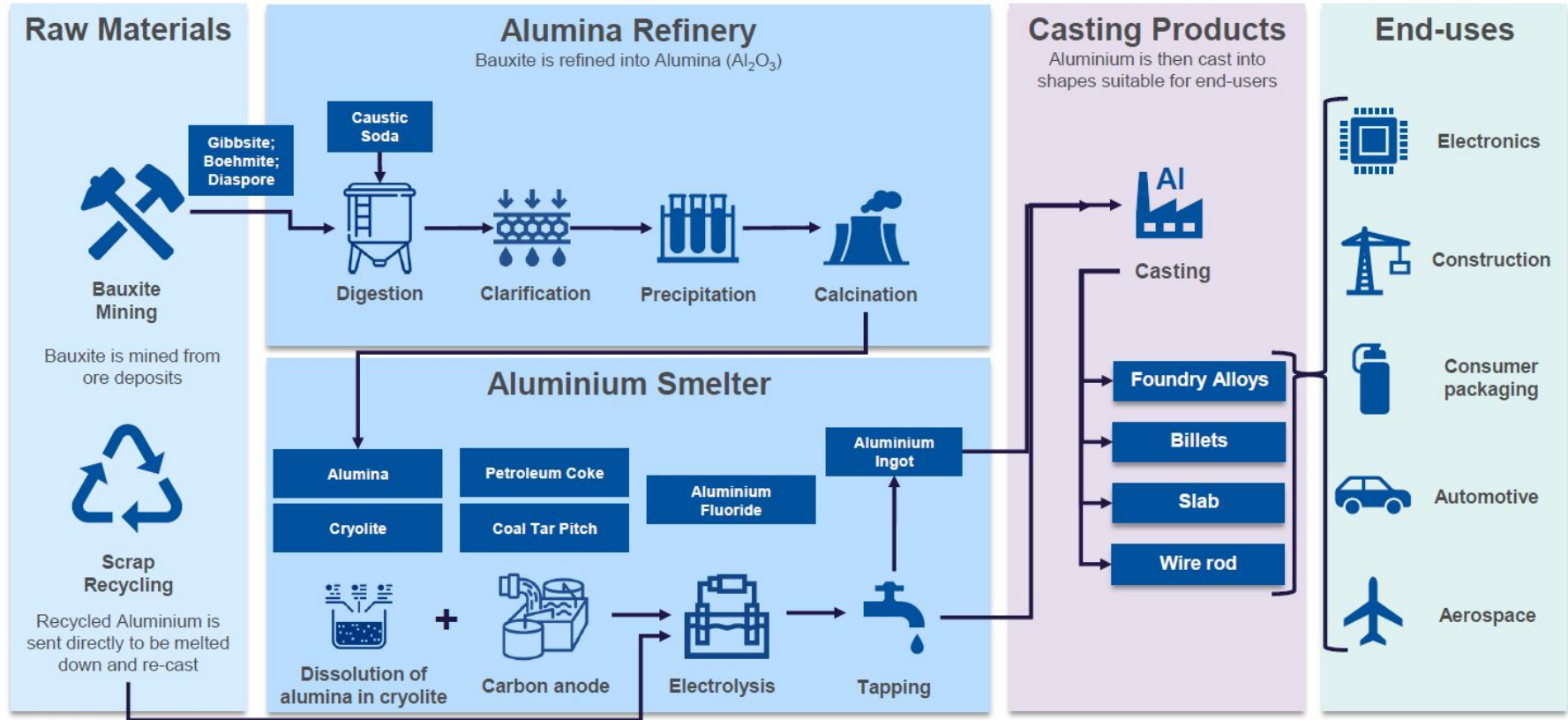


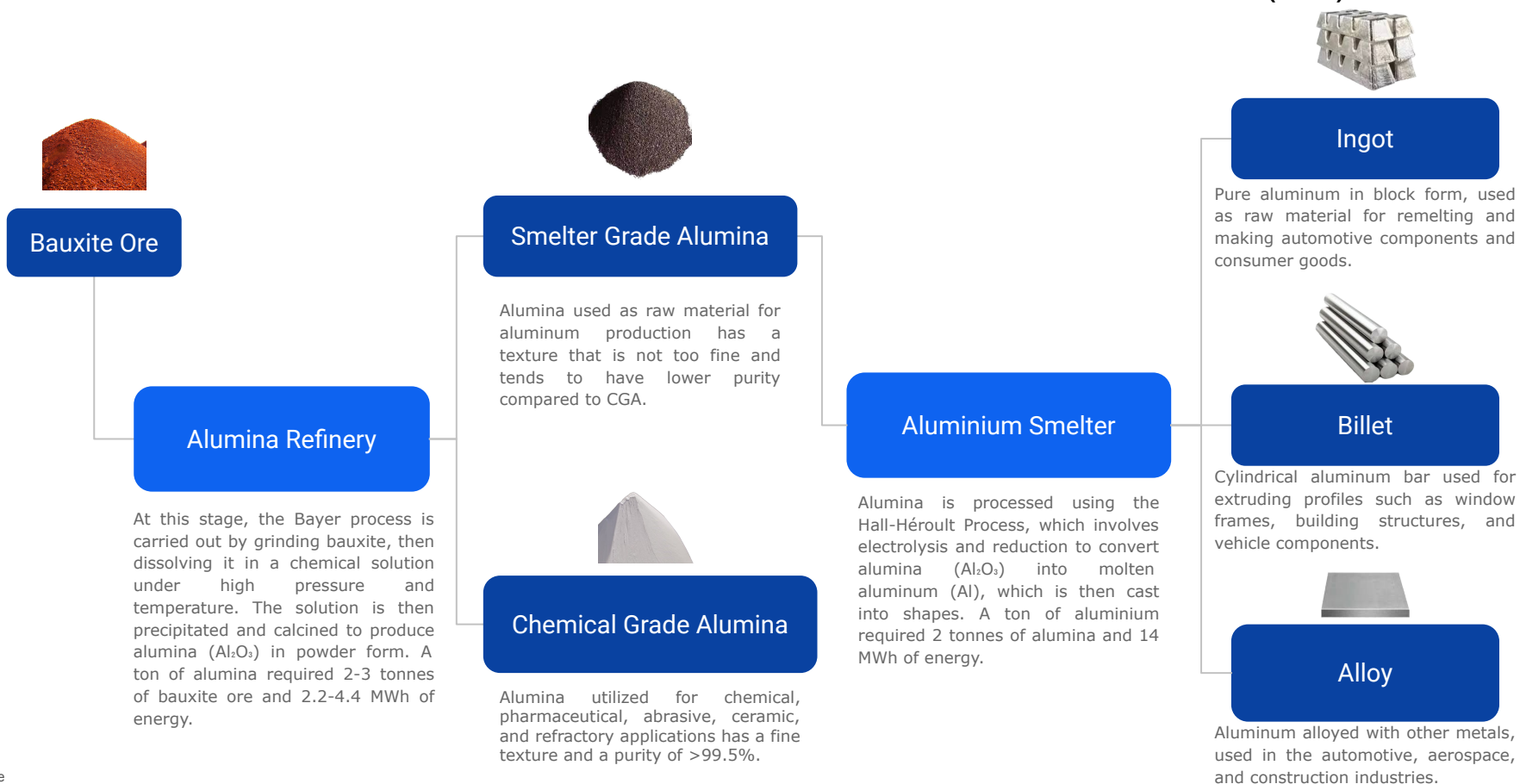
# Indonesian Bauxite and Aluminum Outlook

