

# Indonesian Copper Outlook:

Booming Smelters, Strained Supply—Can the Industry Keep Up?

by: Pandu Setiabudi

# Global Copper Overview

## Price Trends:

- **2021:** Copper prices rose through 2021, peaking close to \$11,023 per metric ton in the second quarter of 2022 before retreating.
- **2022:** The average annual price of copper on the London Metal Exchange (LME) was \$8,797 per metric ton, reflecting a strong demand driven by post-pandemic economic recovery and increased industrial activities.
- **2023:** The average annual price slightly decreased to \$8,478 per metric ton, a 3.6% decline from the previous year. This dip was attributed to a combination of factors, including a strengthening U.S. dollar and concerns over global economic growth.
- **2024:** As of late 2024, copper prices remained stable yet subdued in the U.S., with a mild recovery observed in China's physical market. Europe, particularly Germany, experienced weaker demand despite ongoing green energy projects.

## Supply and Demand Dynamics:

- **Supply:** In 2023, global copper production was robust, with significant contributions from countries like Peru and Chile. However, challenges such as declining ore grades and geopolitical tensions posed risks to future supply stability.
- **Demand:** The demand for copper has been bolstered by the global energy transition, with increased usage in electric vehicles, renewable energy infrastructure, and data centers. BHP projected an annual increase in global copper demand of 1 million metric tons until 2035, anticipating a 70% rise by 2050.

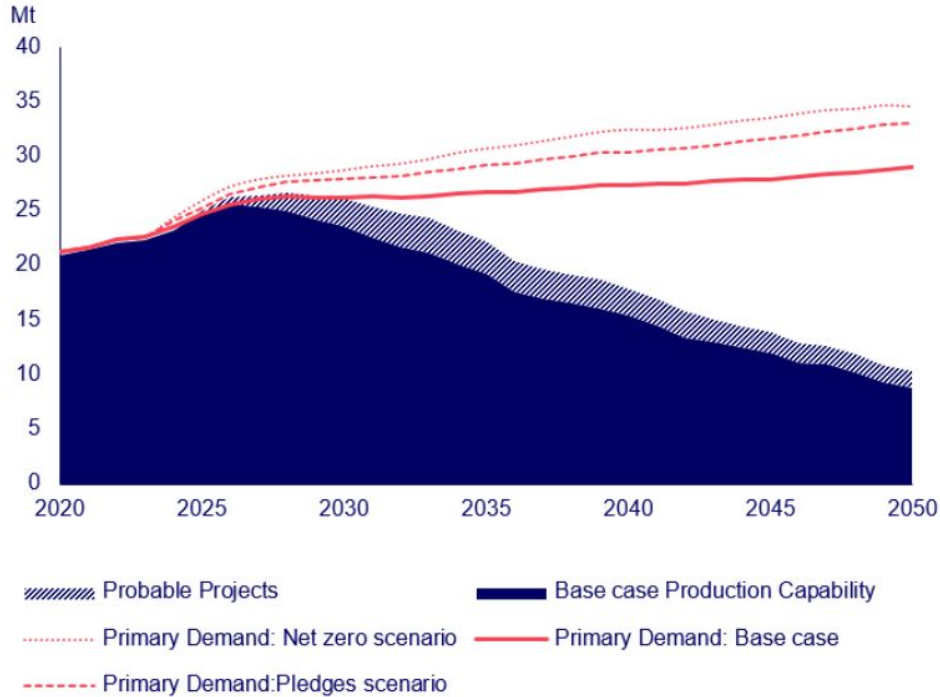
# Indonesia's Position in Global Copper

According to USGS data for global copper 2023, Indonesia holds approximately 20.3 Mt of copper reserves, ranking 10th globally, and produced 907 Kt of mined copper, placing it 6th worldwide. However, in terms of refined copper production, Indonesia ranked 16th in 2023—lagging behind countries like Japan, South Korea, and Germany, which have no domestic copper mine reserves.

This gap highlights significant investment potential in Indonesia's copper refining industry, which requires further development and expansion.

Rank	Country	Refinery Production (Kt)	Mine Production (Kt)	Metal Reserves (Kt)
1	China	12,000	1,820	41,000
2	Chile	2,080	5,250	190,000
3	Congo	2,170	2,930	80,000
4	Japan	1,490	0	0
5	Russia	960	890	80,000
6	United States	882	1,130	50,000
7	Germany	609	0	0
8	Korea Republic	604	0	0
9	Poland	592	395	34,000
10	Mexico	509	699	53,000
11	India	509	27	2,200
12	Kazakhstan	458	740	20,000
13	Australia	442	778	100,000
14	Peru	403	2,760	120,000
15	Canada	315	500	7,600
<b>16</b>	<b>Indonesia</b>	<b>225</b>	<b>907</b>	<b>20,300</b>
17	Zambia	222	712	21,000
	Others	2,460	3,020	180,000
World total		26,930	22,558	976,800

# Global Copper Future Demand



Note:

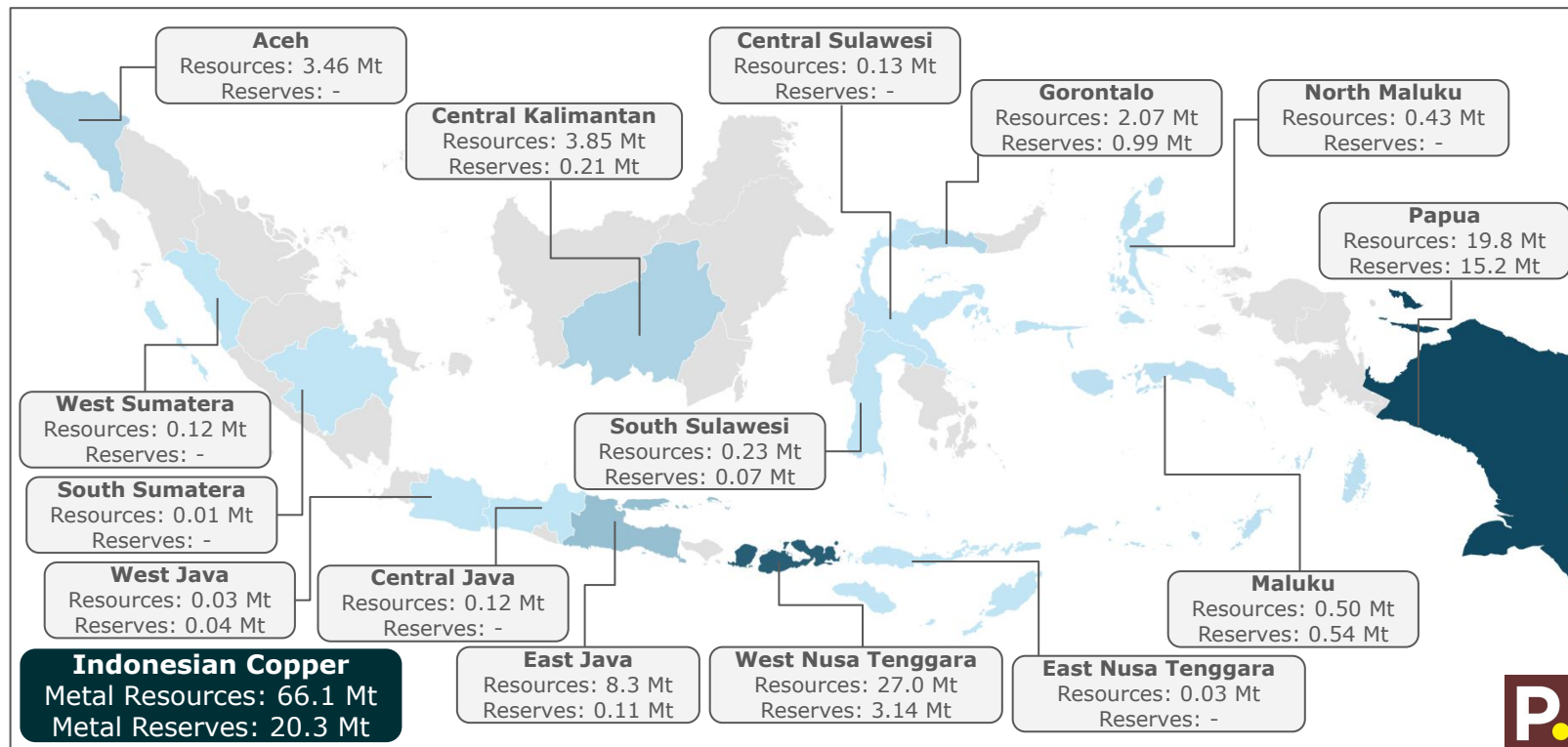
1. This assumes refined production from secondary resources growing 50% pa between 2024-2050 under the Net zero scenario. This compares to 4.3% pa. in the base case, and 4.6% pa in the pledges scenario.
2. Under a Net zero scenario, primary demand grows at 1.4% pa between 2024-2050.

An analysis by global data and analytics firm Wood Mackenzie shows that in various scenarios predicting future copper demand, all projections indicate an increase in demand. Meanwhile, global copper mine production is expected to decline, falling below demand levels.

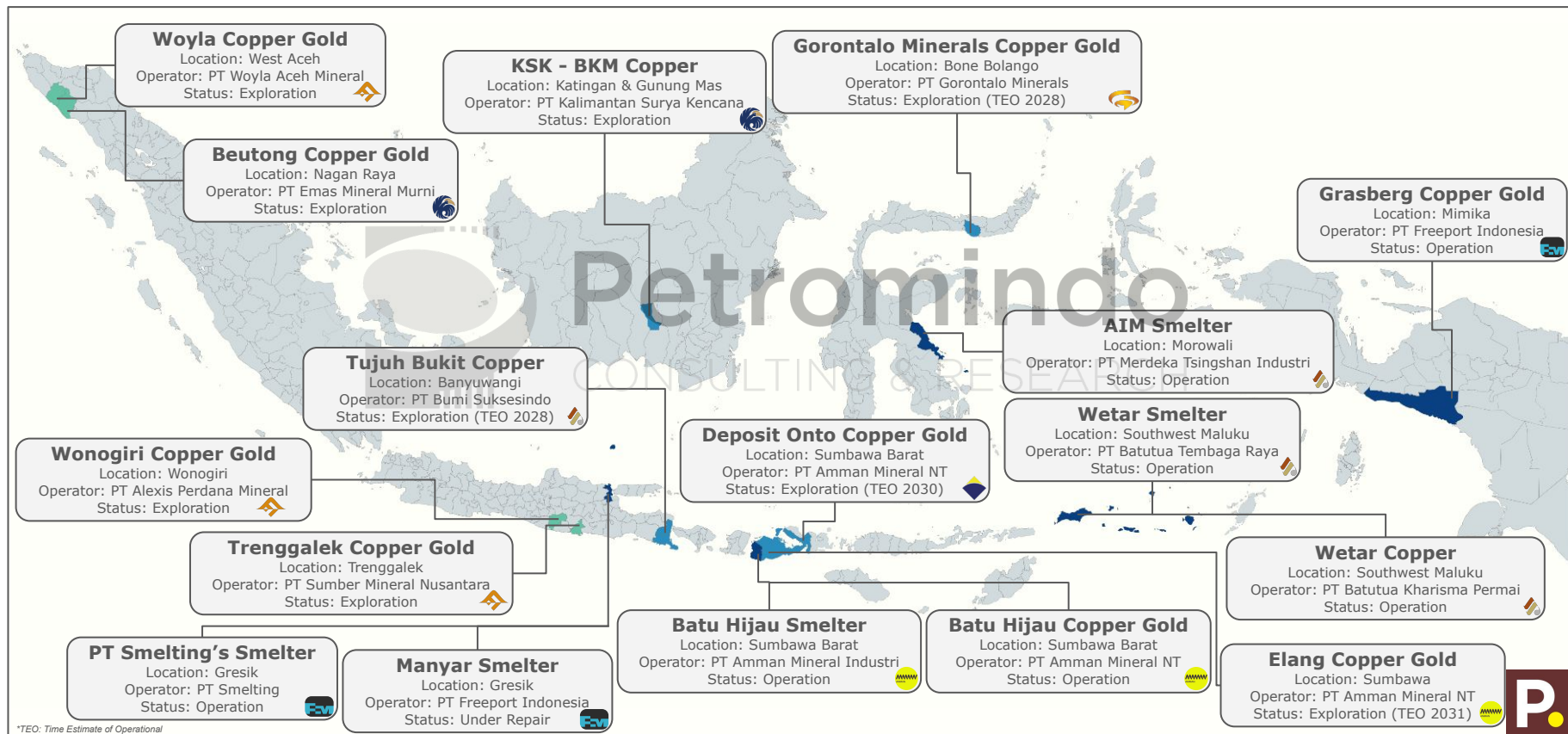
This situation arises because many large mines currently in operation will begin to deplete their reserves in the coming decades. Although new mine exploration is ongoing, it takes time for these projects to become operational. Additionally, declining ore grades pose a challenge, as newly developed mines tend to have lower copper grades compared to those in the past.

Despite advances in copper recycling, primary copper remains essential, making increased investment in new mines crucial.

