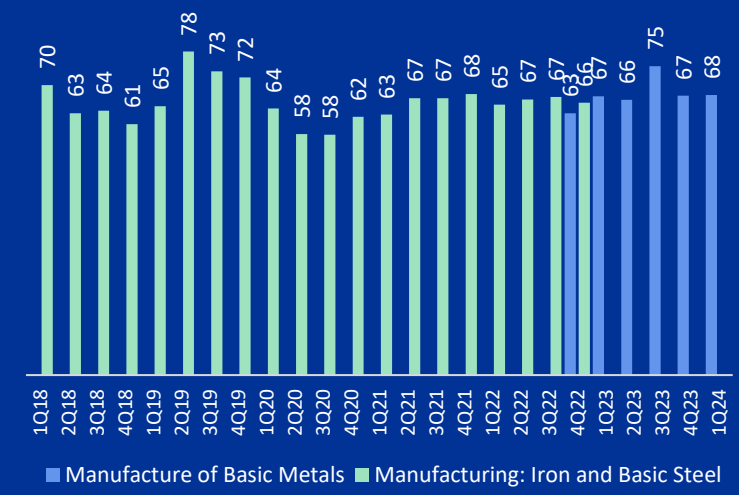
Indonesia Basic Metals Industry

Permata Institute for Economic Research
May 2024

Basic Metals Manufacturing GDP Growth (%yoy)

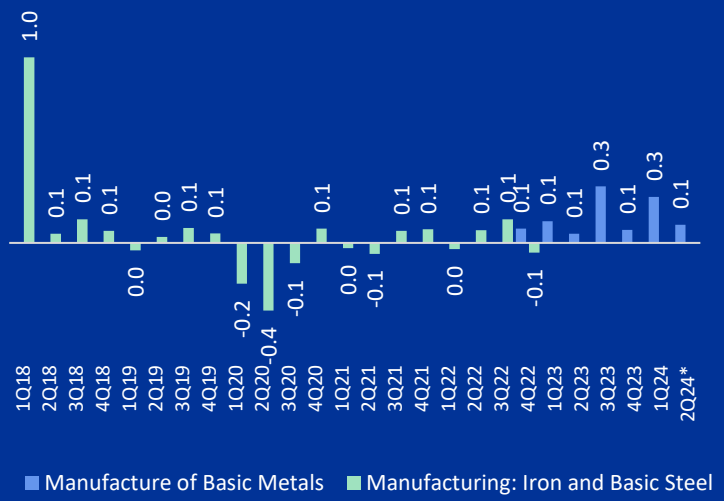
Source: Statistics Indonesia, Permata Institute for Economic Research

Capacity Utilization (%)



Source: Bank Indonesia, Permata Institute for Economic Research

Business Activity (NWB)



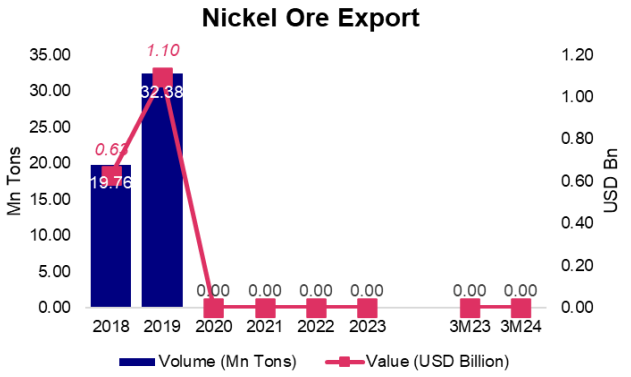
Source: Bank Indonesia, Permata Institute for Economic Research

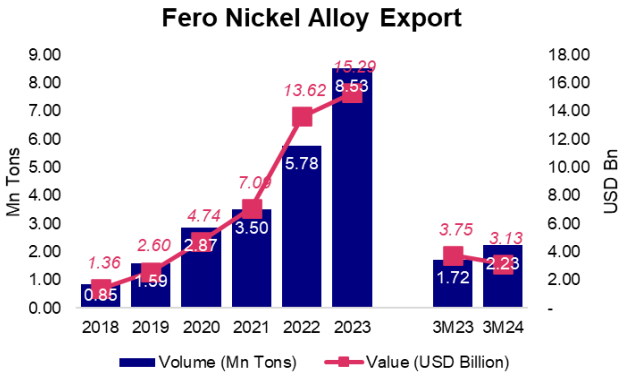
Latest Performance

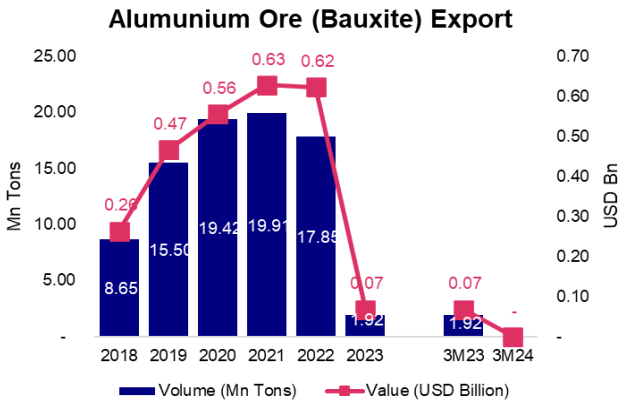
Indonesia still experienced solid growth in the basic metals industry following the implementation of downstreaming policy. The basic metals industry's GDP growth in 1Q24 was recorded at 16.6%yoy, surpassing the manufacturing growth of 4.1%yoy and Indonesia's GDP growth of 5.1%yoy. However, the basic metals industry growth in 1Q24 slowed down compared to 4Q23 of 18.82%yoy. As a result, basic metals industry contributions to the Indonesia GDP slightly decreased from 0.21% in 4Q23, the highest level since 2010, to 0.18% in 1Q24. This increase in contribution resulted as the Indonesian government implemented the downstream policy of minerals in Indonesia through an export ban on nickel ore and forced mining companies to build their smelter in Indonesia in 2020. The policy was then followed by export-ban on bauxite in the first-half of 2023. Consequently, Indonesia still enjoyed robust growth in the basic metals industry from mid-2020 until 2024. These also amplify the importance of a consistent approach on the export ban to Indonesia economic growth.