by Pandu Setiabudi

# Overview of Aluminium Value Chain, from Raw Materials to End-uses (1/2)

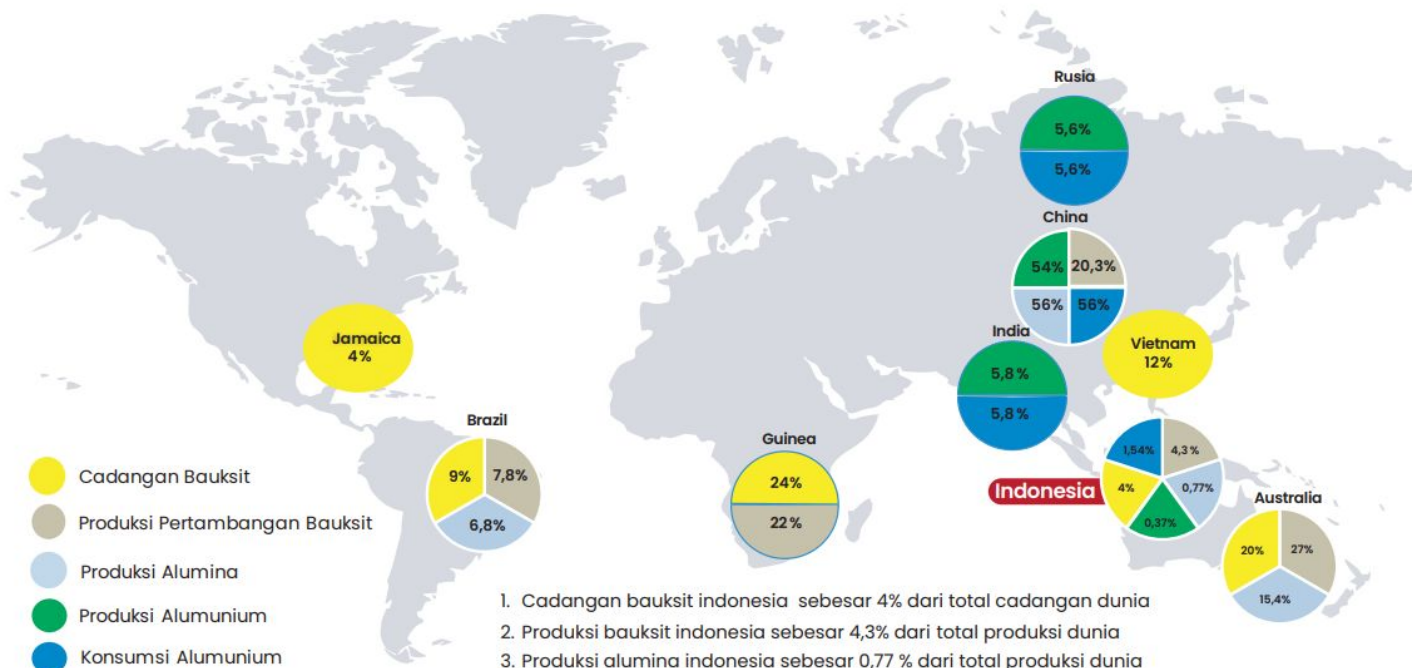


# Overview of Aluminium Value Chain, from Raw Materials to End-uses (2/2)



Source  
 1. Britanica  
 2. PT INALUM Annual Report 2023

# Global Bauxite Overview

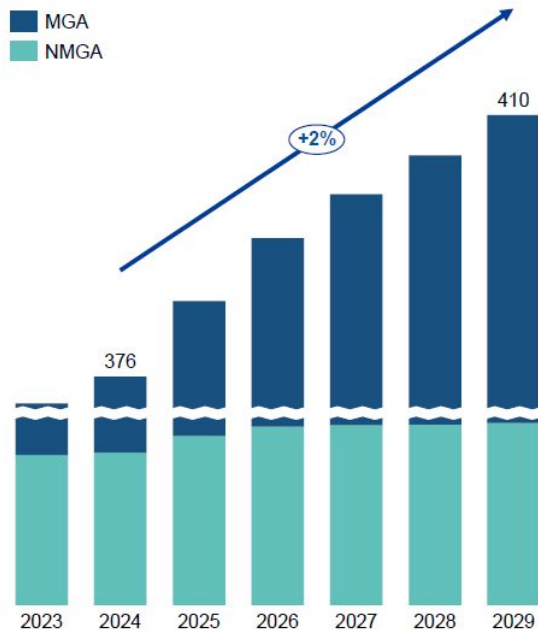


1. Cadangan bauksit indonesia sebesar 4% dari total cadangan dunia
2. Produksi bauksit indonesia sebesar 4,3% dari total produksi dunia
3. Produksi alumina indonesia sebesar 0,77 % dari total produksi dunia
4. Produksi aluminium indonesia sebesar 0,37% dari total produksi aluminium dunia
5. Konsumsi aluminium indonesia sebesar 1,54% dari total konsumsi dunia