# Indonesian Copper Reserves



# Map of Indonesia's Copper Mines and Smelters



\*TEO: Time Estimate of Operational

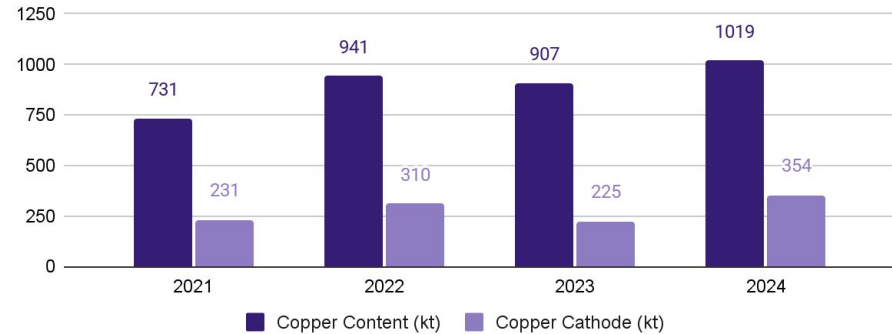
# Indonesian Copper Production

Indonesia's copper production from 2021 to 2024 has shown an upward trend. In 2024, based on estimates from the country's three largest copper producers (PT Freeport Indonesia, PT Amman Mineral, and PT Merdeka Copper Gold), Indonesia's mined copper content is expected to reach 1,019 thousand tons, while copper cathode production is projected at 354 thousand tons.

Historically, one of Indonesia's key copper export products has been concentrate. However, Indonesia's copper concentrate exports have declined over the past two years. Furthermore, as of January 1, 2025, copper concentrate exports are banned. Despite this, PT Freeport Indonesia successfully negotiated an export permit extension. They were granted the extension due to the fire incident at their smelter.

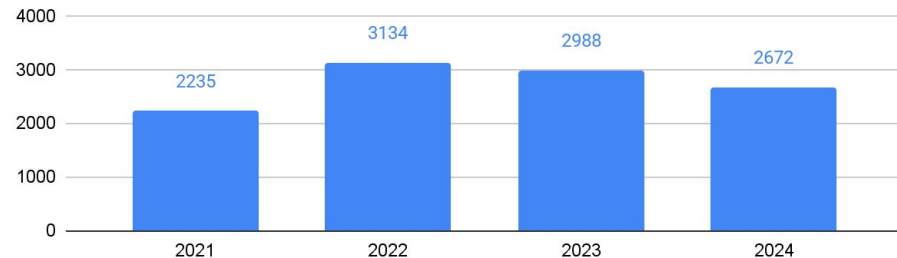
This indicates that the Indonesian government still has a tendency to grant temporary export permits under certain circumstances, particularly for major companies that contribute to both national and regional revenues.

Indonesian Copper Production



\*The copper cathode production for 2024 is estimated based on PT Smelting production capacity and PT Merdeka Copper Gold production.

Indonesian Copper Concentrate Export





# Company Focus: Freeport Indonesia

## Part 1/4

PT Freeport Indonesia (PTFI) is a company engaged in the mining and processing of copper, gold, and silver ores since 1967, with its mining operations located in Mimika, Central Papua. PTFI is owned by MIND ID (51.2%) and Freeport-McMoRan Inc. (48.8%).

In the copper sector, PTFI holds an IUPK in the Grasberg area, Mimika, covering 9,946 hectares. Currently, there are three mining operations in Grasberg: the Grasberg Block Cave, Deep Mill Level Zone, and Big Gossan, which collectively have reserves of 9.9 million tons of copper. PTFI is also developing the Kucing Liar project, located within the Grasberg area, with reserves of 3.2 million tons of copper. The project is planned to commence operations in 2029.

For its Grasberg mining operations, PTFI has been operating a 3x65 MW coal-fired power plant at Amamapare Port since 1998, which is scheduled to be retired in 2027. To replace it, PTFI is constructing a 265 MW gas and steam power plant with an investment of \$1 billion. This new power plant will use LNG as fuel to replace the coal-fired power plant.

Status	Operational
Location	Mimika and Gresik
Smelter Input Capacity	1,300,000 tpa (PT Smelting) 1,700,000 tpa (Manyar)
Smelter Output Capacity	342,000 tpa (PT Smelting) 600,000 tpa (Manyar)
Start Production Year	1972 (Grasberg Mine) 1996 (PT Smelting's Smelter) 2025 (Manyar Smelter)
Power Source	Mimika: Coal (195 MW) Gresik: PLN

### Source

1. Petromindo
2. PT Freeport Indonesia
3. Freeport McMoran





# Company Focus: Freeport Indonesia

## Part 2/4

PTFI operates the Manyar Copper Smelter in Gresik, valued at USD 4.2 billion, which produces copper cathodes. The smelter has a processing capacity of 1.7 million tpa of copper concentrate, producing 600,000 tpa of copper cathodes and 1,500,000 tpa of sulfuric acid (supported by its acid plant). A precious metal refinery is also being built near the smelter to process by-products.

Manyar Smelter began operations in Q3 2024. However, on October 14, 2024, a fire incident occurred at the smelter, resulting in a temporary halt in operations. The incident caused damage to the gas cleaning facility infrastructure used for sulfuric acid production. According to PTFI President Director Tony Wenas, there is currently a bottleneck of concentrate in warehouses in Papua, Manyar, and PT Smelting, as the Manyar smelter is unable to process it. Production at Grasberg is also affected, since the concentrate can only be processed by PT Smelting.

PTFI estimates that \$100 million will be needed to repair the damages, which is covered by insurance. The smelter repair is projected to be completed by mid-2025 and estimated to reach full capacity only by the end of 2025. In response to this incident, PTFI applied for approval of an export permit for copper concentrate (the export permit expired on December 31, 2024) and successfully obtained it at the end of February 2025.

Source

1. Petromindo
2. PT Freeport Indonesia
3. Freeport McMoran



Grasberg Underground Mine



Manyar Smelter



# Company Focus: Freeport Indonesia

## Part 3/4

PTFI owns another smelter in Gresik through its subsidiary, PT Smelting. PT Smelting is owned by PT Freeport Indonesia (66.02%) and Mitsubishi Materials Corporation (33.98%) as of June 2024. This is the first copper cathode smelter in Indonesia. The smelter was established to fulfill PTFI's obligations under the Contract of Work (PTFI's operating permit from 1991 to 2018), which required domestic processing and refining.

The smelter produces copper cathodes with an annual capacity of 342,000 tons as its main product. They also have an acid plant to process residual SO<sub>2</sub> gas from the smelting process, producing 920 ktpa of sulfuric acid. This facility can process 1.3 mtpa (about 40% of PTFI concentrate production capacity) of copper concentrate supplied by PTFI's mine in Mimika, Papua. Approximately 200,000 tons of copper cathodes produced by the smelter are consumed by the local market, while the remaining is exported.



