first all-in-one nickel refinery with the capacity to process diverse raw materials, with construction scheduled to end in May 2025 and mass production expected in early 2026.

The projected annual production capacity of the nickel refinery is set at 42,600 tons (based on nickel metal content). When integrated with the annual output of Korea Zinc's subsidiary, KEMCO, specializing in nickel sulfate production, at 22,300 tons (based on nickel metal content), the aggregate capacity is poised to reach approximately 65,000 tons. Should the outlined plan progress as envisioned, Korea Zinc Group is positioned to boast the world's second-largest nickel sulfate production capacity, surpassed only by China. Consequently, this venture will likely further enhance the resilience and competitiveness of the domestic nickel sector.

Countries with ample nickel resources and competitive production capabilities could capitalize by offering their products to meet the demand in the Republic of Korea.

Threats

While South Korea is a leading player in nickel-based ternary battery technology, the heavy dependence on import poses challenges especially when increasing battery cathode material production requires higher precursor material imports. Although Korean companies contribute to 20% of global battery cathode material production, 79% of domestic demand for precursor materials relies on imports, with over 90% sourced from New Caledonia. For instance, when rapidly growing demand for nickel in electric car batteries is met with supply chain uncertainties influenced by factors like the COVID-19 pandemic and the Russia-Ukraine conflict, the price of nickel ore spikes, which is considered a threat factor.

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Business Case

ROK Market Insights

- High dependence on imported nickel ores and concentrates for relevant domestic industries
- Growing demand of nickel ore and concentrates in ROK battery industry

Niche

- To partner with reputed industry-specific associations to build a business with major nickel ores consuming companies

Cultural Adaptation

- Understand Korean's main usage of nickel ores and concentrates
- Understand Korean final consumers' – mostly battery industry – customary practice when dealing business
- Understand Korean consumers' quality and price standard for nonferrous metal

Strategy Snapshot

- To promote long-term sustainable export of Central American countries' nickel ores and concentrates to ROK market, it is requisite to reinforce cooperative framework between ROK and resource possessing CA countries in a form of Economic Framework and/or Core Mineral Security Partnership.
- To enhance the visibility and exportability of Central American countries' nickel ores and concentrates to ROK market, it is recommended to use and participate in the various B2B promotional campaigns hosted in ROK on the preferential basis.
- To foster a successful and sustainable export of Central American countries' nickel ores and concentrates to ROK market, it is recommended to partner with dependable ROK importers who has long-term relationship with ROK mineral processing companies and final user companies.

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