# China and India will Drive Third-party Bauxite Consumption

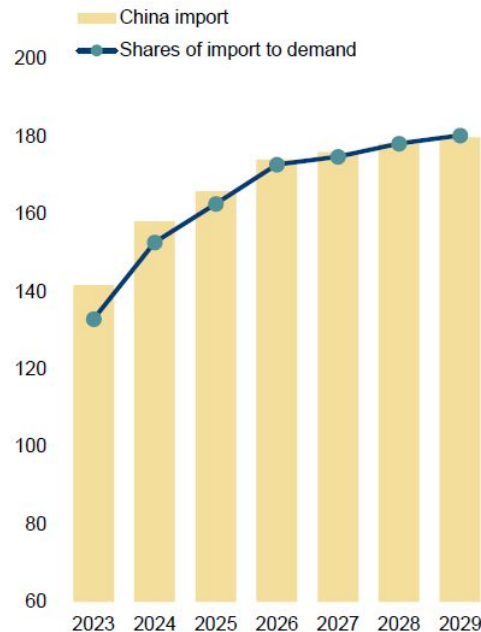
## Bauxite consumption is increasing

World bauxite consumption, Mt



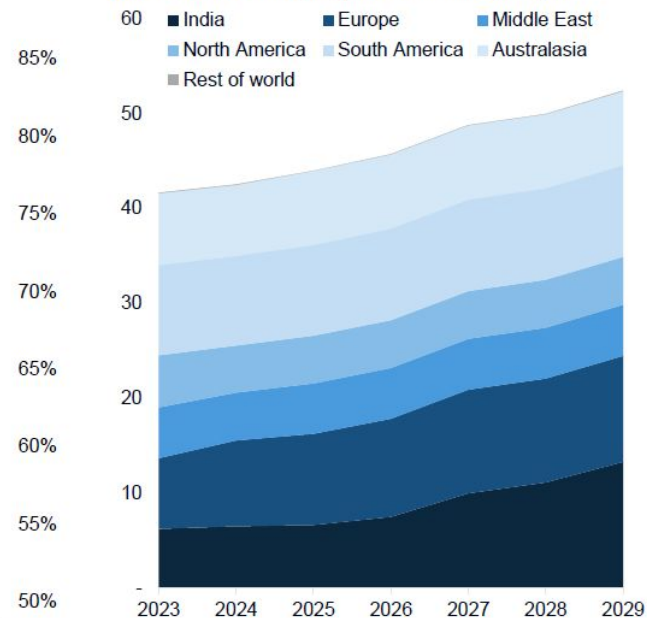
## China's shift to seaborne market

China bauxite imports (LHS), Mt



## India is driving third-party bauxite consumption in World ex. China

World ex. China third party bauxite consumption, Mt



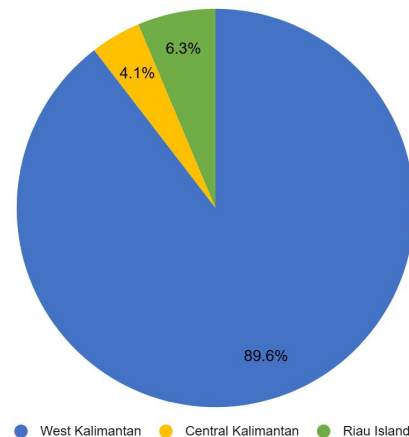
# Indonesian Bauxite Potential

Bauxite	Inferred Resource	Indicated Resource	Measured Resource	Total Resource	Probable Reserve	Proven Reserve	Total Reserve
Ore	1,247,492,631	2,235,837,017	1,616,530,749	5,099,860,400	1,678,618,941	802,035,608	2,480,654,559
Metal	254,763,975	427,675,550	332,508,733	1,014,948,268	337,285,766	157,708,918	494,994,684

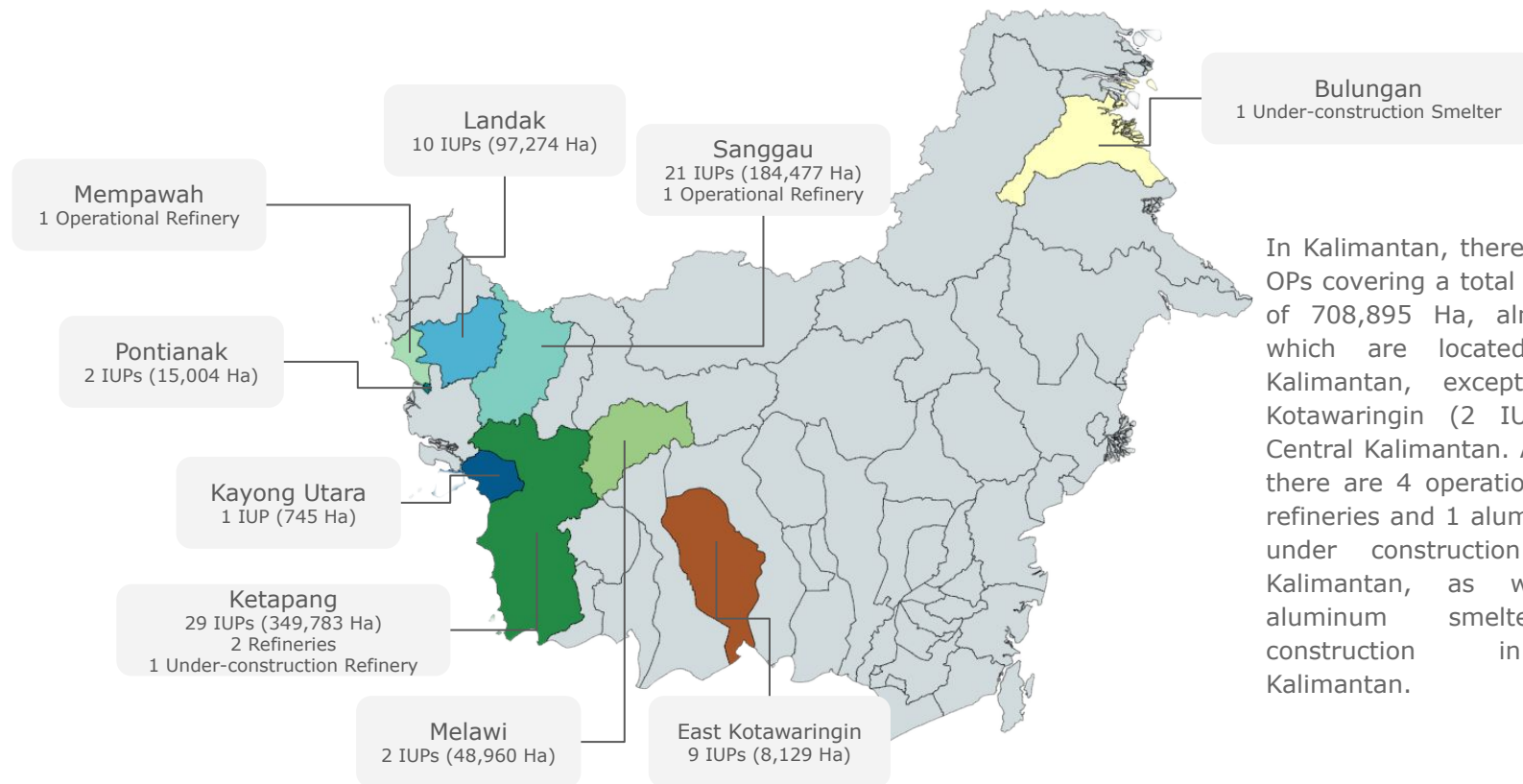
Indonesia has a total bauxite ore resource of 5.1 billion tonnes and 332 million tonnes of metal, as well as total bauxite ore reserves of 2.48 billion tonnes and 495 million tonnes of metal.

Indonesia's bauxite reserves are distributed across three provinces: West Kalimantan (89.6%), Central Kalimantan (4.1%), and the Riau Islands (6.3%).

Indonesian Bauxite Reserves by Province



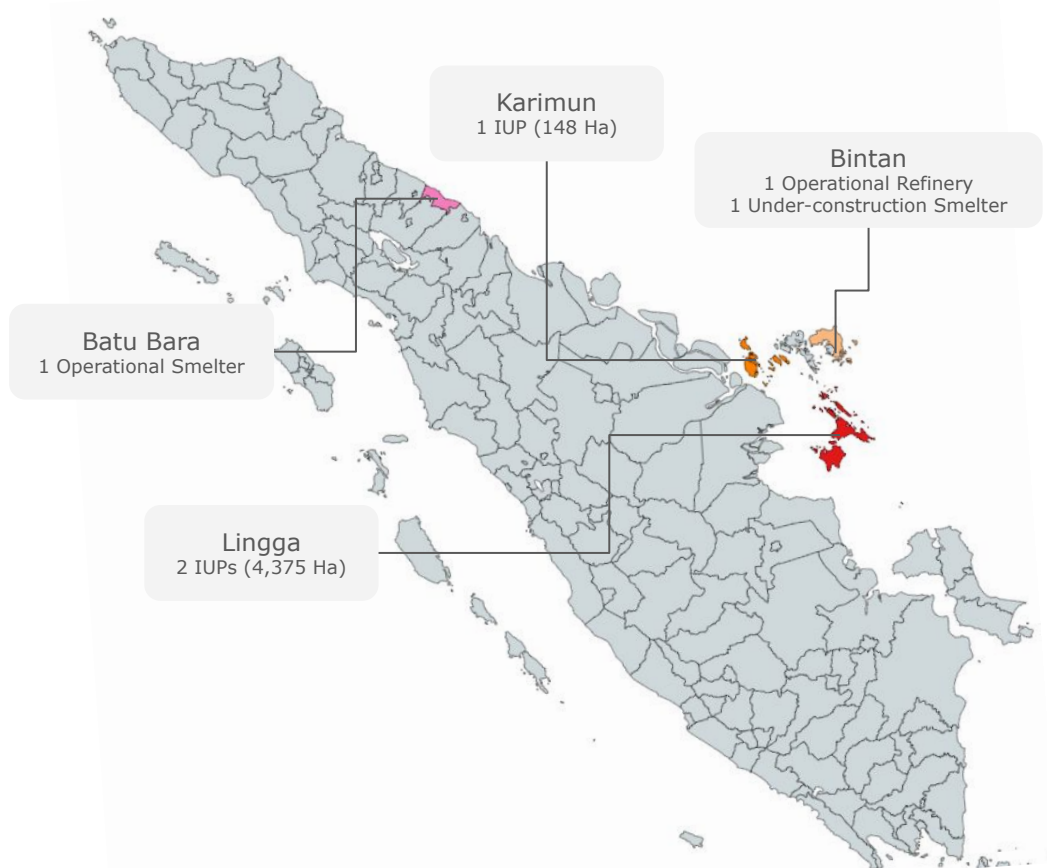
# Indonesian Bauxite Industry by Region: Kalimantan