PT Smelting's Smelter

### Source

1. Petromindo
2. PT Freeport Indonesia
3. Freeport McMoran



# Company Focus: Freeport Indonesia

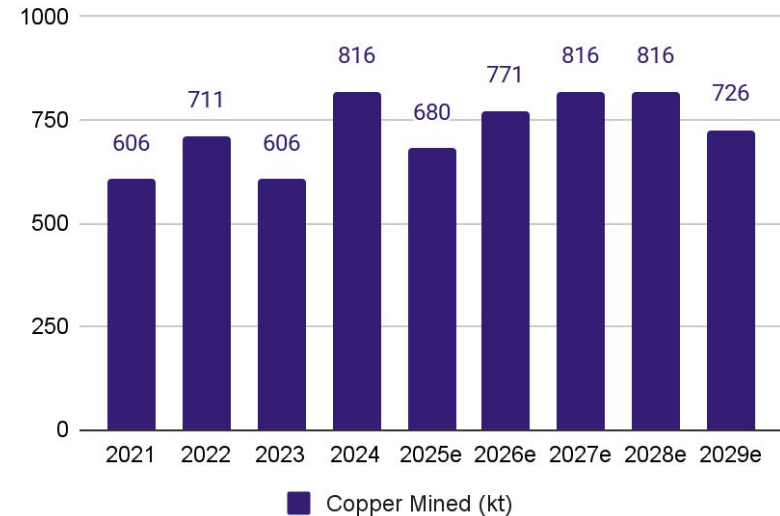
## Part 4/4

PT Freeport Indonesia (PTFI) is currently seeking to extend its existing IUPK (Special Mining Business License), which is valid until 2041, with plans to extend it further to 2061. To secure this extension, PTFI is required to build a third smelter, which is planned to be constructed in Fakfak, West Papua. The smelter will have a processing capacity of 700,000 tons of copper concentrate per year. It will be located in the Fakfak Industrial Area, which also houses a petrochemical plant, allowing the smelter to utilize sulfuric acid (a by-product of the smelting process) to supply the petrochemical plant's needs.

In 2024, based on the Q4 report by Freeport-McMoRan (FCX), PTFI achieved its highest mine production in recent years, as well as compared to future estimates. For the full year of 2024, PTFI produced 816 kilotons of copper from its mine production.

In 2025, PTFI lowered its production target based on its Q4 2024 report, likely due to the pending approval of its concentrate export permit extension and the Manyar smelter not yet being operational, with repairs expected to be completed by mid-year. However, with the export permit extension now secured, it is possible that PTFI will increase its production target in 2025.

### PTFI Production



\* The data for 2025-2029 are based on company guidance

#### Source

1. Petromindo
2. PT Freeport Indonesia
3. Freeport McMoran



# Company Focus: Amman Mineral Internasional

## Part 1/3

PT Amman Mineral Internasional Tbk, located on Sumbawa Island (West Nusa Tenggara), has been conducting mining operations since 2000. The company is currently owned by PT Sumber Gemilang Persada (32.2%), PT Medco Energi Internasional Tbk (20.9%), PT AP Investment (15.5%), PT Alpha Investasi Mandiri (7.1%), PT Pesona Sukses Cemerlang (6.5%), the Board of Directors (0.6%), and the public (17.2%) following its IPO (6,328,208,800 issued shares) in July 2023.

AMMAN operates an integrated mining operation that includes ore mining, processing facilities, a copper cathode smelter, a precious metals refinery, an acid plant, and power generation facilities.

Currently, AMMAN conducts ore mining at the Batu Hijau mine in West Sumbawa Regency. Since mining began, the mine has cumulatively produced 10.035 billion pounds of copper and 10.71 million ounces of gold as of Q3 2024. Batu Hijau has reached Phase 7 (with remaining copper reserves) and is transitioning to Phase 8 in 2025, with operations expected to continue until 2030. Afterward, mining operations will shift to the Elang mine in Sumbawa Regency. The Elang mine contains ore reserves of 1.415 billion tons, with 10.396 billion pounds of copper, and is expected to sustain operations until 2050.

Status	Operational
Location	Sumbawa Island, East Nusa Tenggara
Processing Plant Capacity	85,000,000 tpa ore
Smelter Input Capacity	900,000 tpa concentrate
Smelter Output Capacity	220,000 tpa Cu cathode
Start Production Year	2000 (Batu Hijau Mine) 2025 (Batu Hijau Smelter)
Power Source	Coal (112 MW) Solar (26.8 MWp) Diesel (45 MW) LNG via CCPP (550 MW)



# Company Focus: Amman Mineral Internacional

## Part 2/3

Amman's ore processing facility currently has an input capacity of 40 million tons of ore, which is being expanded to 85 million tons. This expansion, planned for completion in Q4 2025, is intended to accommodate ore production from Batu Hijau Phase 8 and the Elang mine in the future.

Amman has also constructed a smelter capable of processing 900,000 tpa (tons per annum) of concentrate, producing 220,000 tons of copper cathodes and 830,000 tons of sulfuric acid annually. Additionally, a precious metals refinery (PMR) has been built to process 970 tons of anode slime annually, yielding 18 tons of gold, 55 tons of silver, and 77 tons of selenium.

The smelter, completed in Q2 2024, is currently (Feb 2025) operating at 48% capacity and is expected to reach full operation starting in April 2025. The total investment for this smelter amounts to US\$ 1.4 billion.

To meet its operational energy needs, Amman currently operates a 112 MW coal-fired power plant (PLTU), a 26.8 MWp solar power plant (PLTS), and a 45 MW diesel power plant (PLTD). Additionally, a 2x50 MW gas and steam power plant (PLTGU) was completed in Q2 2024 to support smelter commissioning. A 450 MW PLTGU and LNG regasification and storage facilities are also planned for completion in Q1 2025 to provide electricity and fuel for the smelter furnaces.