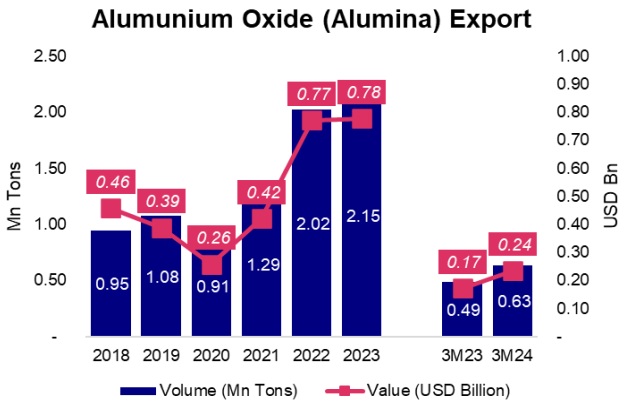
In 1Q24, capacity utilization of the basic metals industry remained stable. Capacity utilization in 1Q24 slightly advanced to 68 compared to 67 in the previous quarter. The capacity utilization of the basic metals industry has remained stable in the last four years. However, from 2019, capacity utilization tended to be declining trend before it picked up in 4Q20 and achieved its highest level on 3Q23. One of the main reasons was the completion of some nickel and other minerals smelters during 2019 to 2020 as part of the national strategic project to develop the minerals downstream industry.

On the other hand, the business activity in the basic metals industry has fluctuated over the years before consistently above 0 level since 2022. The Net Weighted Balance (NWB) of business activity manufacturing basic metals in 1Q24 was 0.03 compared to 0.1 in 4Q23. Furthermore, the Prompt Manufacturing Index also advancing further in 1Q24, reaching 56 from 51 in a quarter before. However, the expectation of both business activity and PMI in 2Q24 marginally declined as Eid-Fitr holiday could lowering the effective working days.







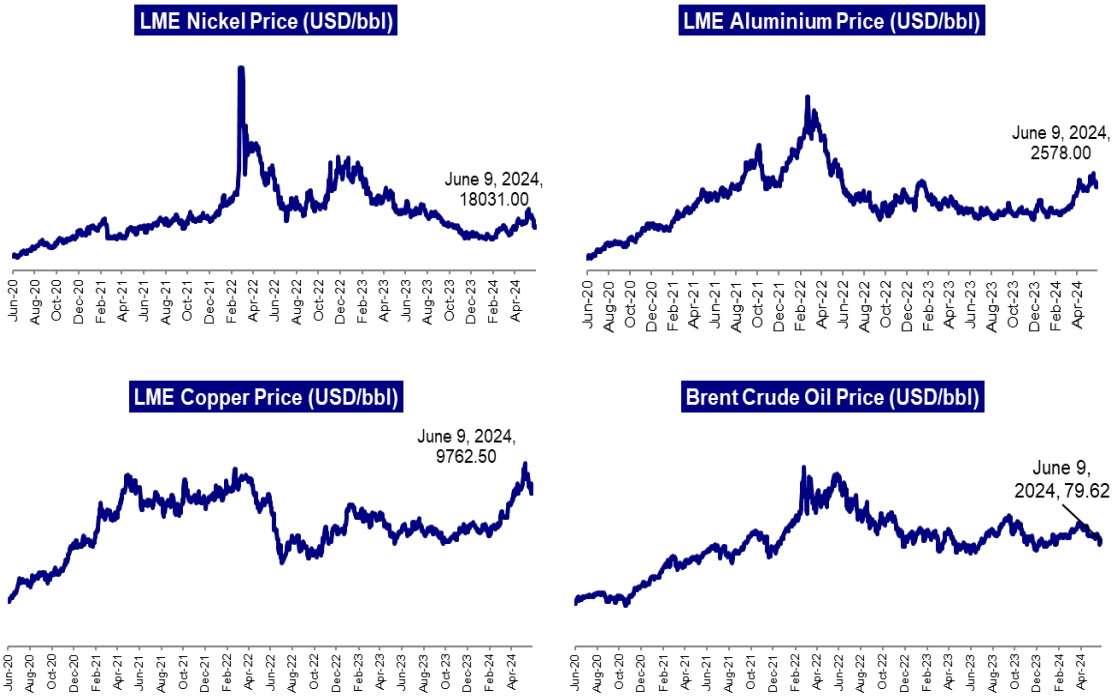


Source: Statistics Indonesia, Permata Institute for Economic Research

The downstream policy also influenced Indonesia Basic Metals Industry export. It also should be noted that basic metals comprise various products, and this report will focus primarily on nickel and bauxite products. Looking at the nickel industry, the export of nickel ores slumped from 32.28 million tons in 2019 to practically zero after the export ban took effect in 2020. On the other hand, the export of ferro-nickel, one of the leading products of nickel downstream policy, skyrocketed during the same period. The value of Ferronickel alloy export in 2019 recorded USD2.60 billion, while it surged to USD13.62 billion in 2022. In 1Q24, the ferro nickel export amounted to 2.23 million tons or rose 29.9%yoy, while the export value was USD3.13 billion or dropped by 16.7%yoy, as started to normalize.

Bauxite industry also experienced similar pattern when the Government of Indonesia imposed bauxite export ban in June 2023. Indonesia's bauxite export plunged from 17.85 million tons in 2022 to 1.92 million tons in 2023. On the contrary, the aluminium oxide (alumina) export already jumped in 2022 as the several smelters has been built to anticipate export ban that would be implemented. In 2022, alumina export amounted to 2.02 million tons or surged 56.6%yoy, then it slowed down to 6.4%yoy in 2023 as there is no additional capacity of domestic alumina smelter to increase the production. In 1Q24, the alumina export volume jumped 30%yoy as new smelters come online, while the value rose by 36.5%yoy to USD0.24 billion.

Commodity prices were normalized in 2023 after experiencing boom in 2024, however, in 2024, several commodity prices started to rebound in 2024 as demand expectation for non-ferrous metals for energy transition increased coupled with supply constraint. Several minerals for energy transition, such as nickel, copper, and aluminium enjoyed price hike in the first half of 2024. For example, by 9 June 2024, the global price of alumunium and copper hike by 8.6%ytd and 14.1%ytd or 13.7%yoy and 16.6%yoy, respectively. However, for nickel price rose 8.6%ytd, but still below the 2023's price level, as the oversupply persist.

