IGF

INTERGOVERNMENTAL FORUM on Mining, Minerals, Metals and Sustainable Development

COUNTRY PROFILE

# Indonesia

**POPULATION**
284 million

**TOTAL AREA**
1,904,569 km²

**CAPITAL**
Jakarta

**GDP**
USD 1.4 trillion (2024)

## 1. Geological Considerations

### 1.1 Mining-relevant scorecard

**Published critical mineral strategy and/or strategic plan[C]**
2023
Yes

**International coordination mechanisms (mining-related, in force)[B]**
2025
**Count:** 3 (Japan, 2024; United Kingdom, 2024; Brazil, 2025)

**Mineral rents (% GDP)[E]**
2021
**Share:** 1.9

**Trade or export restrictions[D]**
2025
**Commodities:** Nickel, bauxite, copper, tin, metal scrap

**Logistics performance (1–5)[E]**
2023
**Score (1-5):** 3

**Access to electricity (%)[E]**
2023
**Score:** 99.4

**State-owned/affiliated mining company[C]**
2025
PT Vale Indonesia (34% state via Mining Industry Indonesia (MIND ID); PT Freeport Indonesia (51% state), Antam (state-controlled).

**Extractive Industries Transparency Initiative (EITI) outcomes and impact (1–100)[A]**
2024
**Score:** 73

**EITI transparency (1–100)[A]**
2024
**Score:** 63.6

Source: [A]EITI, 2023; [B]International Energy Agency (IEA), 2025.; [C]Ministry of Energy and Mineral Resources (MEMR), 2020, [D]Organisation for Economic Co-operation and Development, 2025; [E]World Bank Open Data, n.d.

### 1.2 Reserves

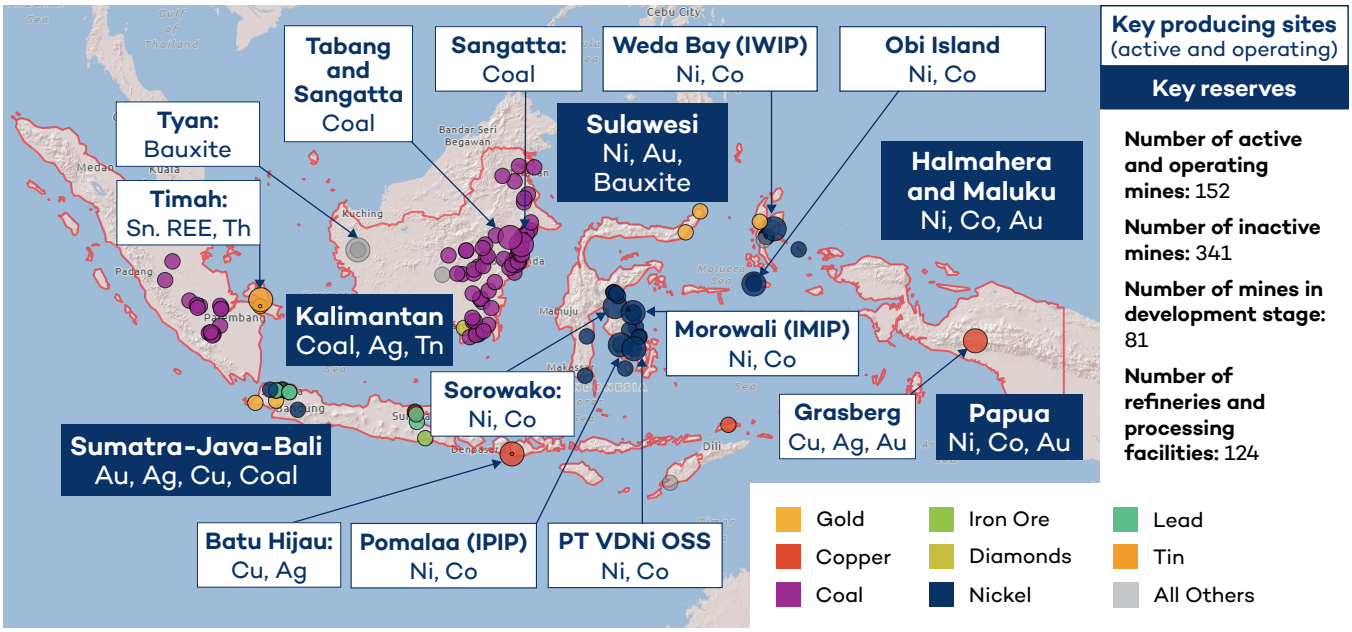
Reported key mineral reserves of major mining products in Indonesia as of 2025

| Commodity | Unit | Reserves |
|---|---|---|
| **Copper** | Metric tonnes (mt) | 21,000,000 |
| **Gold** | mt | 3,600 |
| **Nickel** | mt | 62,000,000 |
| **Tin** | mt | 1,400,000 |
| **Bauxite** | mt (dry) | 650,000,000 |
| **Cobalt** | mt | 640,000 |
| **Zirconium** | mt | 3,400,000 |

Source: U.S. Geological Survey, n.d.-a.

## 1.3 Key Mines and Producing Sites

Key mining regions and producing projects by commodity, 2025




*Note: Points illustrated in the high-level map above represent only active and operational projects in Indonesia, as of January 2026, to allow for visualisation.*

Source: S&P Global Market Intelligence, 2026b.

## 1.4 Key Mining Projects, Indonesia

Key operational mining projects by commodity, Indonesia, 2024

### Tabang
**Main commodity:** Coal
**Global production share of primary commodity:** N/A
**Production (2024):** 57,000,000 mt
**Controlling companies:** White Energy Co. Ltd., PT bayan Resources Tbk.

### Sangatta
**Main commodity:** Coal
**Global production share of primary commodity:** 0.66%
**Production (2024):** 45,200,000 mt
**Controlling companies:** PT bumi Resources Tbk, Power Co., Mountain Netherlands Invt b.V.