Ore Processing Plant



Copper Cathode Smelter



Gas and Steam Power Plant

Source

1. Petromindo
2. Amman Mineral Internacional

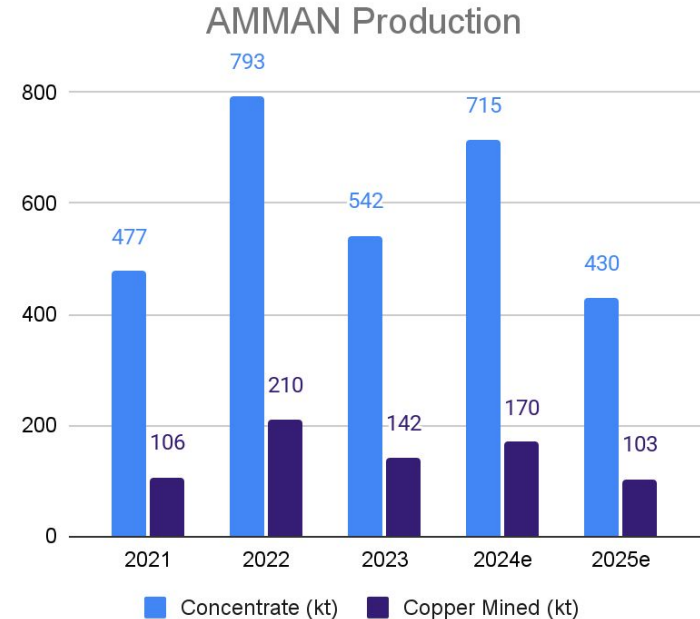


# Company Focus: Amman Mineral Internasional

## Part 3/3

In 2024, up until the end of Q3, AMMAN produced 637,000 tons of concentrate (335 million pounds of copper), with a full-year production target of 715,000 tons of concentrate (170,000 tons of copper). This figure is higher than the 2023 production, which stood at 542,000 tons of concentrate (142,000 tons of copper). Meanwhile, the production target for 2025 is expected to decrease, with a target of 430,000 tons of concentrate (103,000 tons of copper). This reduction is due to the transition from Batu Hijau Phase 7 to Phase 8 and the ongoing expansion of the processing plant.

This output will be lower than the requirements of the smelter, which is planned to commence operations in Q1 2025 with a processing capacity of 900,000 tpa of concentrate. As a result, if the smelter operates at full capacity, AMMAN will need to source additional concentrate supply from external parties.



\* The data for 2024 and 2025 are based on company guidance



# Company Focus: Merdeka Copper Gold

## Part 1/3

PT Merdeka Copper Gold Tbk (MDKA) was established in 2012 and operates in the mining and processing of minerals such as gold, copper, and silver. The company's ownership structure includes PT Saratoga Investama Sedaya Tbk (19%), PT Mitra Daya Mustika (11.9%), PT Suwarna Arta Mandiri (5.5%), Garibaldi Thohir (7.7%), and the public (56%).

MDKA began its copper mining operations in 2018 through the acquisition of the Wetar Copper Mine in Southwest Maluku, which had been in operation since 2014. The mine is managed by PT Batutua Kharisma Permai (BKP), which holds a Copper Mining Business License for Production Operations (IUP-OP), and PT Batutua Tembaga Raya (BTR), which holds an Industrial Business License (IUI) for copper cathode production using hydrometallurgical methods.

Then, in 2021, PT Merdeka Tsingshan Indonesia (MTI) was established to develop the Acid Iron Metal (AIM) project in Morowali, which will also process pyrite ore from Wetar.

Status	Operational
Location	Southwest Maluku, Banyuwangi, Morowali
Smelter Input Capacity	2,500,000 tpa ore (Wetar)
Smelter Output Capacity	25,000 tpa (Wetar) 17,000 tpa (AIM)
Start Production Year	2000 (Wetar Mine & Smelter) 2025 (AIM Smelter)
Power Source	Southwest Maluku: Diesel & Solar Morowali: Coal Banyuwangi: PLN



# Company Focus: Merdeka Copper Gold

## Part 2/3

The Wetar Mine, operated by BKP, had total reserves of 21.6 Mt of ore (264.3 kt of copper) as of December 31, 2023. The ore produced by BKP is processed at BTR's facility, which has a production capacity of 25 ktpa of copper cathode. By early Q3 2025, the Wetar mine is expected to cease operations due to depleted reserves. Meanwhile, ore processing in Wetar is estimated to continue until H2 2026. However, operations in Wetar will remain, limited to transporting ore from the stockpile to the AIM project in Morowali, which is expected to continue for up to 20 years.

In addition, MDKA is developing the Tujuh Bukit Copper Project in Banyuwangi, which holds 1,740 Mt of ore resources containing 8.2 Mt of copper. The project is designed to process 24 Mtpa ore, producing 110 ktpa of copper for over 25 years. In September 2023, the project signed a 280 MW power supply agreement with PLN.

Pyrite ore from BTR's processing residue is sent to the Acid Iron Metal (AIM) project, currently being developed by MDKA through PT Merdeka Tsingshan Indonesia (MTI) at IMIP in Morowali, Southeast Sulawesi. At IMIP, the pyrite ore is processed using pyrometallurgical methods to produce 17 ktpa of copper cathodes. Low-grade ore from Wetar is also processed at this smelter. The Wetar Mine has also completed 10 shipments of pyrite ore to the AIM plant, which has processed 119 kt of pyrite ore and produced 101 kt of concentrate, although the copper cathode plant is still in the commissioning phase. The AIM project is expected to commence commercial operations in mid-2025.

Source

1. Petromindo
2. Merdeka Copper Gold



Wetar Copper Mine



Wetar Copper Cathode Processing Plant



MTI AIM Plant





# Company Focus: Merdeka Copper Gold

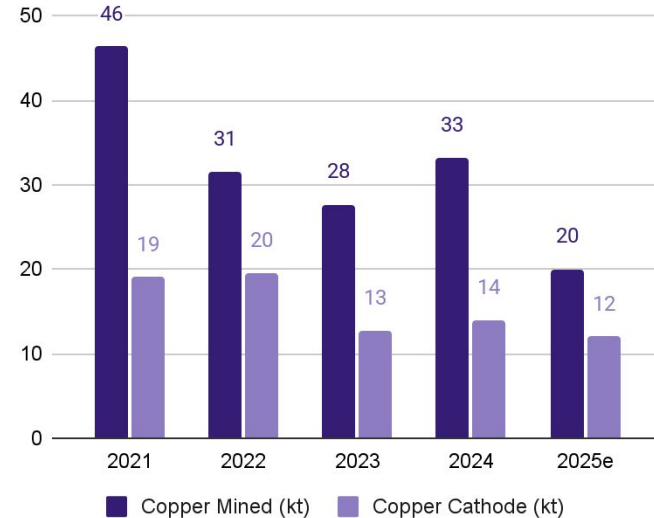
## Part 3/3

In 2024, the Wetar mine produced 33 kt of copper and 14 kt of copper cathode, an increase from the previous year's production. Meanwhile, based on the 2025 guidance, copper cathode production is expected to decline to 12 kt. This may be influenced by the cessation of mining operations in H2 2025.

The AIM project has the potential to increase MDKA's copper cathode productivity in 2025 if it successfully begins operations as scheduled. However, it remains uncertain when the copper cathode production line will commence operations, as only sulfuric acid production has been commercially operational so far.

Meanwhile, Petromindo estimates that Wetar mine production in 2025 will not exceed 20 kt, based on the remaining available reserves. As a result, Wetar mine production next year will be significantly lower than in 2024.