In Kalimantan, there are 74 IUP OPs covering a total mining area of 708,895 Ha, almost all of which are located in West Kalimantan, except for East Kotawaringin (2 IUP OPs) in Central Kalimantan. Additionally, there are 4 operational alumina refineries and 1 alumina refinery under construction in West Kalimantan, as well as 1 aluminum smelter under construction in North Kalimantan.

Source  
 1. Geoportal Minerba ESDM  
 2. Processed by Petromindo

# Indonesian Bauxite Industry by Region: Sumatera



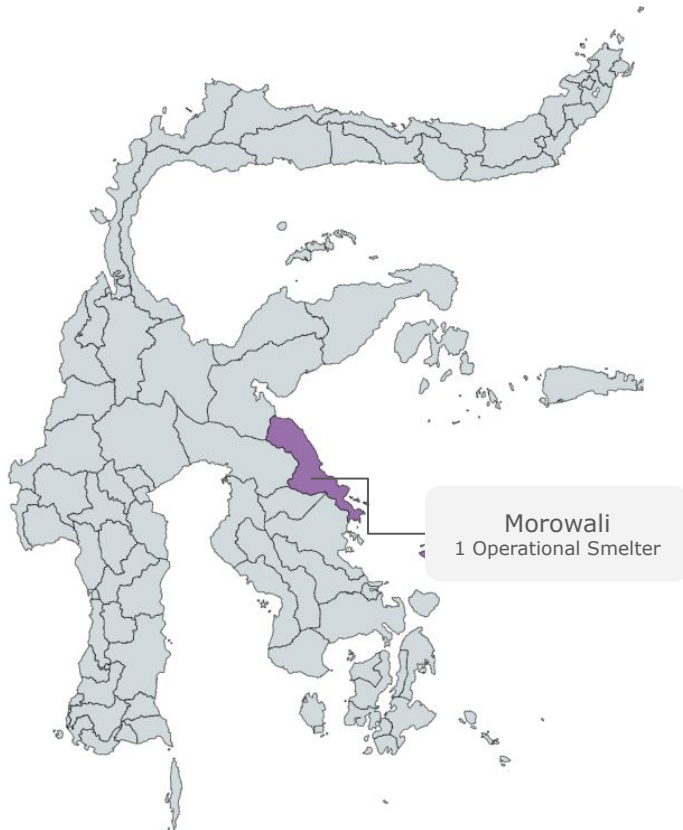
In the Sumatera region, bauxite mining is only found in the Riau Islands province, with a total of 3 IUP OPs. Two IUP OPs are located in Lingga, covering a total area of 4,375 Ha, and one IUP OP is in Karimun, covering 148 Ha. Meanwhile, in Bintan, there is one operational alumina refinery and one aluminum smelter under construction. Additionally, an operational aluminum smelter is located in North Sumatra, in Batu Bara Regency.

Source

1. Geoportal Minerba ESDM
2. Processed by Petromindo



# Indonesian Bauxite Industry by Region: Sulawesi



The final region hosting the bauxite processing industry is Sulawesi, specifically in Morowali. In the Indonesia Morowali Industrial Park (IMIP), there is currently one operational aluminum smelter with a capacity of up to 500,000 tpa of aluminum. There are no bauxite mining areas or alumina refineries in Sulawesi.

Source

1. Geoportal Minerba ESDM
2. Processed by Petromindo

# Indonesian Ban on Bauxite Ore Export

Indonesian bauxite production continued to increase year by year until 2022, then dropped by about 55% in 2023. Law No. 3/2020 (Minerba Law) was the main cause of this drastic decline, as it implemented a ban on bauxite ore exports starting in June 2023 by the Indonesian government. This law "forces" bauxite mining companies to sell ore to domestic smelters or even encourages them to invest in building alumina refineries.

As of 2023, there are only four alumina refineries operating in Indonesia: PT Well Harvest Winning Alumina Refinery (2 refineries), PT Bintan Alumina Indonesia, and PT Indonesia Chemical Alumina. These refineries can process 12.25 million tpa of bauxite and produce a total of 4.3 million tpa of alumina.



\*The production for 2023 are not actual data but represent the amount that can be absorbed by the operational alumina refineries in that year.

#### Source

1. CNBC Indonesia
2. Badan Pusat Statistik
3. Processed by Petromindo

# Alumina Refineries in Indonesia



# Operational: PT Indonesia Chemical Alumina

PT Indonesia Chemical Alumina, located in Tayan, Sanggau, West Kalimantan, is the only refinery in Indonesia that produces chemical-grade alumina (CGA). This smelter has been operational since 2015. PT ICA is fully owned by PT ANTAM, which also supplies bauxite ore from its mine located next to the refinery.

The refinery processes 850,000 tpa of bauxite and produces 300,000 tpa of CGA, which is marketed to South Korea, Japan, China, Malaysia, Thailand, the Philippines, Vietnam, India, Pakistan, New Zealand, Saudi Arabia, and the United Arab Emirates.

Product	CGA
Region	Sanggau
Province	West Kalimantan
Input Capacity	850,000 tpa
Input Source	PT ANTAM
Current Production Capacity	300,000 tpa
Current Investment	US\$490 M
Start Production Year	2015
Current Power Source	Coal
Current Power Capacity	unknown

Source

1. Petromindo
2. PT ICA Official Website

# Operational: PT Well Harvest Winning Alumina Refinery

PT Well Harvest Winning Alumina Refinery, located in Ketapang, West Kalimantan, is a joint venture comprising China Hongqiao Group (56%), PT Cita Mineral Investindo Tbk (Harita Group) (30%), Winning Investment (9%), and Shandong Weiqiao Aluminium & Electricity (5%).

WHW Refinery has been operational since 2016 with a production capacity of 1 million tpa and later expanded by building a second refinery with a capacity of 1 million tpa in 2022.