### Pomalaa
**Main commodity:** Nickel
**Global production share of primary commodity:** 0.52%
**Production (2024):** 20,103 mt
**Controlling companies:** PT Aneka Tambang Tbk, Hongkong CbL Ltd.
**Notable by-products:** Iron Ore, Cobalt, Magnesium

### Weda bay
**Main commodity:** Nickel
**Global production share of primary commodity:** 0.79%
**Production (2024):** 30,500 mt
**Controlling companies:** Tsingshan Holding Group, ERAMET S.A., PT Aneka Tambang Tbk
**Notable by-products:** Cobalt

### Sorowako
**Main commodities:** Nickel
**Global production share of primary commodity:** 1.85%
**Production (2024):** 71,311 mt
**Controlling companies:** PT Vale Indonesia Tbk
**Notable by-products:** Cobalt (0.39%)

### Tayan
**Main commodity:** Bauxite
**Global production share of primary commodity:** 0.01%
**Production (2024):** 3,470,000 mt
**Controlling companies:** PT Aneka Tambang Tbk

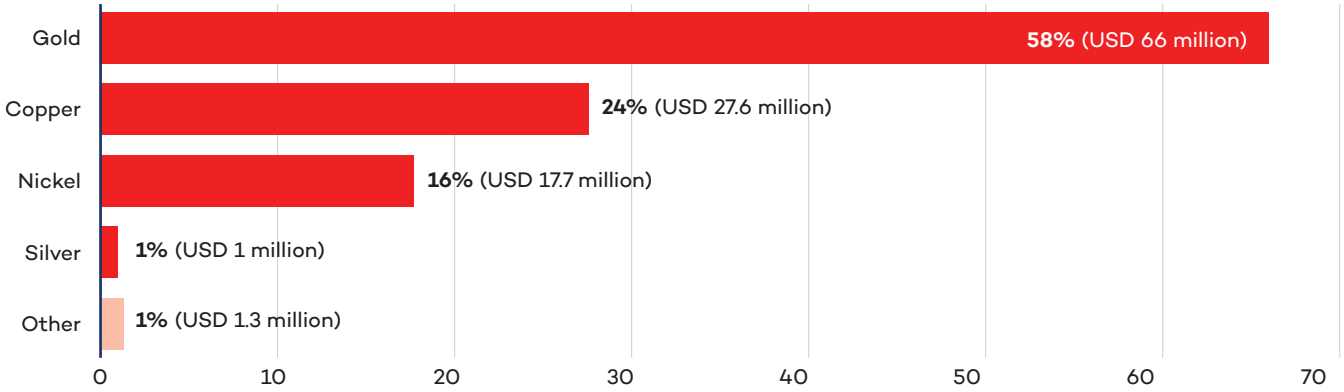
### Batu Hijau
**Main commodity:** Copper
**Global production share of primary commodity:** N/A
**Production (2024):** 179,169 mt
**Controlling companies:** PT Amman Mineral Internasional, PT AP Investment
**Notable by-products:** Gold, Silver

### Timah Offshore
**Main commodity:** Tin
**Global production share of primary commodity:** n/a
**Production (2024):** 11,713 mt
**Controlling companies:** PT TIMAH Tbk
**Notable by-products:** Lanthanum, Thorium, Cerium, Yttrium, Ilmenite, Zircon

Source: S&P Global Market Intelligence, 2026a.

## 1.5 Exploration

Exploration budget (USD million) and national exploration budget share per commodity (%)



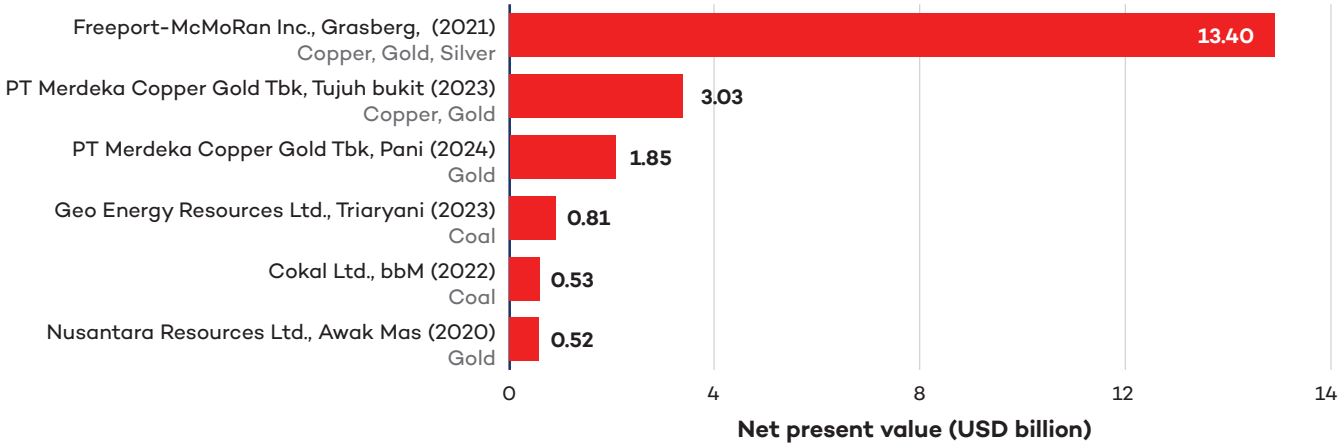

Source: S&P Global Market Intelligence, 2026a.

## 1.6 Artisanal and Small-Scale Mining

Indonesia is reported to have around 250,000 artisanal miners extracting gold, tin, and diamonds. Artisanal gold miners operate in locations such as the Kalanaman River in Central Kalimantan, Tatuelu in North Sulawesi, and the Gorontalo Utara Regency (Maia et al., 2019). In these regions, gold is typically extracted from alluvial deposits in river systems, often resulting in siltation and degradation of aquatic ecosystems. Given Indonesia's extensive hydrographic network, the use of mercury for gold amalgamation can spread at the local and regional scales. An estimated 50,000 artisanal miners also extract cassiterite from alluvial deposits in the Bangka and Belitung Islands (Meutia et al., 2022). Land-based alluvial mining can result in abandoned pits and barren tailings heaps, while offshore dredging may disrupt aquatic ecosystems, affect fish habitat, and create tensions with fishing communities (Gully, 2018). Child labour has also been reported at certain ASM sites, where poor mining practices and techniques, as well as limited access to safety equipment, increase the risk of serious or fatal accidents (Gulley, 2017).