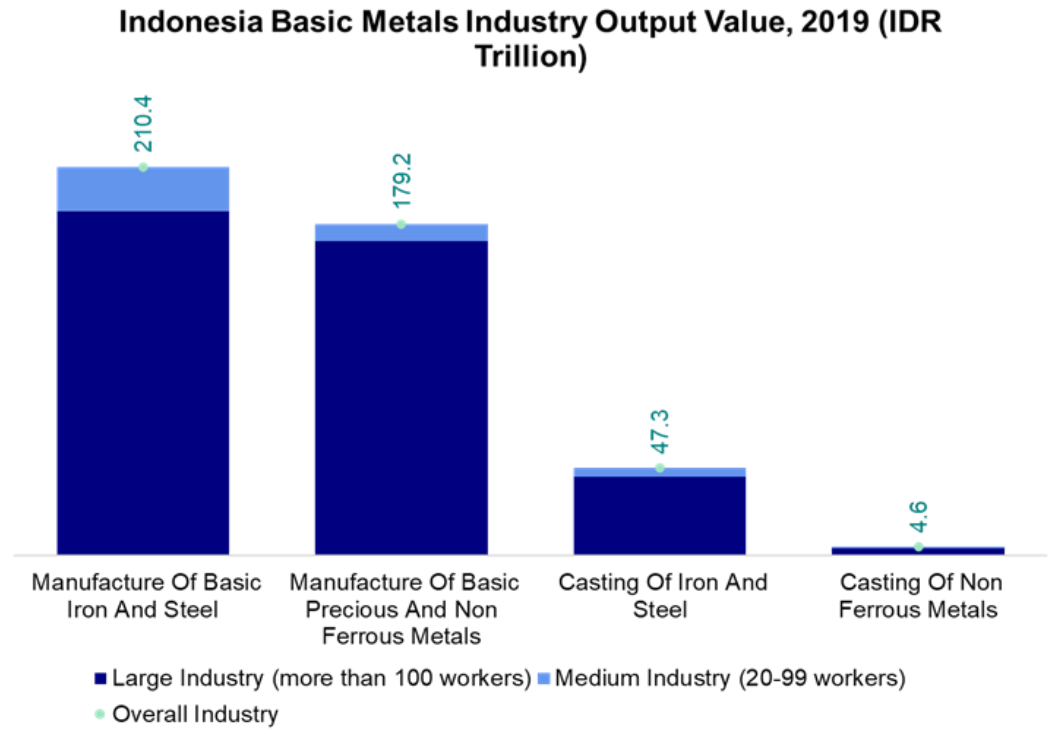


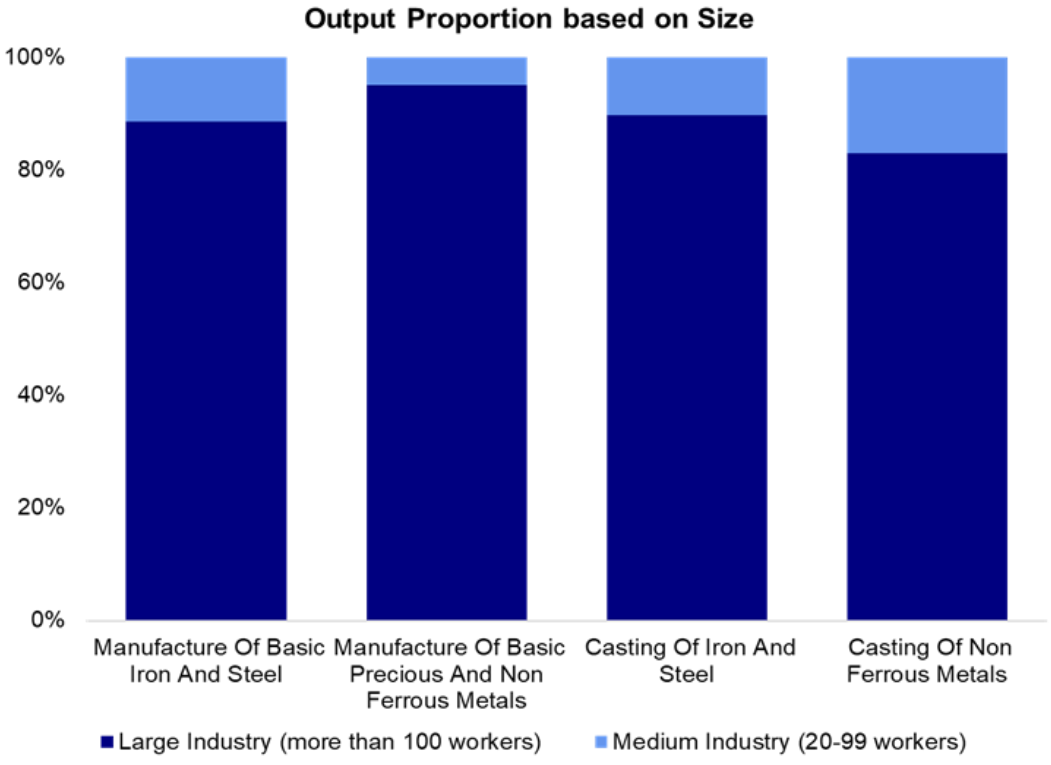
Source: Bloomberg, Permata Institute for Economic Research

Industry Landscape

The Manufacture of Basic Iron and Steel, as well as the Manufacture of Basic Precious and Non-ferrous Metals, were the most significant sub-sectors of the Basic Metals industry. According to Statistics Indonesia, the output of the basic iron and steel industry accounted for 57.7% of the total production of Indonesia's Basic Metals Industry in 2019. The Basic Precious and Non-ferrous Metal industry's output in 2019 recorded Rp.179.2 trillion, contributing 34.2% of the total output. The other two subsectors, Casting Iron and Steel and Casting of Non-Ferrous Metals, only accounted for 7.8% and 0.6% of the total output, respectively. However, as stated before, this report will focus on the non-ferrous metals industry.

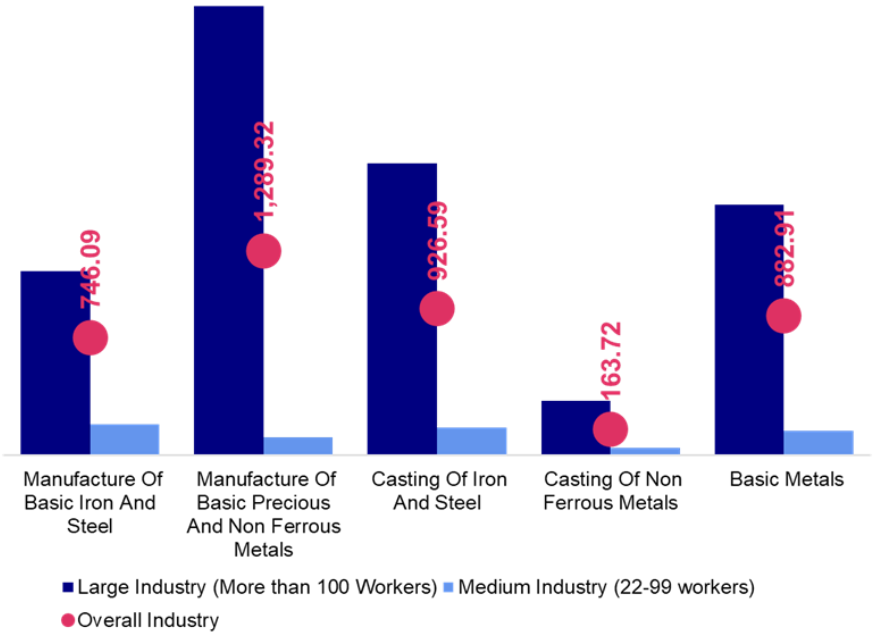
Most of the output of the Basic Metals Industry is produced by Large Industries. In the Large and Medium Manufacturing Industry Statistics report, most of the production of the Basic Metals Industry is produced by Large Industries (having a total workforce of more than 100 people). For example, 95.0% for the Basic Precious and Non-Ferrous Metals Industry and 82.9% for the Non-Ferrous Metal Casting Industry.