The bauxite ore supply comes from the mines owned by PT Cita Mineral, which is also one of the shareholders of the company, with a supply volume reaching 5.4 million tpa. In its operations, the refinery uses energy from its own Ketapang coal-fired power plant with a capacity of 220 MW.

Product	SGA
Region	Ketapang
Province	West Kalimantan
Input Capacity	5,400,000 tpa
Input Source	PT Cita Mineral
Current Production Capacity	2,000,000 tpa
Current Investment	US\$1.3 B
Start Production Year	2016 & 2022
Current Power Source	Coal
Current Power Capacity	220 MW

Source

1. Petromindo
2. Well Harvest Winning Official Website

# Operational: PT Bintan Alumina Indonesia

PT Bintan Alumina Indonesia, located in Bintan, Riau Islands, began producing smelter-grade alumina (SGA) in 2022. PT Bintan Alumina Indonesia is owned by Global Aluminium International Pte Ltd (GAI) (99% interest) and PT Mahkota Karya Utama (MKU) (1%). The shareholders of GAI are Chinese firms Nanshan Aluminium Singapore Co Pte Ltd (95%) and Redstone (5%).

The refinery has a production capacity of 2 million tpa of SGA, consuming 6 million tpa of bauxite. PT BAI sources 90% of its raw materials from Kalimantan, which includes its own mining operations (PT Mahkota Karya Utama), supplies from other bauxite mining companies, and a small contribution from PT Aneka Tambang Tbk. The remaining 10% is obtained from the nearby Riau Islands. PT MKU has committed to supplying 3 million tons of bauxite in 2025 and increase the supply to 4.5 million tons in 2026. PT BAI has a sales agreement with Press Metal for 1.5 million tpa until 2040.

Currently, PT BAI plans to increase its production capacity by 1 million tpa in 2025 and another 1 million tpa in 2026, bringing the total capacity to 4 million tpa of SGA.

Product	SGA
Region	Bintan
Province	Riau Islands
Input Capacity	6,000,000 tpa
Input Source	PT MKU
Current Production Capacity	2,000,000 tpa
Current Investment	US\$1.15 B
Start Production Year	2022
Current Power Source	Coal
Current Power Capacity	160 MW

# Operational: PT Borneo Alumina Indonesia

PT Borneo Alumina Indonesia, located in Mempawah, West Kalimantan, is a joint venture between PT INALUM (60%) and PT ANTAM (40%). PT BAI began commissioning operations in Q4 2024 and is targeted to be fully operational by Q1 2025.

PT BAI will produce smelter-grade alumina (SGA) with a capacity of 1 million tpa, consuming 3.3 million tpa of bauxite supplied by PT ANTAM from its mine in Mempawah. Of the SGA produced, 600,000 tpa will be purchased by PT INALUM in Asahan, North Sumatra.

The second phase of the smelter's development has already been planned, with an additional production capacity of 1 million tpa of SGA and an estimated investment value of US\$870 million.

Product	SGA
Region	Mempawah
Province	West Kalimantan
Input Capacity	3,300,000 tpa
Input Source	PT ANTAM
Current Production Capacity	1,000,000 tpa
Current Investment	US\$830 M
Start Production Year	2025
Current Power Source	Coal
Current Power Capacity	unknown

#### Source

1. Petromindo
2. PT BAI Official Website
3. CNBC Indonesia

# Under Construction: PT Borneo Alumindo Prima

PT Borneo Alumindo Prima (BAP) is currently constructing an alumina refinery in Ketapang, West Kalimantan. The company is owned by HC-Asia Pacific Holdings Pte Ltd (80%) and Top Celestial Holdings Pte Ltd (20%), both subsidiaries of Hangzhou Jinjiang Group Ltd from China.

The refinery is planned to be built in five phases with a total target production capacity of 6 million tonnes per annum (tpa). The total investment is estimated at US\$3 billion, positioning BAP to become the largest alumina producer in Indonesia.

Phase I is under construction by 23rd Metallurgical, a subsidiary of China Minmetals, with a planned production capacity of 1 million tpa. The construction is expected to be completed by 2025, although the commissioning timeline has not been confirmed yet.

Product	SGA
Region	Ketapang
Province	West Kalimantan
Production Capacity	6,000,000 tpa
Investment	US\$3 B



# Planned: PT Tianshan Alumina Indonesia

PT Tianshan Alumina Indonesia is a subsidiary of Tianshan Aluminium Group, a major aluminum producer from China. PT Tianshan Alumina Indonesia is currently in the process of obtaining approval for the construction of an alumina smelter in the Riau Islands.

The refinery is planned to have a production capacity of 2 million tonnes, with an estimated investment value of US\$1.56 billion. Tianshan Aluminium Group indirectly controls four mining companies in Indonesia: PT Inti Tambang Makmur, PT Persada Buana Gemilang, PT Persada Pratama Cemerlang, and PT Paloan Maju Abadi.

Product	SGA
Region	Lingga
Province	Riau Islands
Production Capacity	2,000,000 tpa
Investment	US\$1.56 B

# Planned: PT Kalimantan Alumina Nusantara

PT Kalimantan Alumina Nusantara (KAN) is a joint venture between Press Metal Aluminium Holding Berhad (80%), PT Alakasa Alumina Refineri (19.77%), and PT Dinamika Sejahtera Mandiri (0.23%). PT KAN plans to build an alumina refinery in Sanggau, West Kalimantan.

The alumina refinery will have a production capacity of 1 to 1.2 million tpa in the first phase, with potential for future expansion. The estimated investment for the first phase of the refinery construction is US\$750 million. PT KAN is currently carrying out preliminary work to establish supporting infrastructure for the project.

This project is part of Press Metal Aluminium's strategy to solidify its position as the largest aluminum smelter in Southeast Asia. The construction of this alumina refinery will ensure a stable alumina supply for their smelter, reducing reliance on third-party suppliers.

Product	SGA
Region	Sanggau
Province	West Kalimantan
Production Capacity	1,200,000 tpa
Investment	US\$750 M

# Stalled Alumina Refinery Projects

In fact, there are seven planned integrated alumina refinery projects with mining operations that have stalled and shown no progress. This is due to funding issues. The high capital required to build alumina refineries, combined with declining revenues for mining companies following the bauxite export ban, has caused these projects to come to a halt.

Company	Product	Location	Input Capacity	Production Capacity
PT Laman Mining	SGA	Ketapang, West Kalimantan	2,850,000 tpa	1,000,000 tpa
PT Kalbar Bumi Perkasa	SGA	Sanggau, West Kalimantan	4,200,000 tpa	1,500,000 tpa
PT Sumber Bumi Marau	SGA	Ketapang, West Kalimantan	2,600,000 tpa	1,000,000 tpa
PT Persada Pratama Cemerlang	SGA	Sanggau, West Kalimantan	2,500,000 tpa	1,000,000 tpa
PT Parenggean Makmur Sejahtera	CGA	East Kotawaringin, Central Kalimantan	3,000,000 tpa	986,000 tpa
PT Dinamika Sejahtera Mandiri	SGA	Sanggau, West Kalimantan	5,200,000 tpa	2,000,000 tpa
PT Quality Sukses Sejahtera	SGA	Sanggau, West Kalimantan	3,500,000 tpa	1,500,000 tpa