## 1.7 Top Five Development Projects by Net Present Value

Key development projects by estimated net present value (NPV) in Indonesia, 2020–2026, in USD billion



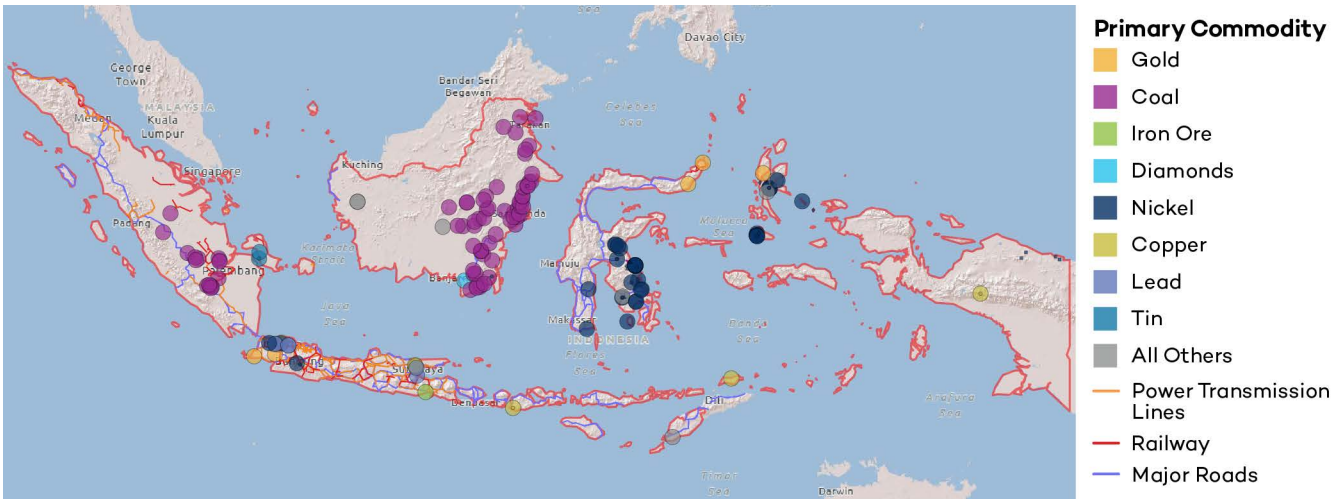

Source: S&P Global Market Intelligence, 2026a.

**Methodology note:** *The bar chart above shows NPVs (in USD billion) of Indonesia's top development projects between 2020 and 2026. Only base case values (most likely set of assumptions, serving as the main reference scenario) are shown. For the reported NPV, if after-tax data is not available, the pre-tax value is reported. Key development projects include those at the preliminary economic assessment, prefeasibility, full feasibility, and mine plan stages.*

# 2. Industrial Considerations

## 2.1 Mining, Infrastructure, and Energy Map, Indonesia (2025)

Mining, infrastructure, and energy map, Indonesia, 2025



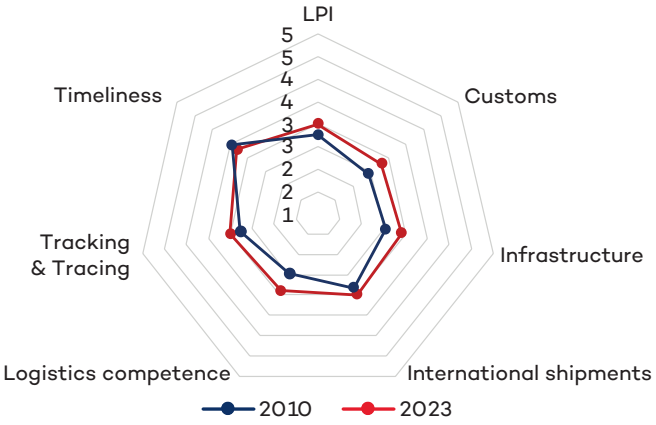

Source: S&P Global Market Intelligence, 2026b.

Road, rail, and electricity networks remain highly concentrated on Java's dense and urbanized core, while mining infrastructure is distributed far more unevenly across Kalimantan, Sulawesi, and Papua. In these regions, investment has clustered around large industrial parks and integrated nickel processing zones, which serve as the backbone of Indonesia's rapidly expanding nickel value chain. Key hubs such as the Indonesia Morowali Industrial Park in Central Sulawesi, the Weda Bay Industrial Park in North Maluku, and the Konawe Industrial Park in Southeast Sulawesi host high-pressure acid leaching (HPAL) plants, smelters, and downstream refining facilities, requiring dedicated roads, ports, energy assets, predominantly coal-fired captive power plants, and transmission lines to support operations.

## 2.2 Logistics Performance Index

### 2.2.1 Logistics Performance Index

Logistics performance index (LPI), 2010 versus 2023

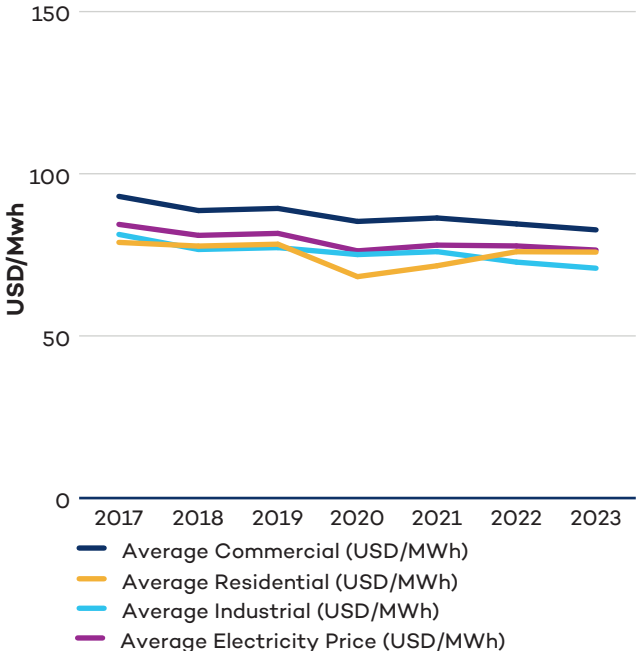



Source: World Bank, 2023.