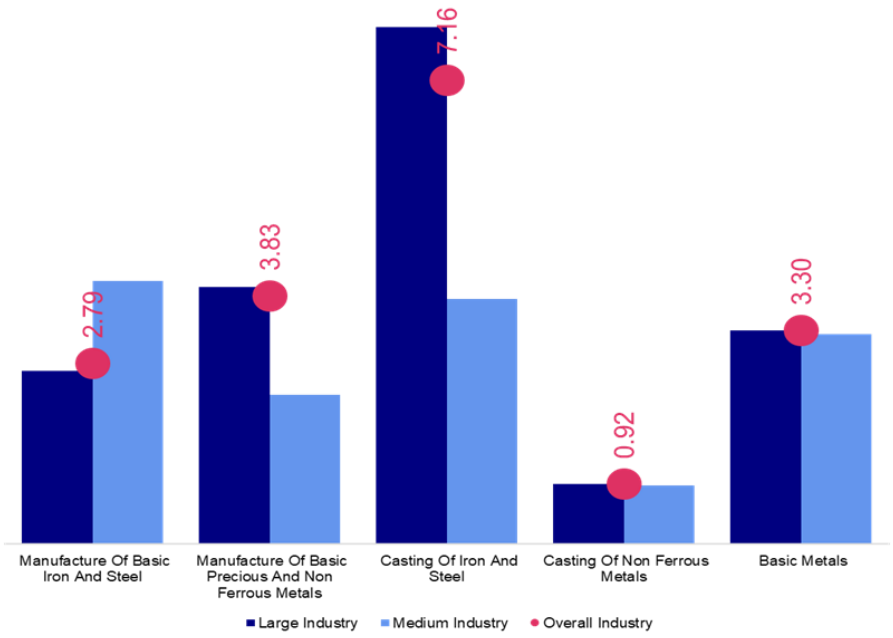


Source: Statitsics Indonesia, Permata Institute for Economic Research

Average Output per Company in a year by Sub-Sector (IDR Trillion)



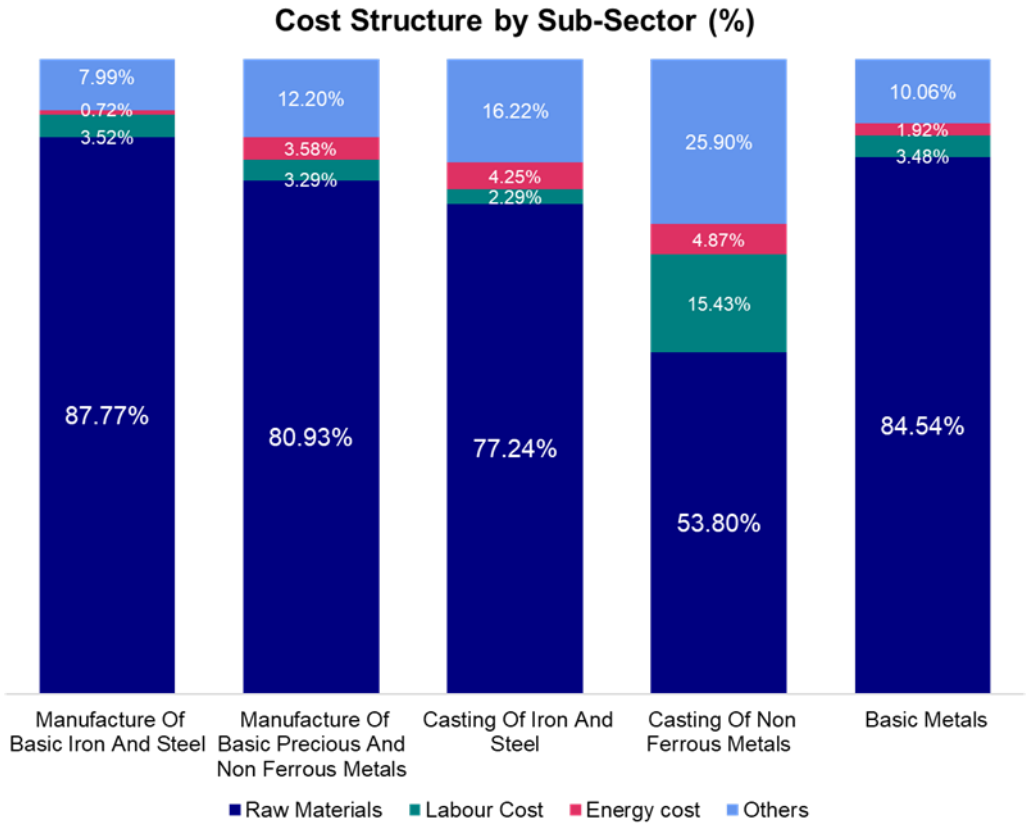
Average Output per Worker in a year by subsector (IDR Billion)



Source: Statitsics Indonesia, Permata Institute for Economic Research

In terms of output value per company, the sub-sector of non-ferrous metals with the highest value is the Manufacture of Basic Precious and Non-Ferrous Metals, followed by the Casting of Non-Ferrous Metals with the value of IDR1.289 trillion and IDR163.72 trillion, respectively. Meanwhile, the output value per worker in the Manufacture of Basic Precious and Non-Ferrous Metals and the Casting of Non-Ferrous Metals sub-sectors were IDR3.83 billion per year and IDR0.92 billion per year.

Raw material costs dominated the production costs of the Basic Metals industry. According to the statistical data of the Large and Medium Manufacturing Industry 2019, the proportion of raw material costs to total production costs for the Basic Metal Industry was recorded between 53.8% - 87.7%. In more detail, raw materials costs accounted for 80.9% and 53.8% of non-ferrous metal manufacturing and non-ferrous metal casting industry. Thus, movements in raw material prices, especially the prices of mineral commodities such as copper, nickel, and gold would put pressure on the cost of firms in the basic metals industry.