Source

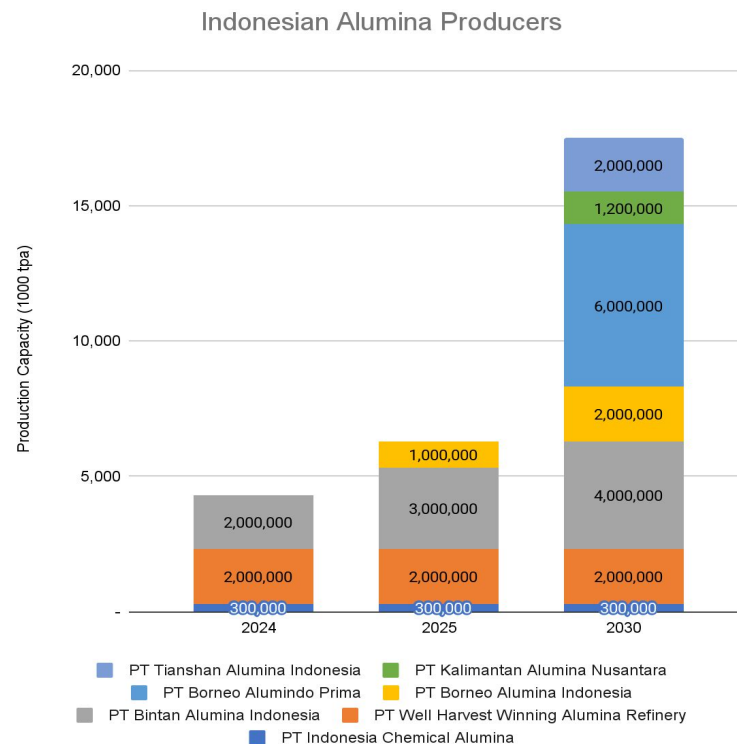
1. Petromindo
2. CNBC Indonesia
3. Sucofindo

# Indonesian Alumina Production Capacity until 2030

Currently, Indonesia has four companies operating alumina refineries, with three running at full capacity and one in the commissioning phase. In 2025, there will be no new company build alumina refineries, but production capacity of the operational refinery will increase by 2 million tpa.

Beyond the current operations, one alumina refinery company with a planned total capacity of 6 million tpa will begin construction on Phase 1 (of 5 phases). Additionally, two other companies are planning to build alumina refineries with a combined capacity of 3.2 million tpa.

If these projects are completed before 2030, Indonesia's total alumina production capacity will reach 17.5 million tpa. This capacity increase will further boost the absorption of Indonesia's bauxite ore. Moreover, the alumina produced can be exported or used as input for domestic aluminum smelters.

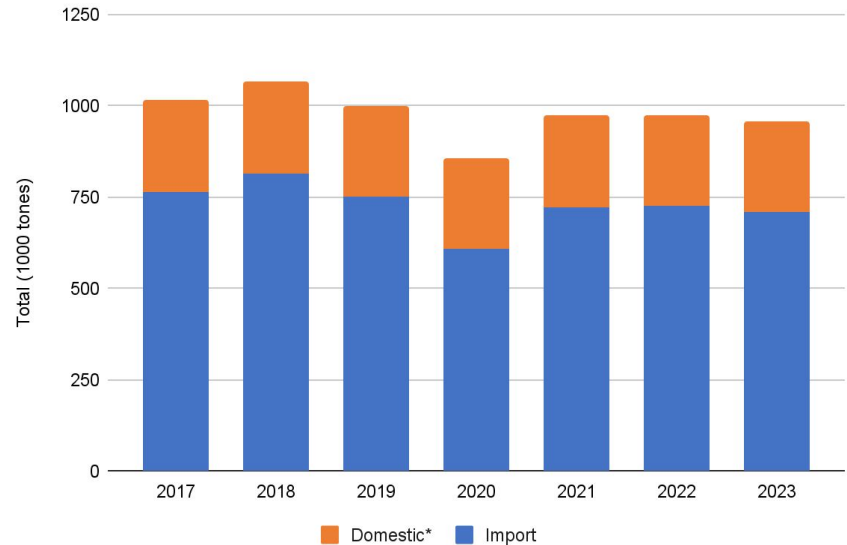


# Indonesian Aluminium Consumption

Aluminum is used across various industries such as transportation, automotive, construction, energy, and others. Currently, aluminum consumption by industries in Indonesia is still dominated by imported aluminum, as the country only has one aluminum smelter dedicated to meeting domestic demand, with a production capacity of 250,000 tpa (upgraded to 280,000 tpa in mid-2023), owned by INALUM. Another aluminum smelter, owned by PT Hua Chin, has a production capacity of 500,000 tpa; however, all its aluminum products are exported to China, the parent company's country of origin.

The development of aluminum smelters in Indonesia is currently being promoted to meet domestic demand and reduce imports. At present, there is one operational smelter and three new smelters under construction.

## Indonesian Aluminium Composition



\*Domestic production data only accounts for primary aluminum

# Aluminium Smelters in Indonesia



# Operational: PT Indonesia Asahan Aluminium

PT Indonesia Asahan Aluminium (INALUM), located in Kuala Tanjung, Batu Bara, North Sumatra, was established in 1976 by the Indonesian government in collaboration with Nippon Asahan Aluminium. Currently, INALUM is wholly owned by the Indonesian government through the state-owned holding company MIND ID. INALUM operates the only aluminum smelter in Indonesia that is currently in operation.

INALUM's aluminum smelter processes 500,000 tpa of SGA into 250,000 tpa of primary aluminum, powered by the Siguragura Hydropower Plant (286 MW) and the Tangga Hydropower Plant (317 MW). Until 2024, INALUM uses SGA sourced from Australia. However, with the establishment of an alumina refinery by its subsidiary, PT Borneo Alumina Indonesia (BAI), 600,000 tpa of alumina will be supplied by PT BAI.

INALUM is currently planning an expansion with a target to increase capacity by 600,000 tpa by 2028 and an additional 600,000 tpa by 2030.

Product	Primary Aluminium
Region	Batu Bara
Province	North Sumatra
Input Capacity	500,000 tpa
Input Source	PT Borneo Alumina Indonesia
Production Capacity	250,000 tpa
Current Investment	JP¥ 411 B
Start Production Year	1976
Current Power Source	Hydro
Current Power Capacity	603 MW

Source

1. Petromindo
2. INALUM Annual Report

# Operational: PT Hua Chin Aluminium Industri

PT Hua Chin Aluminium's aluminum smelter is located in the Indonesia Morowali Industrial Park (IMIP) in Southeast Sulawesi. The project is a collaboration between Huaфон and Tsingshan, with ownership stakes of 65% and 35%, respectively.

The smelter reached full production in 2024, with a capacity of 500,000 tonnes per annum (tpa) of aluminum, consuming approximately 1 million tpa of alumina. The aluminum smelter project is estimated to have an investment value of US\$921 million.

The aluminum produced from this smelter is not marketed in Indonesia but is directly exported to China. This arrangement is part of the company's operational model, as it is a subsidiary of a Chinese corporation.

Product	Primary Aluminium
Region	Morowali
Province	Southeast Sulawesi
Input Capacity	1,000,000 tpa
Input Source	unknown
Production Capacity	500,000 tpa
Investment	US\$921 M
Target Production Year	2025
Power Source	Coal
Power Capacity	unknown



# Under Construction: PT Kalimantan Aluminium Industry

PT Kalimantan Aluminium Industry (KAI) is currently constructing an aluminum smelter located in the Kalimantan Industrial Park (KIP), Bulungan, North Kalimantan. PT KAI is a joint venture between Adaro Minerals (65%), Aumay Mining (22.5%), and Cita Mineral Investindo (12.5%).