MDKA Production



\* The data for 2025 is based on company guidance and estimation



# Upcoming Project: Merdeka's Tujuh Bukit Mine

## Tujuh Bukit Copper Project

MDKA's Tujuh Bukit mine, located in Banyuwangi, East Java, is operated by PT Bumi Suksesindo, a subsidiary of Merdeka Copper Gold Tbk. Since 2018, Merdeka has allocated US\$200 million for detailed feasibility studies to advance the Tujuh Bukit Copper Project. The Pre-Feasibility Study (PFS) confirms the project's strong economic viability, supporting the development of a world-class, long-life underground mine through a phased approach.

As of March 2024, the latest Mineral Resource Estimate (MRE) reports total mineral resources of 1,738 million tonnes, including 755 million tonnes of indicated resources. The deposit contains 8.2 million tonnes of copper and 27.9 million ounces of gold. Once at full capacity, the mine is expected to process 24 million tonnes of ore per year (Mtpa), yielding over 110,000 tonnes of copper and 350,000 ounces of gold annually for more than 30 years.

Merdeka is currently focused on project optimization before advancing to a bankable feasibility study. Key priorities include enhancing metallurgical recoveries, increasing underground production capacity, and assessing the potential for open-pit mining to extract additional copper ore. To support its operations, MDKA secured a 280 MW power supply agreement with PLN in September 2023.

### Source

1. Petromindo
2. Merdeka Copper Gold



# Upcoming Project: Amman Mineral's Elang Mine

## Elang Copper Gold Project

The Elang mine, owned by PT Amman Mineral Nusa Tenggara, a subsidiary of Amman Mineral Internasional, is located in Sumbawa Regency, 60 km from the Batu Hijau mine in West Sumbawa. This project is expected to replace Batu Hijau's operations, which are currently in Phase 8 and are planned to end by 2030.

The JORC-compliant report indicates that the mine contains 1.415 billion tons of ore reserves, with a total copper content of 10.396 billion pounds and gold content of 15 million ounces. Additionally, the mineral resources, excluding reserves, amount to 2.282 billion tons of ore, containing 14.16 billion pounds of copper and 19.4 million ounces of gold. This mine is expected to sustain Amman's mining operations until 2050.

Ore from the Elang mine is planned to be processed at the Batu Hijau processing plant. A definitive feasibility study (DFS) has been ongoing since 2023 and is expected to be completed in H1 2025. The study also includes an assessment of power supply augmentation through solar and/or hydro power.



# Upcoming Project: Sumba Timur's Onto Mine

## Onto Copper-Gold Project

The Onto copper-gold project is a mining concession located in Sumbawa, West Nusa Tenggara Province, operated by Sumbawa Timur Mining (STM). STM is 80% owned by Eastern Star Resources, a subsidiary of Vale SA, and 20% by the state-owned company Aneka Tambang (ANTAM).

In 2023, STM reported that mineral exploration drilling within the concession had reached a depth of 2,050 meters, making it the deepest drill hole in the area. This well will be utilized to collect rock characterization data for geological and engineering studies.

As of December 2021, the estimated ore mineral resource within the concession was approximately 2.1 billion tons. This includes an indicated mineral resource of 1.1 billion tons with grades of 0.96% copper (Cu) and 0.58 grams per ton gold (g/t Au), as well as an inferred mineral resource of 1 billion tons with grades of 0.7% Cu and 0.4 g/t Au.



# Upcoming Project: Asiamet's KSK-BKM and Beutong Mine

## **KSK - BKM Copper**

This project is located within the Kalimantan Surya Kencana (KSK) Contract of Work (CoW) area in Palangkaraya, Central Kalimantan, and is fully owned by Asiamet Resources. The KSK area covers 390 km<sup>2</sup> and contains gold and gold-copper deposits. According to the 2023 feasibility study, the Beruang Kanan Main (BKM) deposit has a total resource of 69.6 million tons @ 0.6% Cu, containing 451.9 thousand tons of copper. The ore reserves stand at 40.8 million tons @ 0.7% Cu, with a total copper reserve of 272 thousand tons and 198 thousand tons of soluble copper at a 0.5% soluble Cu grade. The mine is planned to operate for 9.2 years, with a production capacity of 20,000 tons per year of copper cathodes, using hydrometallurgical methods.

The project is expected to generate a total revenue of USD 1.4 billion and an EBITDA of USD 655.3 million. Asiamet requires an initial capital investment of USD 235.4 million for development and construction.

## **Beutong Copper Gold**

The Beutong Copper Gold Project is located in Nagan Raya Regency, Aceh, covering an area of 10,000 hectares. The Mining Operation Production License (IUP-OP) for this project is held by PT Emas Mineral Murni, with 80% ownership by Asiamet through Beutong Resources Pte Ltd, while the remaining 20% is owned by PT Media Mining Resources.

The project's mineral resources include 509 million tons @ 0.48% Cu, containing 2.43 million tons of copper, 0.13 g/t Au (equivalent to 2.11 million ounces of gold), and 1.28 g/t Ag (equivalent to 20.9 million ounces of silver). Additionally, the area also contains molybdenum with a concentration of 120 ppm.



# Upcoming Project: Gorontalo Minerals' Mine

## Gorontalo Minerals Copper Gold

PT Gorontalo Minerals (GM) is a subsidiary of PT Bumi Resources Minerals Tbk (BRMS), which owns 80% of GM, while the remaining 20% is held by PT Aneka Tambang Tbk (ANTM). GM holds a Contract of Work (CoW) for a 24,995-hectare mining concession located in Bone Bolango, Gorontalo, Sulawesi.

Currently, GM is conducting exploration at the Sungai Mak and Cabang Kiri sites. According to JORC Resource estimates, the total resources in Sungai Mak, Cabang Kiri, Kayu Bulan, and Motomboto amount to 392 million tons, with an average copper grade of 0.49% and gold grade of 0.43 g/t. GM received construction and production permits in February 2019, with a planned production period of 30 years.

GM's copper mining project is still in the exploration phase and is expected to begin production after 2028. The current reserves stand at approximately 100 million tons of ore, with total resources of around 400 million tons, and copper grades ranging between 0.5% and 0.7%. The company plans to conduct further drilling to increase its reserve and resource estimates. GM plans to process the ore into concentrate and sell it to Amman's smelter.



# Upcoming Project: Woyla and Trenggalek Mine

## Woyla Copper-Gold Project

The Woyla Copper-Gold Project is located in West Aceh Regency, Aceh Province, covering a contract area of 24,260 hectares. This area was previously explored by Barrick Gold (1996–1998) and Newcrest (1999–2002) and is currently still under exploration by Far East Gold Ltd (FEG) through its subsidiary, PT Woyla Aceh Minerals.