Source: Statitsics Indonesia, Permata Institute for Economic Research

The Basic Metals Non-Iron and Steel industry primarily sourced their raw materials from the domestic market. Referring to the 2016 Indonesian Input-Output table data, gold ores, copper ores, nickel ores, and tin ores are the main inputs for the Indonesian basic metals industry. Of those four materials, gold ores are the most significant raw materials, contributing 42.6% of the basic metals industry's input, followed by copper ore 15.0% and nickel ore 11.8%. Even though the non-ferrous metal industry primarily relied on domestic sourced material, it still has a risk from the weakening exchange rate. Looking at the origin mapping of the ores, including nickel and bauxite, the input of those industries is also mainly from the domestic market, except for the prime mover machine (starting engine). Thus, the Basic Metals, Non-Iron, and Steel industries still have to be aware of the Rupiah weakening that could affect their raw materials, albeit moderate.

Input Origin by Industry	Input Origin Mapping of Basic Metals Non Iron and Steel Industry								
	Bauxite Ores			Nickel Ores			Basic Metals Non Iron and Steel		
	Proportion of Total Raw Material Input (%)	%Domestic	%Import	Proportion of Total Raw Material Input (%)	%Domestic	%Import	Proportion of Total Raw Material Input (%)	%Domestic	%Import
Other mining and quarrying services	50.2%	100%	0%	22.0%	100%	0%	0.0%	NA	NA
Land Transport Services Apart from Rail Transport	16.6%	100%	0%	13.2%	99%	1%	1.8%	100%	0%
Basic Chemistry Except Fertilizer	11.8%	76%	*24%*	3.2%	69%	*31%*	1.8%	61%	*39%*
Other Buildings	3.1%	100%	0%	0.3%	100%	0%	0.0%	NA	NA
Trade other than Cars and Motorbikes	2.4%	100%	0%	6.1%	100%	0%	1.1%	100%	0%
Oil and Gas Refinery Products	2.2%	73%	*27%*	8.8%	72%	*28%*	1.1%	64%	*36%*
Banking Financial Services	1.8%	97%	3%	2.1%	97%	3%	1.7%	97%	3%
Starting Engine	1.4%	12%	88%	6.0%	9%	91%	0.0%	13%	87%
Rental Services and Business Support Services	1.2%	80%	*20%*	10.1%	83%	17%	0.9%	92%	8%
Other Financial Institution Services	1.1%	99%	1%	1.5%	99%	1%	0.3%	99%	1%
Other chemical items	0.1%	50%	*50%*	5.3%	50%	*50%*	0.1%	51%	*49%*
Real Estate Services	0.6%	97%	3%	2.8%	97%	3%	0.7%	97%	3%
Other machines and equipment	0.5%	66%	*34%*	1.4%	66%	*34%*	0.1%	66%	*34%*
Residential and Non-Residential Buildings	0.9%	100%	0%	1.3%	100%	0%	0.1%	100%	0%
Gold Ore	0.0%	NA	NA	0.0%	NA	NA	42.6%	100%	0%
Copper Ore	0.0%	NA	NA	0.0%	NA	NA	15.0%	100%	0%
Nickel Ore	0.0%	NA	NA	0.3%	100%	0%	11.8%	100%	0%
Tin Ore	0.0%	NA	NA	0.0%	NA	NA	6.0%	100%	0%
Air Transport Services	0.8%	93%	7%	0.5%	94%	6%	2.6%	96%	4%
Other Metal Mining Goods	0.0%	NA	NA	0.0%	NA	NA	2.3%	98%	2%
Others	5.1%	NA	NA	15.2%	NA	NA	10.1%	NA	NA
Total	**100%**	**94.4%**	**5.6%**	**100%**	**84.7%**	**15.3%**	**100%**	**96.8%**	**3.2%**

Output Users by Industry	Bauxite Ores			Nickel Ores			Basic Metals Non Iron and Steel		
	Share (%)	Domestic Industry Origin Output (%)	Output of Foreign Industry Origin (%)	Share (%)	Domestic Industry Origin Output (%)	Output of Foreign Industry Origin (%)	Share (%)	Domestic Industry Origin Output (%)	Output of Foreign Industry Origin (%)
Intermediate Consumption	**100.0%**	**99%**	**0.6%**	**100.0%**	**100%**	**0.0%**	**60.1%**	**45%**	**54.9%**
Non-ferrous Base Metals	51.1%	99%	0.6%	82.2%	100%	0.0%	0.0%	98%	1.7%
Metal Building Materials	30.4%	99%	0.6%	0.2%	100%	0.0%	1.9%	62%	*38.2%*
Basic Iron and Steel	17.9%	99%	0.6%	16.8%	100%	0.0%	0.1%	59%	*41.3%*
Jewellery	0.0%	NA	NA	0.0%	NA	NA	17.7%	1%	99.1%
Residential and Non-Residential	0.0%	NA	NA	0.0%	NA	NA	10.3%	56%	*43.9%*
Other Electrical Equipment	0.0%	NA	NA	0.0%	NA	NA	6.7%	80%	*20.2%*
Other Buildings	0.0%	NA	NA	0.0%	NA	NA	5.2%	62%	*38.2%*
Other Metal Items	0.0%	NA	NA	0.0%	NA	NA	3.7%	84%	16.1%
Electronic Goods, Communications and	0.0%	NA	NA	0.0%	NA	NA	2.1%	0%	99.6%
Electrical Machines and Equipment	0.0%	NA	NA	0.0%	NA	NA	2.0%	77%	*23.2%*
Batteries And Batteries	0.0%	NA	NA	0.0%	NA	NA	1.3%	62%	*38.2%*
Electrical Appliances For Households	0.0%	NA	NA	0.0%	NA	NA	1.1%	96%	4.3%
Measuring Instruments, Photography,	0.0%	NA	NA	0.0%	NA	NA	0.9%	37%	62.7%
Other	0.6%	NA	NA	0.7%	NA	NA	6.9%	NA	NA
Final Consumption	**0.0%**	**#DIV/0!**	**#DIV/0!**	**0.0%**	**#DIV/0!**	**#DIV/0!**	**39.9%**	**100%**	**0.0%**
Household Consumption	0.0%	NA	NA	0.0%	NA	NA	0.0%	NA	NA
LNPRT Consumption	0.0%	NA	NA	0.0%	NA	NA	0.0%	NA	NA
Government Consumption	0.0%	NA	NA	0.0%	NA	NA	0.0%	NA	NA
Gross Fixed Capital Formation	0.0%	NA	NA	0.0%	NA	NA	0.0%	NA	NA
Inventory Change	0.0%	NA	NA	0.0%	NA	NA	0.0%	61%	*38.7%*
Exports of Goods (F.o.b)	0.0%	NA	NA	0.0%	NA	NA	39.9%	100%	0.0%
Services Exports	0.0%	NA	NA	0.0%	NA	NA	0.0%	NA	NA