The KAI smelter's Phases I, II, and III will each have a production capacity of 500,000 tpa of aluminum, with an investment value of US\$2 billion per phase. These phases were initially targeted to begin operations in 2025, 2026, and 2030, respectively. However, according to Wito Krishnahadi (President Director of KAI), Phase II will not be carried out and will skip directly to Phase III.

The alumina supply is planned to be supported by PT Well Harvest Winning Alumina Refinery, which is partly owned by CITA. For Phase I, the smelter will be powered by a coal power plant jointly owned by Adaro Energy and CITA, with a capacity of 1,100 MW. Meanwhile, Phase III will use energy from a 1,375 MW hydropower plant jointly owned by Adaro Energy, Sarawak Energy, and Kayan Patria Pratama.

Product	Primary Aluminium
Region	Bulungan
Province	North Kalimantan
Input Capacity	unknown
Input Source	PT Well Harvest Winning
Production Capacity	2 X 500,000 tpa
Investment	2 X US\$2 B
Target Production Year	2025 and 2030
Power Source	Coal and Hydro
Power Capacity	1,100 MW and 1,375 MW

# Under Construction: PT Bintan Electrolytic Aluminium

PT Bintan Electrolytic Aluminium (BEA) is currently constructing an aluminum smelter in the Galang Batang Special Economic Zone, Bintan, Riau Islands. BEA is a subsidiary of Shandong Nanshan, which also operates an alumina smelter in Bintan through PT Bintan Alumina Indonesia (BAI).

Phase I of the smelter has a production capacity of 250,000 tonnes per annum (tpa) and is targeted for completion in 2025 with an investment value of US\$878 million. Phases II and III will have capacities of 250,000 tpa and 500,000 tpa, respectively, with completion targeted for 2027. Alumina supply will be provided by PT BAI, which currently has a production capacity of 2 million tpa of SGA.

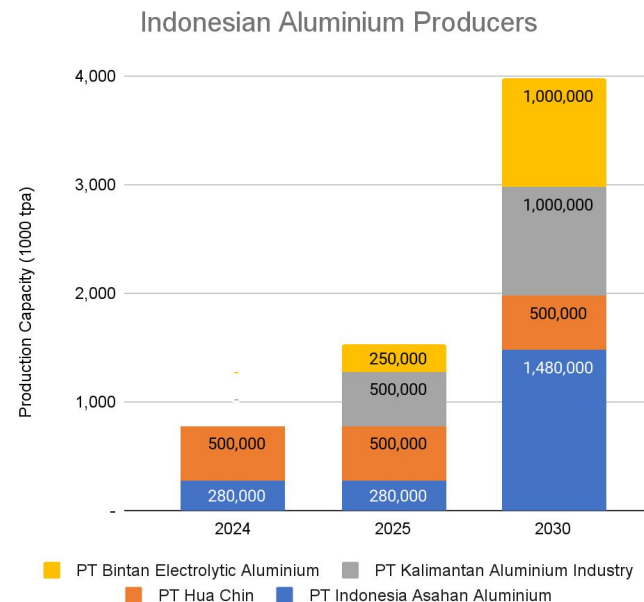
Product	Primary Aluminium
Region	Bintan
Province	Riau Islands
Input Capacity	500,000 tpa
Input Source	PT Bintan Alumina Indonesia
Production Capacity	225,000 tpa
Investment	US\$ 830M
Target Production Year	2025
Power Source	Coal
Power Capacity	unknown

# Indonesian Aluminium Production Capacity until 2030

As of 2024, Indonesia has only two operating aluminum smelters: PT INALUM and PT Hua Chin, with a total production capacity of 780,000 tonnes. INALUM is the sole smelter supplying domestic primary aluminum, while Hua Chin exports all its products to China.

In 2025, two new smelters will begin operations: PT Kalimantan Aluminium Industry and PT Bintan Electrolytic Aluminium, adding 750,000 tonnes of capacity, bringing the total to 1,530,000 tonnes. The production capacity of these four companies will continue to grow through 2030. INALUM will increase its capacity by 1,200,000 tpa, Kalimantan Aluminium Industry by 500,000 tpa, and Bintan Electrolytic Aluminium by 750,000 tpa.

By 2030, Indonesia's total aluminum production capacity will reach 3,980,000 tpa, a 410% increase from the 2024 capacity.

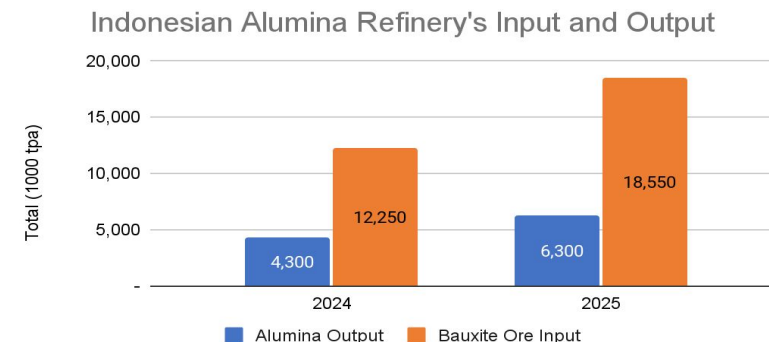
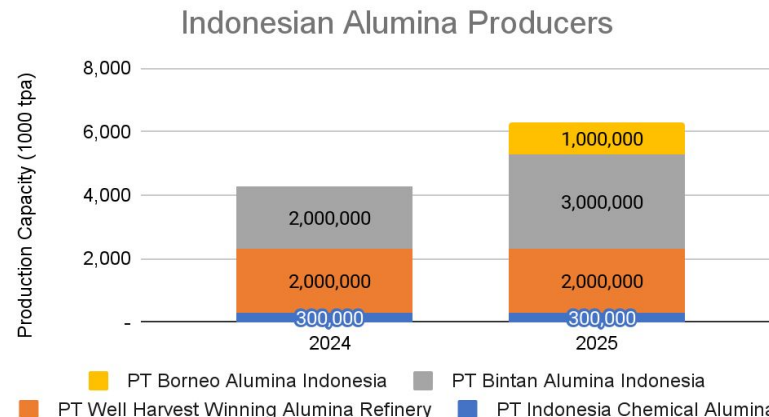


# Alumina Refinery Absorption for Indonesian Bauxite Ore

Overall, there are three alumina refineries operating at full capacity in Indonesia: PT Indonesia Chemical Alumina, PT Well Harvest Winning Alumina Refinery, and PT Bintan Alumina Indonesia, with a total production capacity of 4.3 million tpa of alumina. Also a alumina refinery still in the commissioning, PT Borneo Alumina Indonesia, with production capacity of 1 million tpa. Production capacity is projected to increase to 6.3 million tpa by 2025.

This production capacity will increase the required input of bauxite ore from 12.25 million tpa to 18.55 million tpa. However, this figure is still insufficient to absorb Indonesia's bauxite production compared to the last full year before the export ban (2022), which stood at 27.5 million tpa.