The contract area includes several prospective zones, such as Anak Perak, Rek Rinti, Aloe Eumpeuk, Aloe Rek, and Kareung Reuboeh, which contain gold-silver mineralization, while Beurieung contains copper-gold deposits. Historical channel sampling conducted by Barrick in 1997 on the quartz-sulfide veins returned 40 meters @ 0.13% Cu and 0.12 g/t Au. FEG currently holds a 51% interest in the Woyla Copper-Gold Project, which will increase to 80% once the company completes a feasibility study and defines a maiden JORC resource estimate for the project.

## Trenggalek Copper-Gold Project

The Trenggalek Copper-Gold Project is located in Trenggalek, East Java, covering a Mining Operation Production License (IUP-OP) area of 12,813 hectares. This project has been identified by the ministry as one of the top three priority greenfield projects.

Previously, the area was explored by PT Aneka Tambang in the 1990s, followed by a joint venture between Arc Exploration Ltd and Anglo American (2012–2014), and later by PT Dunusa Tambang Nusantara (2015–2018). Currently, the IUP-OP is valid from 2019 to 2029 and is held by PT Sumber Mineral Nusantara, which is owned by PT Jatim Tambang Prima (51%) and Sumber Abadi Nusantara (49%). The board of directors and management of all three companies are under the control of Far East Gold (FEG). In 2024, Eurasian Resources Group (ERG) invested A\$4 million at FEG's group level, making ERG the company's third-largest shareholder.



# Upcoming Project: Wonogiri Mine

## Wonogiri Copper-Gold Project

Far East Gold also owns a copper-gold project in Wonogiri, Central Java, which holds a Mining Business License for Production Operations (IUP-OP) covering an area of 3,928 hectares.

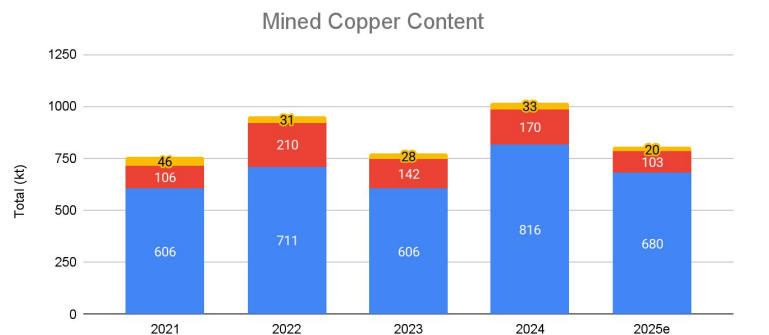
This project contains a JORC-compliant mineral resource equivalent to 1.15 million ounces of gold, consisting of 996,000 ounces of gold (53% measured & indicated) and 190 million pounds of copper (43% measured & indicated). Exploration efforts have included 21,771 meters of drilling, primarily at the Randu Kuning porphyry deposit.

The Randu Kuning prospect in Wonogiri hosts a shallow, gold-rich porphyry deposit, consistently yielding economically viable gold (Au) and copper (Cu) mineralization from the surface. Metallurgical testing has shown promising results, with recoveries of up to 89.0% gold and 93% copper through flotation, along with the potential for 55% gold recovery via gravity separation.

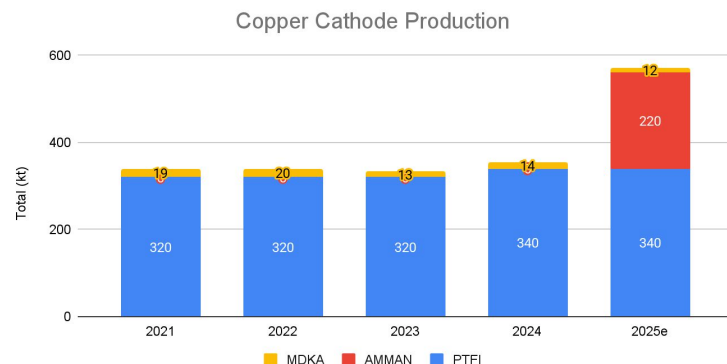
In 2024, progress continued on obtaining the AMDAL environmental permit for the planned Carbon-in-Leach (CIL) processing mill, which is expected to operate at a capacity of up to 1 million tonnes per year.



# Indonesian Copper Cathode Outlook



\*Mined copper content refers to the amount of copper contained in the ore that has been extracted from the mine before any processing



\*The PTFI and AMMAN productions are estimated based on PT Smelting and Batu Hijau Smelter capacity

Indonesia’s mined copper production is expected to decline by 216 thousand tons in 2025, based on projections from the country’s three largest copper producers. This decline is due to PT Freeport Indonesia (PTFI) and PT Amman Mineral (AMMAN) targeting lower production levels compared to 2024, with reductions of 136 thousand tons and 67 thousand tons, respectively. Meanwhile, PT Merdeka Copper Gold (MDKA) will cease mining production in Wetar by early Q3 2025.

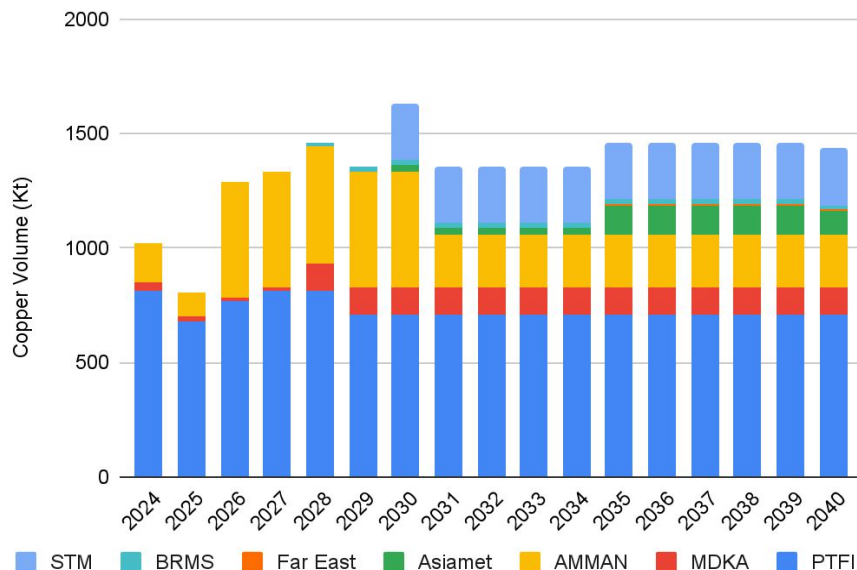
However, Indonesia’s copper cathode production capacity is set for a significant increase in 2025. This growth is driven by the operation of AMMAN’s smelter in Sumbawa. If it successfully reaches full operation, this smelter has the potential to increase copper cathode production by 60% compared to last year.