Source: Statitsics Indonesia, Permata Institute for Economic Research

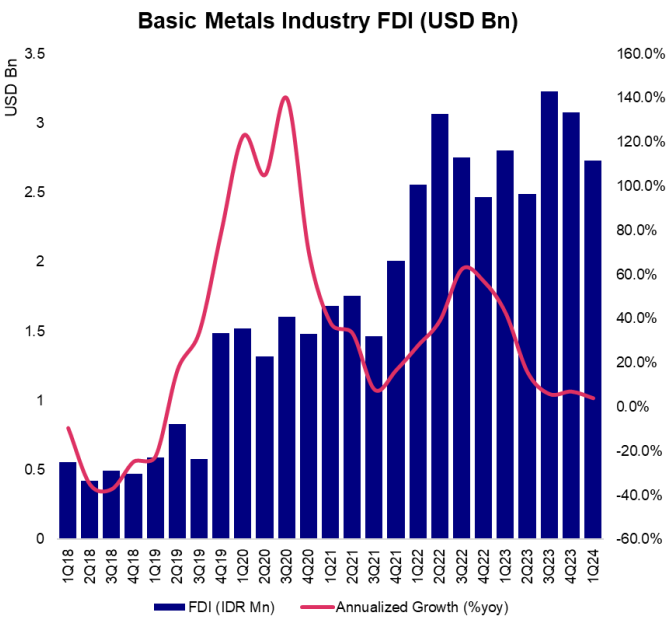
Most Basic Metals Non-Iron and Steel industry output is consumed domestically. Based on the Indonesian Input Output Table 2016, 60.1% of Basic Metals Non-Iron and Steel Output were consumed domestically, while 39.9% were exported. In more detail, the jewelry sector consumes around 17.7% of the output from the basic metals industry. It is consistent with the previous input table, as gold ores are the most prominent input for the basic metals non-iron and steel. Furthermore, 10.3% of the Non-Iron and Steel Basic Metals Industry output was used for residential and non-residential buildings. Thus, the development of the property and real estate sector in Indonesia would also influence the outcome of the Basic Metals Non-Iron and Steel Industry. Unfortunately, this Input and Output employed the 2016 data. Therefore, they cannot capture the latest developments in the basic metals industry that rely on the recent nickel downstream policy.

Outlook

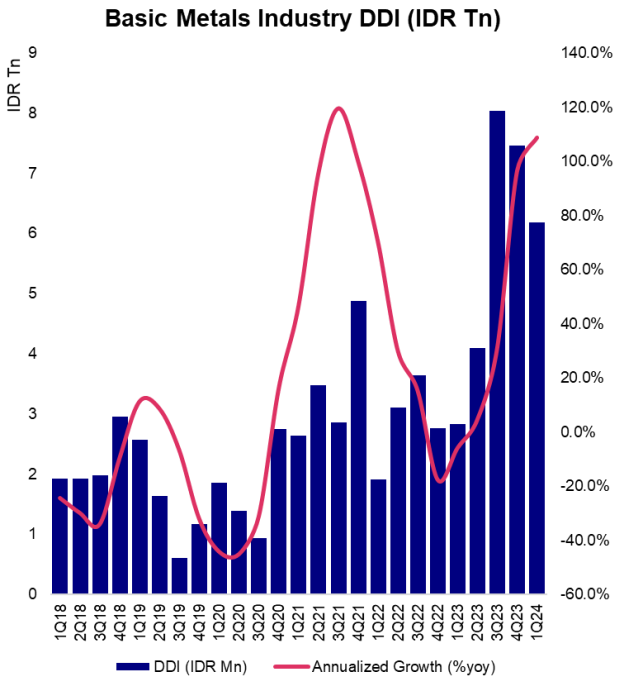
Several regions with large mineral deposits have become foreign and domestic investment destinations for the base metals sector in recent years. Several regions that have become foreign direct investment destinations in the last five years come from regions that have relatively large nickel reserves located in Sulawesi and Maluku islands. The largest provinces receiving investment in base metals in the last five years including Central Sulawesi, North Maluku and Southeast Sulawesi.Total foreign investment in the base metal sector in these three provinces reached USD35.4 billion in the last five years.

On the other hand, the main destinations for domestic investment in Basic Metals Industry, namely West Kalimantan, South-East Sulawesi and West Nusa Tenggara, have different mineral reserve. For example West Kalimantan has bauxite reserve, South-East Sulawesi with nickel, and West Nusa Tenggara has one of the highest deposit of copper in Indonesia. This shows that while foreign investment concentrated in nickel processing industry, the other mineral processing were mainly driven by the domestic investment. In the last five years, total domestic invesment in those three provinces amounted to IDR31.2 trillion.

FDI by Province and Municipality	Last 5Y (USD Bn)
Central Sulawesi	**17.20**
Morowali Regency	14.18
North Morowali Regency	2.97
Palu City	0.05
North Maluku	**14.15**
Central Halmahera Regency	9.84
South Halmahera Regency	4.28
East Halmahera Regency	0.03
South-East Sulawesi	**4.06**
Kendari Regency	3.60
South Konawe Regency	0.20
Konawe Regency	0.15
East Java	**1.72**
Gresik Regency	1.19
Sidoarjo Regency	0.49
Mojokerto Regency	0.03
Riau Island	**1.37**
Bintan Regency	1.29
Batam City	0.09



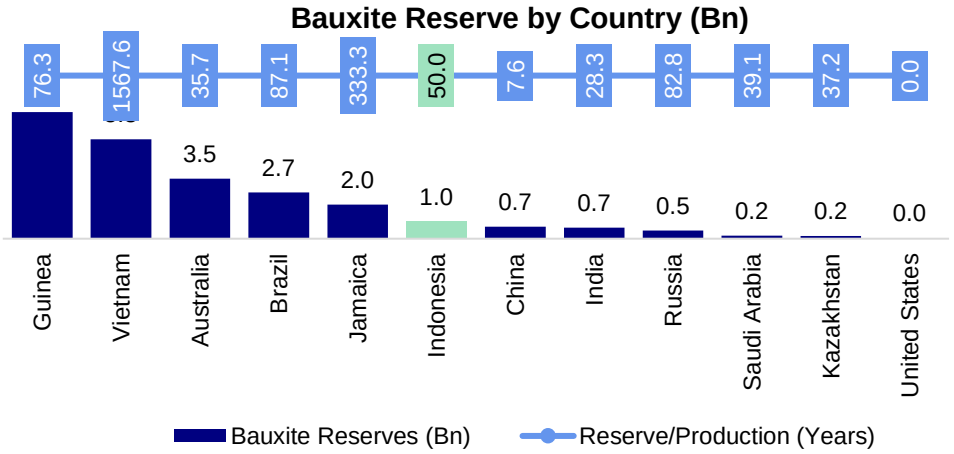
DDI by Province and Municipality	Last 5Y (IDR Tn)
West Kalimantan	**12.35**
Mempawah Regency	12.11
Sanggau Regency	0.14
Ketapang Regency	0.07
South-east Sulawesi	**10.27**
Kolaka Regency	6.31
Bombana Regency	1.44
North Kolaka Regency	1.20
West Nusa Tenggara	**8.53**
West Sumbawa Regency	8.53
West Java	**6.74**
Bekasi Regency	5.37
Karawang Regency	0.64
Purwakarta Regency	0.50
East Java	**6.54**
Surabaya City	4.61
Gresik Regency	0.62
Mojokerto Regency	0.59