**Methodology note:** *This radial chart shows the LPI breakdown (ranked 1 = low and 5 = high), a composite measure disaggregated into six key dimensions: 1) efficiency of the clearance process (i.e., speed, simplicity, and predictability of formalities) by border control agencies, including customs; 2) quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology); 3) ease of arranging competitively priced shipments; 4) competence and quality of logistics services (e.g., transport operators, customs brokers); 5) ability to track and trace consignments; 6) timeliness of shipments in reaching destination within the scheduled or expected delivery time (World Bank, 2023).*

### 2.2.2 Electricity Prices

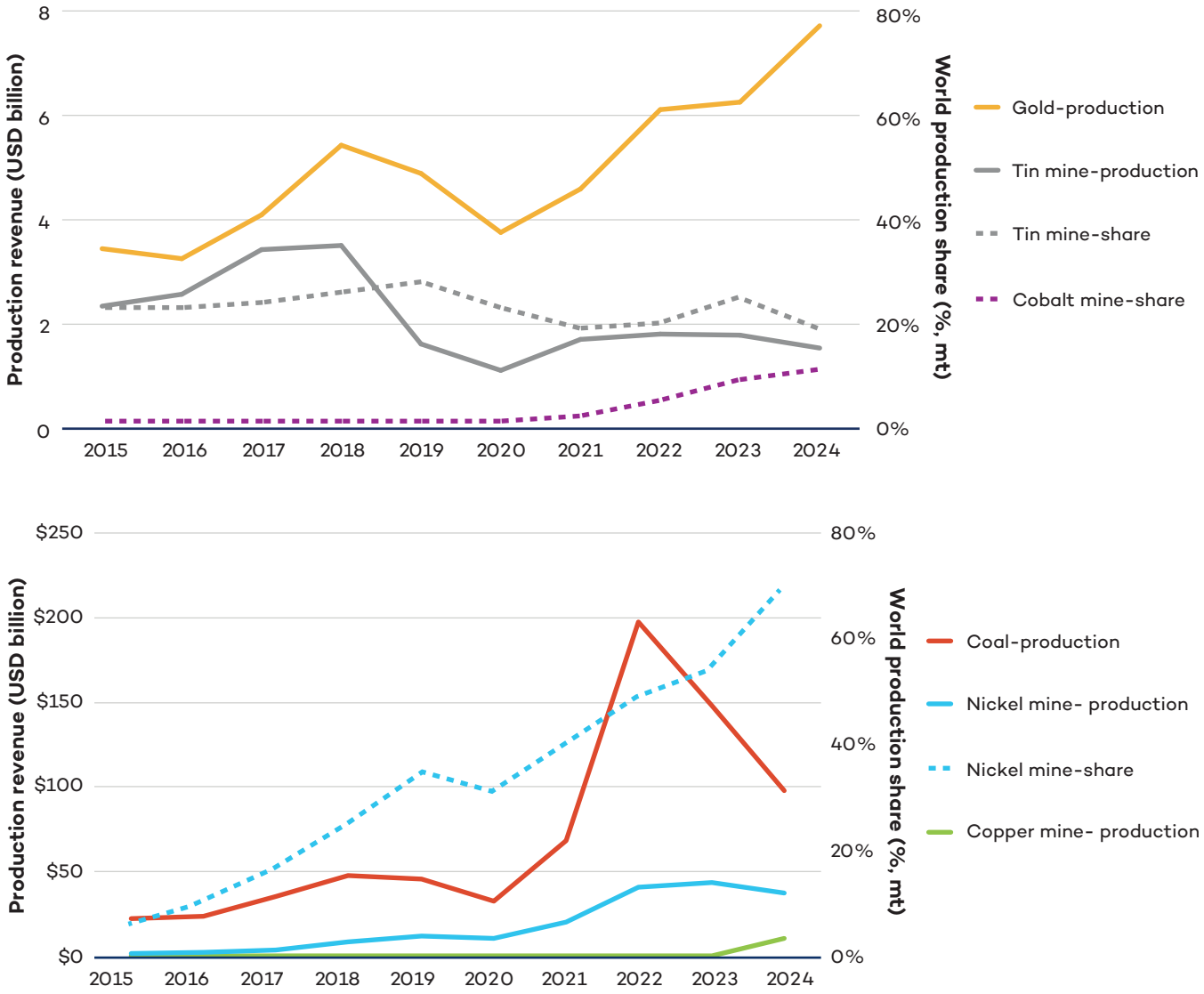
Indonesia electricity prices in USD/megawatt hour (MWh), 2017–2024




Source: Bloomberg NEF, 2025.

## 2.3 Trade: Mining and Refining Evolution

Indonesia's top revenue-producing commodities (USD billion) & global production share (% of global share)




Source: MEMR, 2025; U.S. Geological Survey, n.d.-a, n.d.-b, n.d.-c.