MDKA’s smelter in Morowali has not yet begun commercial operations at the start of this year, so it is expected to have minimal impact on Indonesia’s total production. Meanwhile, PTFI’s smelter in Gresik is still under repair and is scheduled for completion in mid-2025. Commercial operations will take additional time and are estimated to reach full capacity only by the end of 2025.

With these additions, Indonesia’s total copper cathode production in 2025 is projected to reach 572 thousand tons. In the future, once MDKA’s smelter and PTFI’s Manyar smelter are fully operational, production capacity could reach 1,202 thousand tons. This would strengthen Indonesia’s position as one of the world’s top copper producers, surpassing Russia’s copper production in 2023, which ranked 4th globally.

# Indonesian Copper Mining Outlook

Outlook: Copper Mining Production



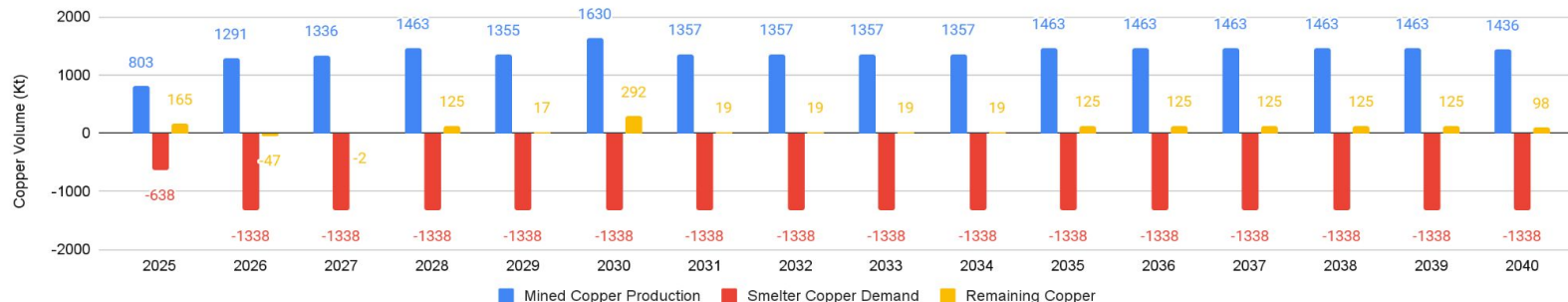
With the existence of copper mining projects, both operational and in the exploration stage, copper production is expected to increase.

The Tujuh Bukit (MDKA) and Elang (AMMAN) projects are the most certain to begin operations in 2028 and 2031, respectively. If the Gorontalo Minerals (BRMS), KSK BKM (Asiamet), and Onto (STM) mines can commence operations in 2028, 2030, and 2030, respectively, copper production could reach 1.64 million tons by 2030, marking the highest level until 2040.

In 2031, a decline in production from AMMAN is expected as operations shift to the Elang mine, which is projected to have lower production than Batu Hijau. The Wonogiri (Far East) and Beutong (Asiamet) projects are assumed to begin operations in 2035, while the Woyla and Trenggalek projects have not been included due to the absence of reserve estimates.

# Indonesian Copper Balance Outlook

Outlook: Copper Mining Production and Smelter Demand



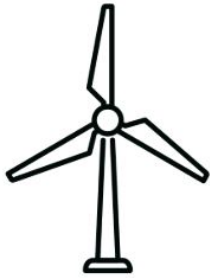
\* Smelter demand is calculated based on capacity, with the copper recovery rate from mine to cathode assumed to be 90%

The existing copper smelter capacity in Indonesia is still insufficient to absorb the total mine production. In 2025, a surplus in copper mine production is expected, as Freeport Indonesia's Manyar smelter will likely only resume operations in late 2025 after completing repairs due to a fire incident.

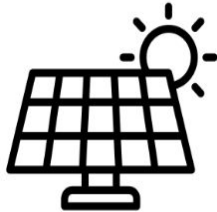
Overall, during the 2026 to 2035 period, mine production and smelter demand are expected to remain relatively balanced. A significant surplus in mine production is projected in 2028, when Tujuh Bukit (MDKA), Gorontalo Minerals (BRMS), and Kucing Liar (PTFI) begin operations, as well as in 2030, if KSK-BKM (Asiamet) and Onto (STM) commence production. However, after 2035, another major surplus may occur if additional projects start operations.

If new reserve exploration or the planned projects experience delays in operation, new investments in copper refineries are unlikely to be significant in the next 10 years. However, considering Indonesia's copper resource potential and the rising future demand for copper, investment in new mining projects still holds strong potential, which could drive further copper refinery investments to accommodate future production growth.

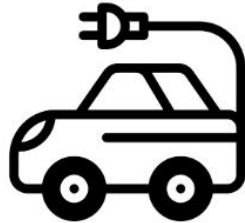
# The Impact of Government Targets on Copper Demand and Exports



**1.6**  
ton/MW



**5.5**  
ton/MW



**0.08**  
ton/unit

Copper is a crucial material used across various industries, particularly in electric vehicles and renewable energy. According to the Chairman of the Indonesian Miners Association, domestic copper demand currently stands at 350,000 tons.

By 2030, the Indonesian government aims to increase solar power capacity by 1.4 GW and wind power capacity by 1.2 GW. Additionally, in the electric vehicle industry, the government targets a domestic production capacity of 600,000 BEVs by 2030. For solar and wind power, each MW of installed capacity requires 5.5 tons and 1.6 tons of copper, respectively, while each BEV requires 83 kg of copper per unit.

These targets are expected to increase Indonesia's copper demand by 59.4 thousand tons. Without considering changes in demand from other sectors, Indonesia's total copper demand in 2030 is projected to reach 409 thousand tons.

This figure remains significantly lower than Indonesia's domestic copper production capacity of 1.2 million tons, allowing the country to export around 800 thousand tons of copper to the global market. With this, Indonesia has the potential to become one of the world's largest copper metal exporters.

Source

1. IESR
2. Kontan
3. Kementerian Perindustrian RI
4. Processed by Petromindo

# Key Takeaways

- 1** Copper mining and processing companies are poised for robust growth, driven by the rising global demand for copper in the coming years.
- 2** Despite the ban on copper concentrate exports, Indonesia's existing smelter capacity is already sufficient to accommodate the nation's copper mine output.
- 3** Indonesia's copper production is projected to continue its upward trajectory, reaching its peak by 2030.
- 4** Investment in new smelting facilities in Indonesia is expected to remain constrained over the next decade, unless substantial new mining projects with significant copper reserves are developed.
- 5** With smelter production anticipated to surpass domestic consumption, Indonesia has the potential to emerge as one of the world's leading exporters of refined copper.

Thank You