Source: Ministry of Investment, Permata Institute for Economic Research

Indonesia is well-positioned in reaping the nickel demand acceleration going forward. Indonesia has the largest nickel reserves in the world. According to USGS data, Indonesia's nickel reserves in 2022 reached 21 million tons of nickel, accounting for 22% of global nickel reserves. The level of dependence of other countries on Indonesia's nickel is also quite large, considering that before the export ban, Indonesia was the largest nickel ore exporter in the world. After the implementation of the nickel export ban in 2020, foreign investment in the nickel refining sector increased rapidly, indicating that nickel ore sources from other countries did not meet the needs of global nickel metal production.

Meanwhile, Indonesia's bauxite reserves are relatively modest, ranking sixth in the world. According to the USGS, Indonesia's bauxite reserves in 2023 amounted to 1 billion tons, making it the sixth largest globally, following Guinea (7.4 billion tons), Vietnam (5.8 billion tons), Australia (3.5 billion tons), Brazil (2.7 billion tons), and Jamaica (2.0 billion tons). These 1 billion tons of reserves in Indonesia, when divided by the current production rate, are equivalent to 50 years of production.

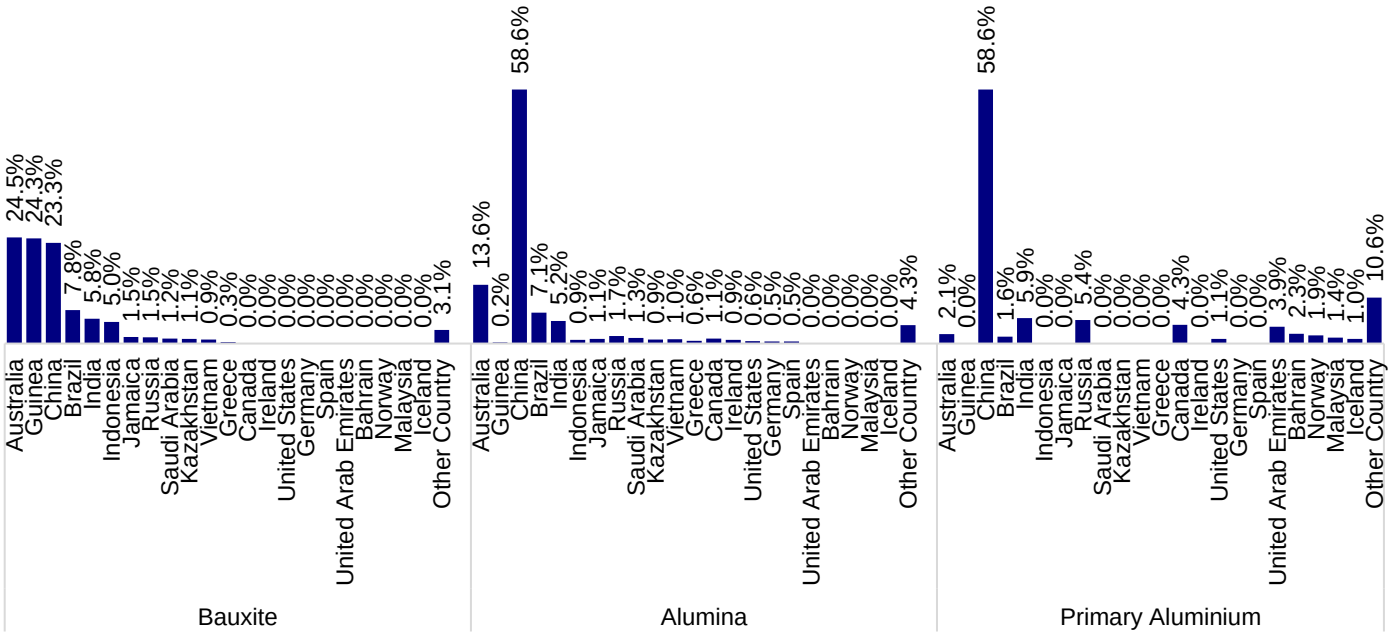


Source: USGS, Permata Institute for Economic Research

From a production perspective, Indonesia has not yet dominated the global aluminum market, particularly in terms of finished products. Indonesia has a modest dominance in bauxite production, accounting for 5% of global bauxite production in 2023, ranking below Australia, Guinea, China, and Brazil. Meanwhile, the production of alumina and primary aluminum metal is predominantly led by China, which controls nearly 60% of global production for both segments.

Indonesia has the potential to increase its production of processed aluminum in the future, in line with its downstream industry development program. In 2023, Indonesia implemented a bauxite export ban to accelerate investment in the processing and refining of bauxite within the country. This export ban ensures a more stable supply of raw materials for the domestic processing and refining industry in order to attract more investment bauxite refining. However, regarding attracting investment in bauxite refining, the export ban is unlikely to have a significant impact on the global bauxite market, as many other countries can serve as alternatives if Indonesia halts bauxite exports. In contrast, Indonesia's nickel reserves are the largest in the world, and few countries can replace Indonesia as a supplier. Consequently, investment in nickel refining in Indonesia surged after the country imposed an export ban on nickel ore, as Indonesia's nickel-consuming countries, especially China, have limited alternatives for obtaining nickel ore of comparable quality to that of Indonesia.