**Methodology note:** *The left axis on the graphs above shows the revenue generated by the production of selected commodities, in USD billion. This is calculated as the average annual price times annual country-level production. The right axis shows the country's share of world production for selected commodities.*

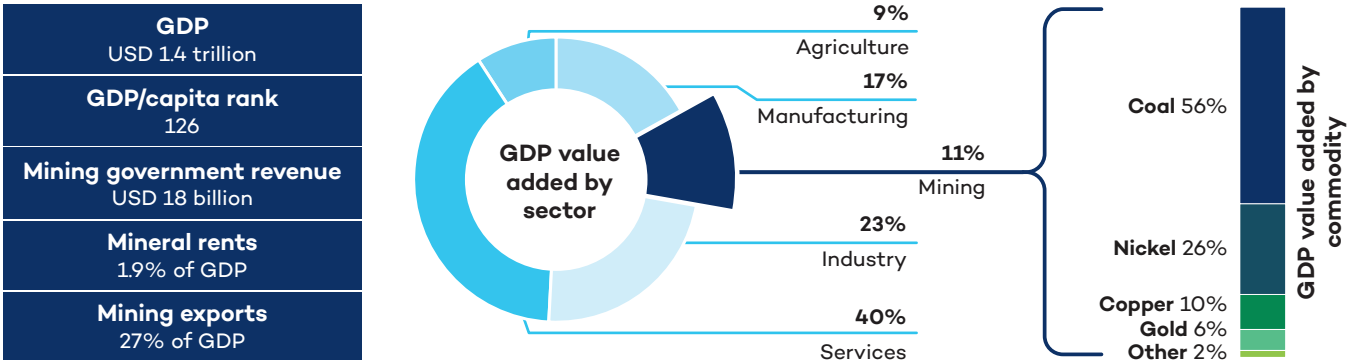
From 2020 through 2024, the surge in coal production revenue was not only caused by a five-fold increase in coal price from 2020 to 2022, but also because Indonesian coal production increased by roughly a third from 2021 to 2022. Although it appears muted when compared to coal revenue, Indonesia's nickel production revenue increased 25 times from 2015 through 2024. By tonnage, Indonesia's nickel production tripled from 2020 to 2023, largely due to new HPAL projects. Prior to HPAL, low-grade Indonesian nickel ores were mostly processed via two routes. Nickel ores were either smelted to produce nickel pig iron (NPI), a low-grade Class 2 nickel product consumed by Chinese stainless steel producers or were converted into ~99.8% nickel metal, a high-purity Class 1 nickel product consumed by battery manufacturers, among others.

The recent explosion of intermediate nickel-cobalt mixed hydroxide precipitate produced by HPAL facilities has disrupted nickel markets because it is a cheaper nickel input for battery manufacturing that bypasses traditional Class 1 and 2 nickel supply chains. This has crashed Class 1 nickel prices and had a similar knock-on effect for Class 2 prices. From 2015 through 2024, Indonesia's share of world nickel mine production went from 6% to 70%. For gold, Indonesian production has increased steadily as geopolitical tensions, trade wars, and U.S. policy concerns have elevated gold prices from 2015 through 2024. This trend is likely to continue.

# 3. Economic Considerations

## 3.1 Sectoral Contribution

Indonesia GDP by sector and government revenue from mining by commodity (excluding oil and gas), 2024



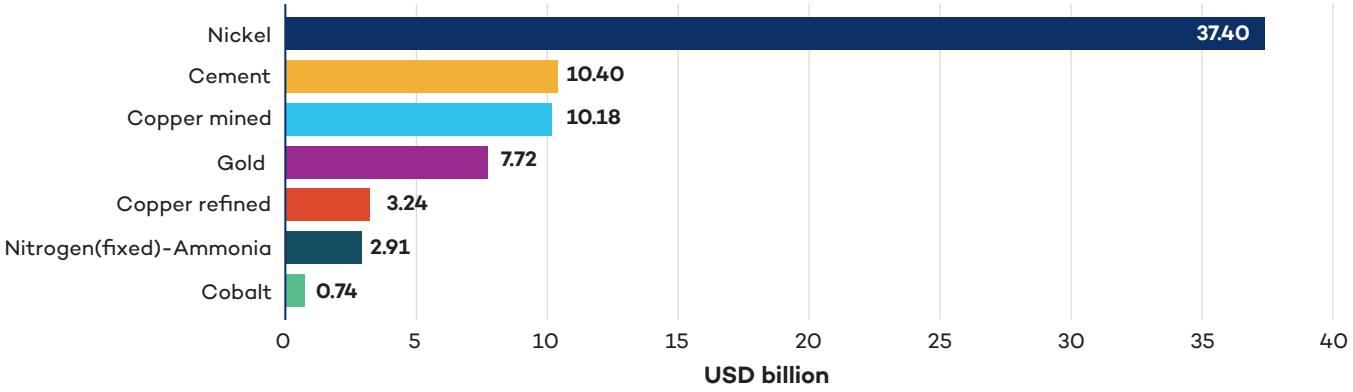

Source: Argus Metals, 2025; U.S. Geological Survey, n.d.-a, 2025c; World Bank, n.d.

**Methodology note:** *The data to the far left of the donut graphs covers GDP, GDP per capita world ranking, total estimated government revenues from mining, and mining as a share of total exports. The centre donut graph presents each sector's share of GDP, with the mining sector highlighted in dark blue. The right-most figure estimates government mining revenue (excluding oil and gas) by commodity (% share)*

The mining sector accounts for 11% of Indonesia's GDP. Coal, mostly thermal coal, makes up more than half of this contribution, while nickel represents about one quarter, and copper roughly one tenth. In advancing its industrial mining policies focused on downstream processing and developing battery value chains, Indonesia has gained a competitive advantage over its competitors by leveraging its numerous "captive" coal power plants. These arrangements, where nickel refiners and smelters operate their own coal mines to supply power directly to their refining and smelting facilities, have supported the rapid expansion of energy-intensive ore processing concentrated around industrial parks.

## 3.2 Mined Production Value for Selected Commodities

Estimated production value of selected commodities (USD billion), 2024




Source: U.S. Geological Survey, n.d.-a, n.d.-b.