Source  
1. Processed by Petromindo

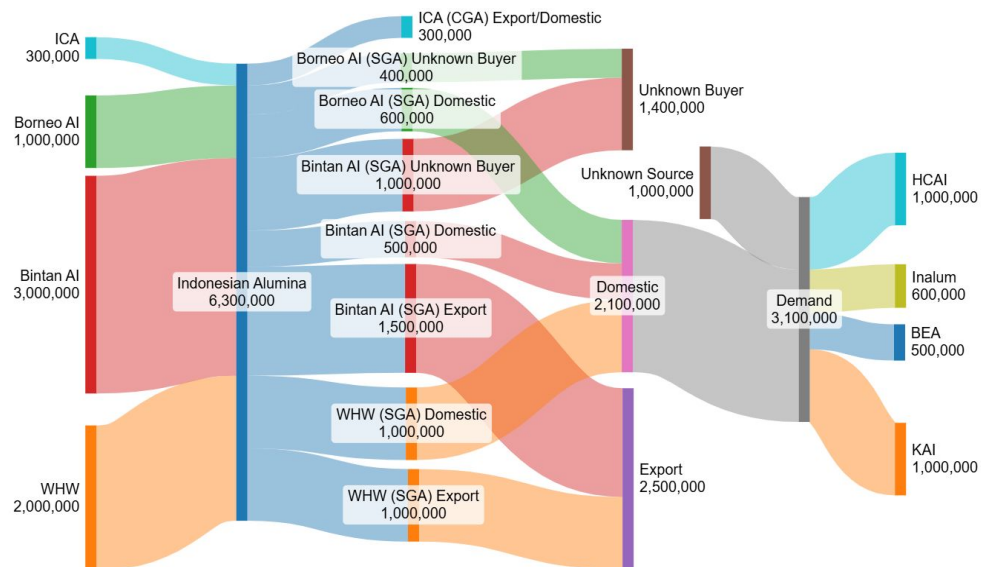


# Indonesian Alumina Supply to Aluminium Smelter by 2025

By 2025, alumina refineries in Indonesia are projected to have a total production capacity of 6.3 million tons, consisting of 300,000 tons of CGA and 6 million tons of SGA. CGA is exclusively produced by PT Indonesia Chemical Alumina and is marketed both domestically and for export. Meanwhile, SGA is produced by PT Borneo Alumina Indonesia, PT Bintan Alumina Indonesia, and PT Well Harvest Winning, and is also marketed domestically and for export.

Of the total SGA, 2.1 million tons are designated for domestic aluminum smelters, and 2.5 million tons are planned for export. However, the destination for the remaining 1.4 million tons of SGA is still unknown. The domestic demand for SGA for aluminum smelters is estimated at 3.1 million tons, supplied by 2.1 million tons produced domestically (600,000 tons from PT Indonesia Asahan Aluminium, 500,000 tons from PT Bintan Electrolytic Aluminium, and 1 million tons from PT Kalimantan Aluminium Industry) and 1 million tons from an unknown source, which will supply PT Hua Chin Aluminium Industri.

Overall, this indicates that Indonesia will experience a surplus of alumina in 2025, allowing for export opportunities while still meeting the domestic alumina demand for smelters, even if PT Hua Chin Aluminium Industri utilizes domestically produced alumina.



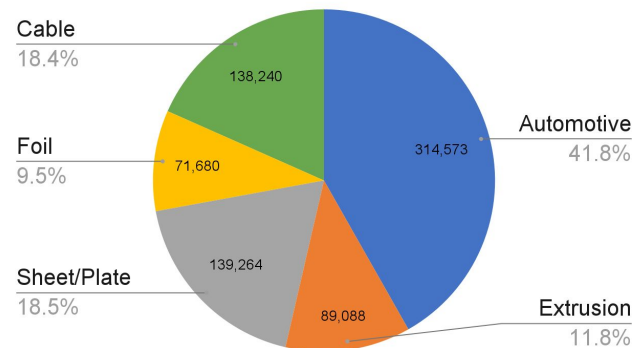
# Indonesian Aluminium Demand by 2030

Indonesia's primary aluminum demand in 2023 reached 752,845 tonnes, with the automotive sector accounting for the largest share at 41.8%, followed by sheet/plate (18.5%) and cables (18.4%).

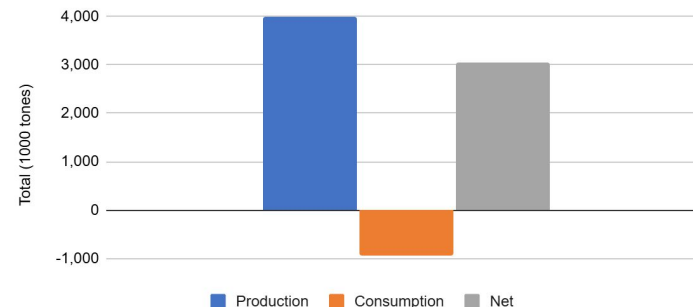
The Indonesian government has set specific targets to accelerate the transition from ICE vehicles to EVs and from conventional energy sources to renewable energy, particularly solar PV panels. On average, each EV contains approximately 250 kg of aluminum, mainly used in lightweight body structures, battery enclosures, and electrical components. Meanwhile, the construction of 1 MW of solar PV capacity requires about 21 tonnes of aluminum, particularly for panel frames, mounting systems, and structural supports. By 2030, the government aims to produce 600,000 BEVs (from 15,000 by 2023) and increase solar PV capacity by an additional 1.4 GW. Thus, these two sectors alone could drive an additional aluminum demand of 175,650 tonnes (23%) by 2030.

With this assumption and without accounting for changes in other sectors, Indonesia could experience an aluminum surplus of 3.05 million tonnes by 2030. This also implies that Indonesia would not need to import aluminum from other countries to meet its demand, as long as the domestic market becomes the priority for aluminum products from smelters.

Indonesian Primary Aluminium Consumption 2023



Forecast of Indonesian Aluminium by 2030



Source

1. Bauxite Downstream Promotion Booklet by MEMR
2. Indonesia Energy Transition Outlook 2025 by IESR
3. Processed by Petromindo

# Key Takeaways



1

**Indonesian Bauxite:** With 5.1 billion tonnes of resources and 2.48 billion tonnes of reserves, Indonesia has great potential to continue the growth of bauxite-based industries such as alumina or aluminum, considering that current production is still relatively small.



2

**Impact of the Ore Export Ban:** The 2023 bauxite export ban has driven investments in domestic refineries, boosting value-added production, but financial constraints have delayed many projects and strained mining companies' revenues.



3

**Alumina Outlook:** The projected rise in alumina production from 4.3 million tpa today to 17.5 million tpa by 2030 will enhance domestic aluminum smelter supply, reduce reliance on imports, and position Indonesia as a key player in global alumina markets.



4

**Aluminum Outlook:** The rise in aluminum production from 780,000 tpa in 2024 to 3.98 million tpa by 2030 will eliminate the need for imports, fully meet domestic demand, and create surplus opportunities for export.



5

**Industry Challenges:** Key challenges include the high capital required for refinery and smelter projects, energy-intensive production processes, and stalled projects due to funding constraints.



6

**Industry Potential:** Indonesia has significant potential in the aluminum industry, driven by the growing demand from the electric vehicle and solar PV sectors, which could boost domestic production and open up export opportunities by 2030.