Production Share by Product and Country, 2023



Source: USGS, Permata Institute for Economic Research

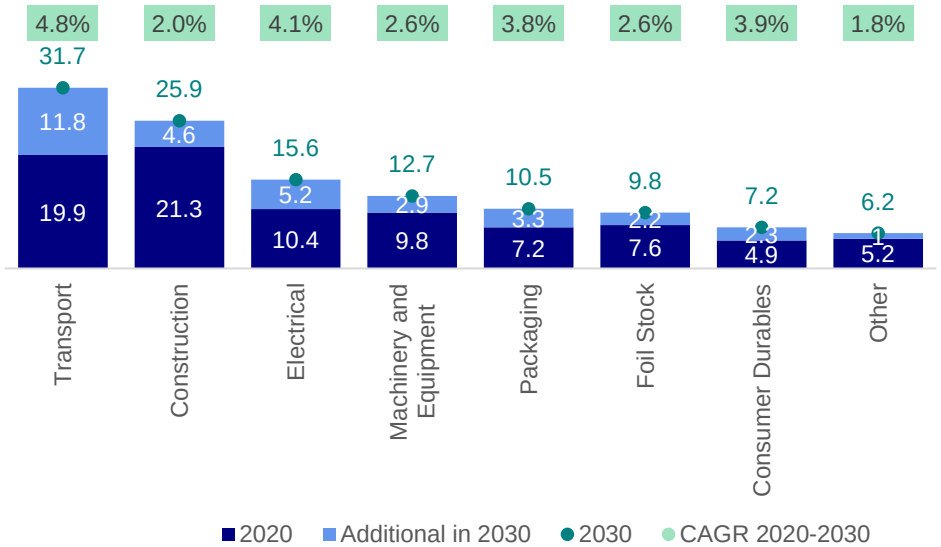
Indonesia's capacity for bauxite processing and refining is set to increase significantly in the future, aligned with the ongoing construction of smelters. As of early 2024, there are 11 bauxite processing and refining smelters under construction, with 4 of them already completed. If all the smelter projects are realized, Indonesia will have the capacity to refine 11.6 million tons of bauxite into alumina, with a bauxite ore absorption capacity of 33.5 million tons per year.

Smelter	Stand Alone/ Integrated	Bauxite Input Intake (Mn Tons)	Product	Output (TPY)	Progress
PT Indonesia Chemical Alumina	SA	1.0	CGA	0.30	100.0
PT Well Harvest Winning Alumina Refinery	SA	3.6	SGA	1.00	100.0
PT Bintan Alumina Indonesia	SA	1.0	SGA	0.35	100.0
PT Well Harvest Winning Alumina Refinery (Expansion)	SA	4.0	SGA	1.00	100.0
PT Dinamika Sejahtera Mandiri	INT	5.2	SGA	2.00	58.6
PT Laman Mining	INT	2.9	SGA	1.00	32.4
PT Kalbar Bumi Perkasa	INT	4.2	SGA	1.50	37.3
PT Parenggean Makmur Sejahtera	INT	3.0	CGA	0.99	58.1
PT Persada Pratama Cemerlang	INT	2.5	SGA	1.00	52.6
PT Quality Sukses Sejahtera	INT	3.5	SGA	1.50	65.7
PT Sumber Bumi Marau	INT	2.6	SGA	1.00	50.1
TOTAL		**33.5**		**11.6**	

Source: MEMR, Permata Institute for Economic Research

Looking ahead, global demand for aluminum remains promising, driven by the increasing need to meet decarbonization policies and sustainable global economic growth. Key factors contributing to the rise in aluminum demand include the use of renewable energy and electric vehicles. Additionally, the sustainable aspects of packaging and construction are expected to further boost demand. According to CRU, a commodity research institution, aluminum demand from 2020 to 2030 is projected to grow at an average annual rate of 3.3%, with the highest demand coming from the Transportation, Construction, and Electrical sectors, which together will account for 61% of the total global demand of 119.6 million tons per year by 2030.

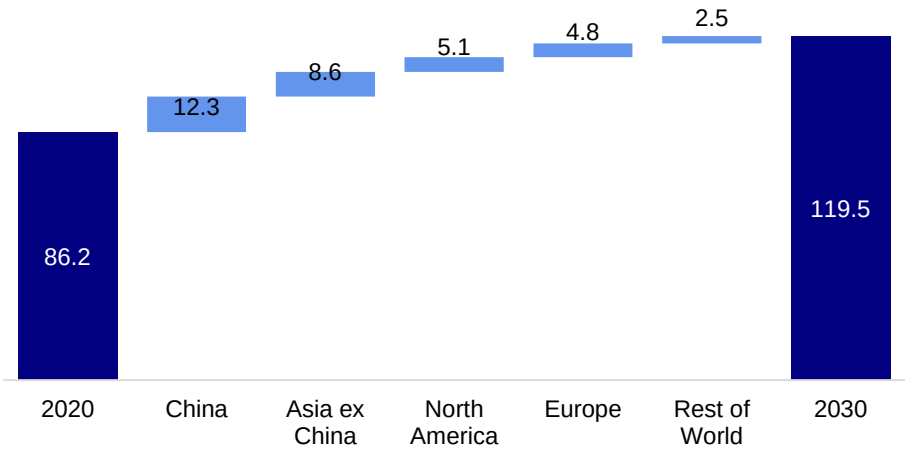
Semi-finished Aluminium Demand Projection 2020 to 2030 (Mn Tons)



Source: CRU

Moreover, a significant portion of future aluminum demand will come from Asian countries, presenting an opportunity for Indonesia to meet these needs. By 2030, demand from Asian countries is expected to increase by 20.9 million tons, accounting for 62.8% of the total additional global demand. Most of this demand will come from China, which is anticipated to see an increase of 12.3 million tons, followed by India with 3.0 million tons, the Middle East with 1.6 million tons, and Japan with 0.6 million tons by 2030.

Additional Aluminium Demand by Region (Mn Tons)



Source: CRU

Aluminium is predicted to experience a slight correction from the current spot price. As of June 11, 2024, aluminum prices were recorded at USD 2,534 per ton, reflecting a 7.3% year-to-date increase. This aligns with expectations of a narrowing production surplus in 2024, driven by improved demand and a slowdown in Chinese production. However, the average prices for 2024 and 2025 are anticipated to be slightly below the current spot price, in line with the expected addition of new smelter capacities from Indonesia, particularly Adaro and Nashan Aluminium, which will add up to 1 million tons. The Bloomberg Consensus Forecast as of June 11, 2024, projects aluminum prices at USD 2,358 per ton for 2024 and USD 2,500 per ton for 2025.

Similarly, the future price of nickel is expected to remain steady at current spot levels. As of June 11, 2024, the base metal nickel was priced at USD 17,818 per ton, up 6.3% year-to-date from the end of 2023. The price increase is driven by expectations of rising demand from stainless steel production and growing demand for battery raw materials for electric vehicles. However, the expansion of nickel production capacity from Indonesia is likely to temper future price increases, as reflected in the Bloomberg consensus forecast, which predicts prices slightly below the current spot level at USD 17,327 per ton for 2024 and USD 17,650 per ton for 2025. Meanwhile, futures market traders tend to be bullish, with futures prices for delivery in 2025 and 2026 recorded higher than the current spot price, at USD 18,579 and USD 19,266 per ton, respectively.

Indicators	Spot	Futures/Forecast	Q2 24	Q3 24	Q4 24	Q1 25	2024	2025	2026	2027
Nickel $/mt	17818	Futures	18066	17798	18045	18287	17685	18579	19266	19950
		Forecast	17225	17209	17393	17700	17327	17650	18150	17637
Aluminum $/mt	2534	Futures	2505	2525	2568	2602	2461	2632	2685	2720
		Forecast	2300	2365	2450	2550	2358	2500	2600	2623

Source: Bloomberg

Thank you!

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