## 3.3 Trade and Export Restrictions

Summary of trade and export restrictions for selected commodities

| | Export restriction type (most restrictive, 2024) | | |
|---|---|---|---|
| | Export prohibition | Export tax | Licensing requirement |
| Aluminum | | | x |
| Bauxite | x | | |
| Cobalt | | | x |
| Copper | | x | |
| Gold | | | x |
| Metal waste and scrap | x | | |
| Nickel | x | | |
| Silver | | | x |
| Tin | | x | |
| Zirconium | | | x |

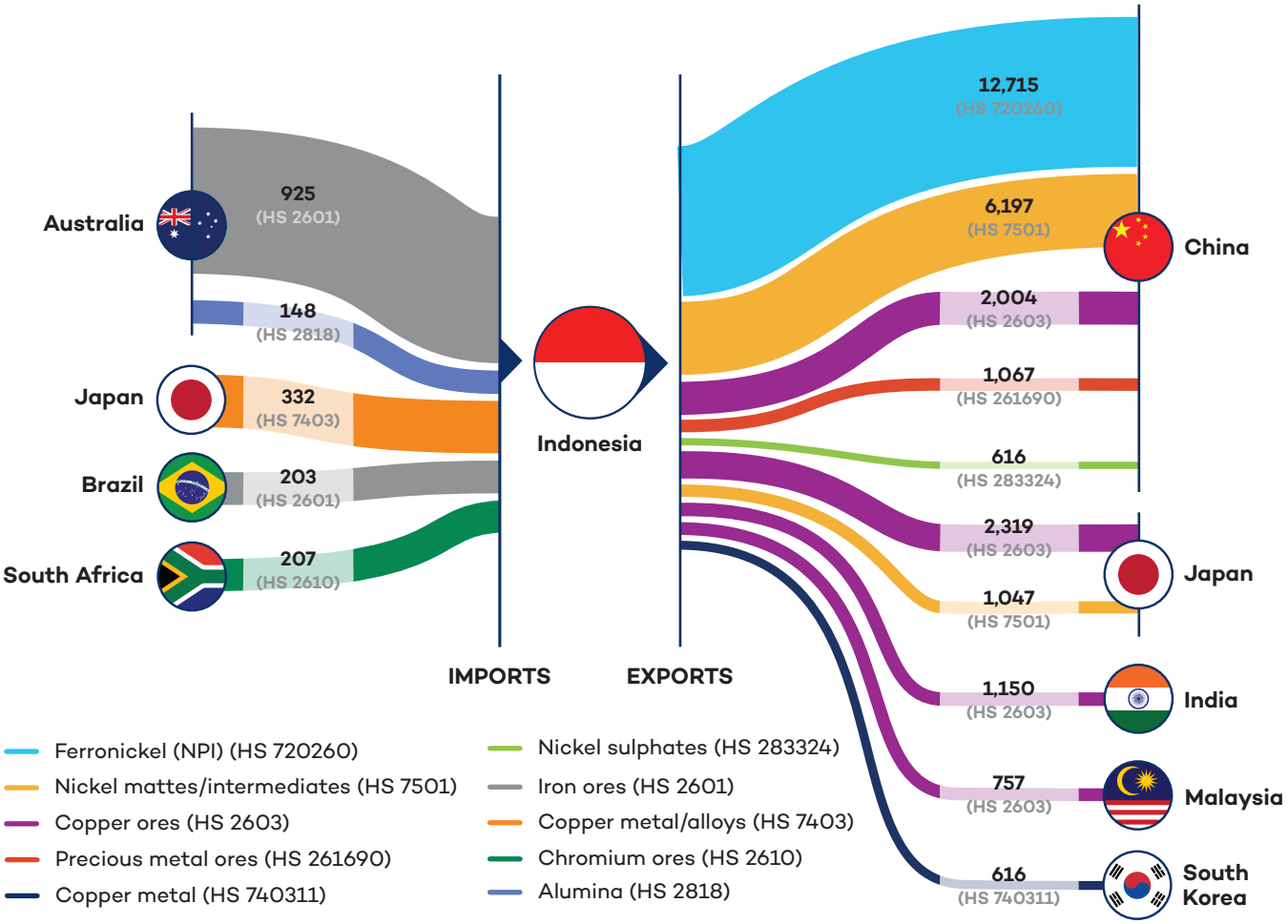
Source: Organisation for Economic Co-operation and Development, 2025; S&P Global Market Intelligence, 2026a.

Indonesia's long history of state planning for the mining industry includes nationally owned companies, export restrictions, and export prohibitions. Over the last 15 years, Indonesia has used raw material export bans to incentivize mining and refining firms (mostly Chinese) to invest in raw material processing and refining within Indonesia (Discovery Alert, 2025).

In 2009, the government passed a law that all mining products must be processed domestically to increase revenue from value-added products within Indonesia by 2014. The ban went into place in 2014 and rippled through global bauxite and nickel markets, and it was recalibrated for some mining products such as copper concentrates. As many companies showed progress in building nickel processing facilities, the nickel raw material ban was temporarily relaxed in 2017 (S&P Global Market Intelligence, 2026a). It was then fully reinstated in 2020, forcing foreign firms, especially Chinese investors, to build processing facilities in Indonesia to secure access to its large nickel reserves. A similar approach is being pursued for bauxite with the goal of increasing domestic alumina refining capacity and aluminum smelting capacity. A new ban on bauxite exports was put into place in 2023 (Discovery Alert, 2025).

## 3.4 Major Selected Mining Trades (excluding oil and gas)

Major selected mining trades (excluding oil and gas) in Indonesia, 2024 (USD million)

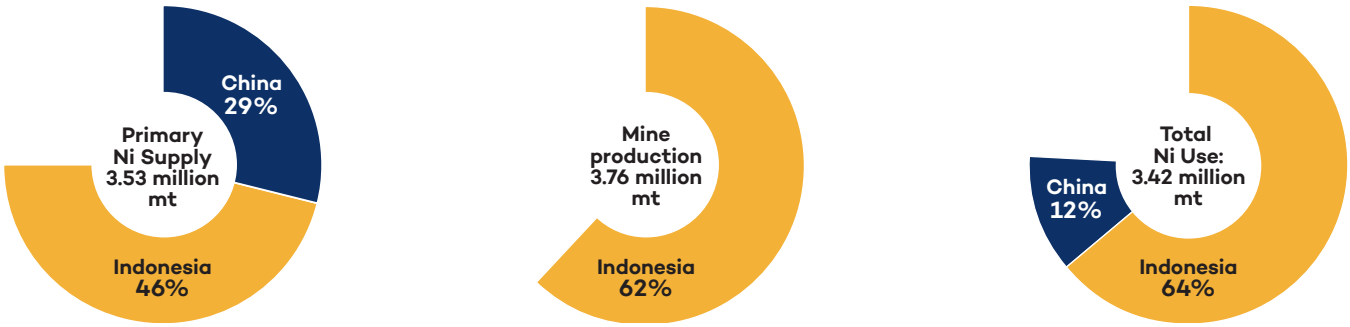



Source: United Nations Statistics Division, 2026.

The table above shows the country's exports and imports for 2024 by value (in USD million). Although nickel receives a lot of attention for its role in low-cobalt battery cathode materials, roughly two thirds of nickel is consumed to produce stainless steel. Most of China's nickel consumption for stainless steel production comes from Indonesian NPI, a high-impurity, low-cost nickel-iron alloy produced by smelting low-grade laterite nickel ore. This, along with nickel intermediate material exports to China, comprises the lion's share of Indonesian mining exports (excluding oil and gas). After nickel, copper ore exports to Asian smelters and refiners in Japan, China, India, and South Korea are the most prominent. Expansion of domestic copper refining and smelting capacity may be another opportunity for Indonesia to add value to its mineral reserves prior to export.

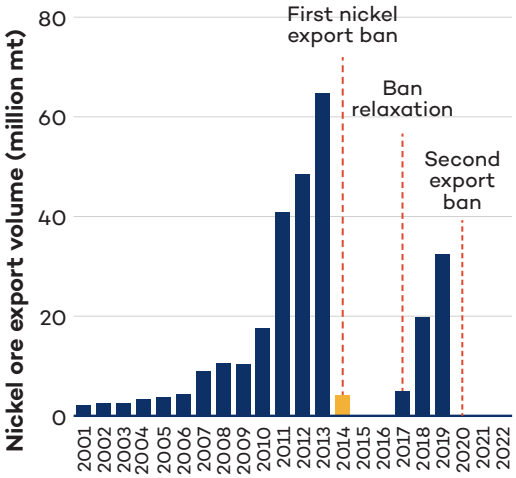
## 3.5 Commodity insight: Nickel

### (i) Indonesia's growing share of global nickel market supply, 2023–2024 (%)




Source: Indonesia Nickel Miners Association, 2025; International Nickel Study Group 2025; Maulia, 2024; S&P Global Market Intelligence, 2026a; U.S. Geological Survey. n.d.-a.

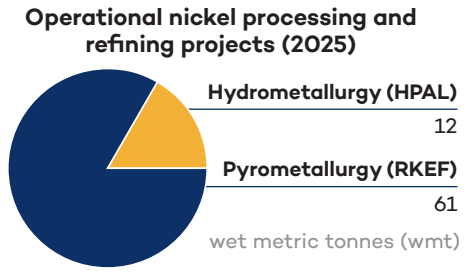
### (ii) Nickel ore export quantities (million mt), Indonesia, 2001–2022

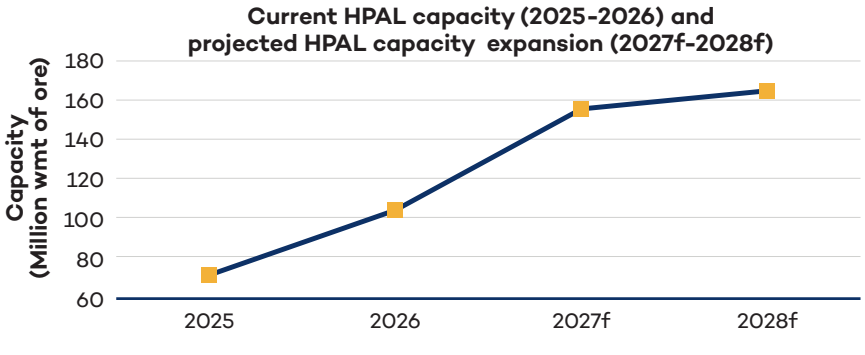



Source: Source: ASEANStats, 2026; S&P Global Market Intelligence, 2026a; United Nations Statistics Division, 2026

Under Law No. 4 of 2009 on Mineral and Coal Mining, the Indonesian government introduced a ban on raw nickel ore exports in 2014, to accelerate domestic processing and strengthen value addition (INSIG, 2024). To attract downstream investment, the government introduced a range of fiscal and nonfiscal incentives, including tax holidays and allowances. In 2017, facing a budget deficit and declining export revenues, the government temporarily relaxed the restriction through an amendment to Government Regulation No. 1 of 2014 (Indonesia Nickel Miners Association, 2025). As shown above, a second export ban became effective in January 2020, prohibiting the export of nickel ore with grades below 1.7%. Since the introduction of these domestic processing requirements, nickel revenues have increased by 28% from 2020 onward, and export values have risen tenfold over 6 years, from USD 596 million in 2016 to USD 6.82 billion in 2023 (Maulia, 2024).

### (iii) Market outlook: Indonesian nickel ore demand 2026 vs HPAL current and future capacity




Source: S&P Global Market Intelligence 2026a; Indonesia Ministry of Energy and Mineral Resources. (2025); Indonesia Nickel Miners Association, 2025

Indonesia has consolidated its position as a dominant player in the global nickel industry, accounting for 54% of global NPI production and hosting approximately 74% of the world's NPI smelters. Production of mixed hydroxide precipitate is also expected to grow rapidly, with output projected to increase from 70.53 thousand mt in 2025 to 164.8 thousand mt by 2028, driven by the commissioning of new HPAL facilities and the continued expansion of major industrial hubs such as the Indonesia Morowali Industrial Park, the Indonesia Weda Bay Industrial Park, and operations on Obi Island. Combined with substantial existing rotary kiln–electric furnace capacity, these developments are likely to further consolidate Indonesia's role as a leading supplier of both Class I and Class II nickel products. At present, as much as 70% of global stainless steel output originates from China and Indonesia, underscoring the concentration of these value chains.

# 4. Environmental, Social and Governance Considerations

## 4.1 Environment

### 4.1.1 Environmental Scorecard

**Environmental**

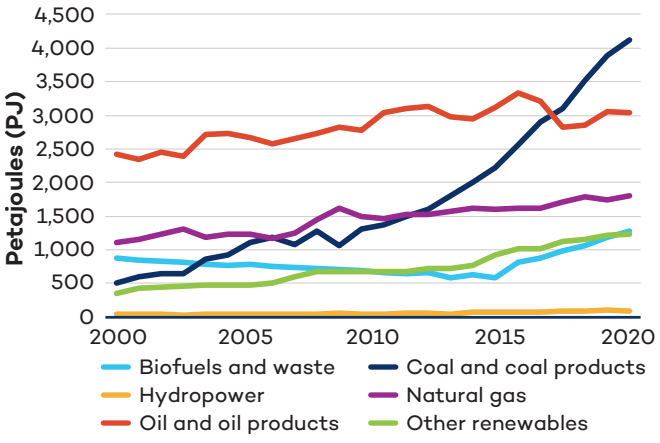
| Indicator | Year | Score | % change |
|---|---|---|---|
| **Annual greenhouse gas emissions** [A] (including LULUCF) (gigatonnes) | 2000<br>2022 | 1.92<br>1.28 | ↓ 33% |
| **Energy sector-related emissions**[A] (million mt $CO_2e$) | 2000<br>2022 | 326<br>737 | ↑ 126% |
| **Industry (IPPU) emissions**[A] (million mt $CO_2e$) | 2000<br>2023 | 18.00<br>41.72 | ↑ 132% |
| **Industrial sector energy intensity**[B] (exajoules) | 2000<br>2022 | 1.25<br>2.52 | ↑ 102% |
| **Renewable energy**[B] (% of total consumption) | 2000<br>2022 | 12<br>14 | ↑ 17% |
| **Tree cover loss**[C] (ha/year) | 2001<br>2024 | 740,000<br>1,100,000 | ↑ 49 |

Source: [A]Climate Watch, n.d.; [B]International Energy Agency, n.d.; [C]Global Forest Watch, n.d.

**LULUCF = land use, land-use change, and forestry; IPPU = industrial processes and product use.*

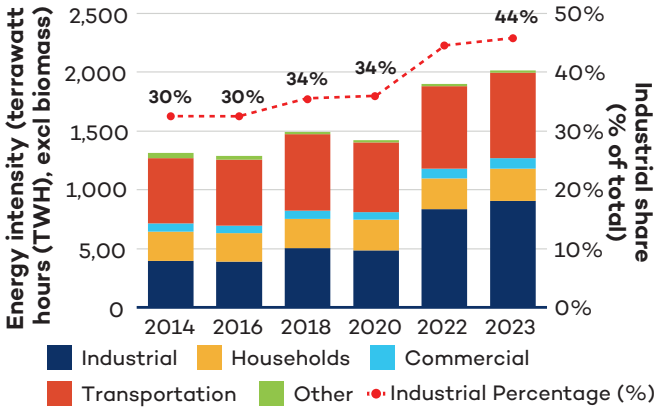
## 4.2 Emissions and Energy Mix Overview

### 4.2.1 Indonesian energy supply by source (2000–2023)



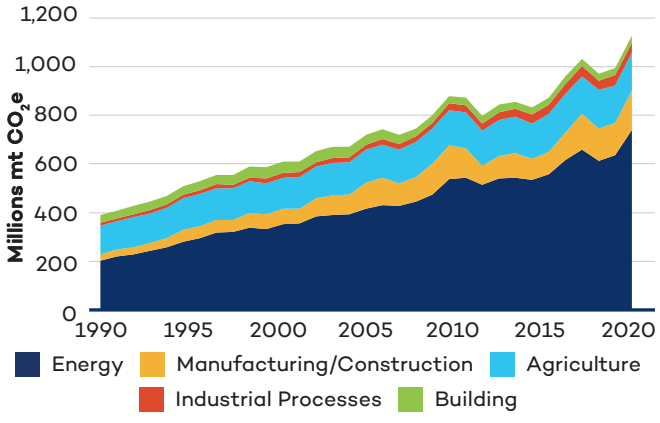

Source: International Energy Agency, n.d.

### 4.2.2 Energy consumption by sector (including traditional biomass), Indonesia (2013–2023)



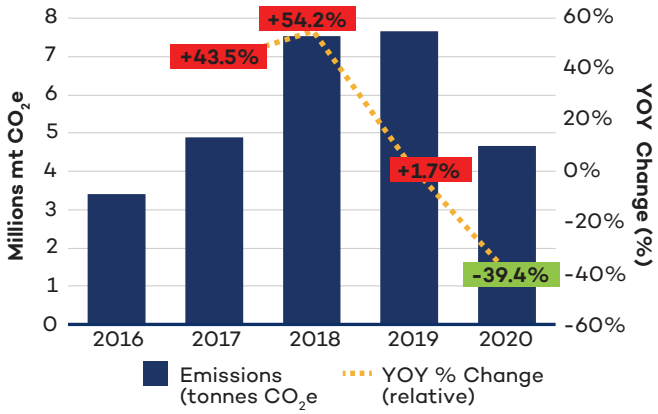

Source: Climate Watch, 2025.

### 4.2.3 Greenhouse gas emissions by sector, 1990–2020




Source: Climate Watch, 2025

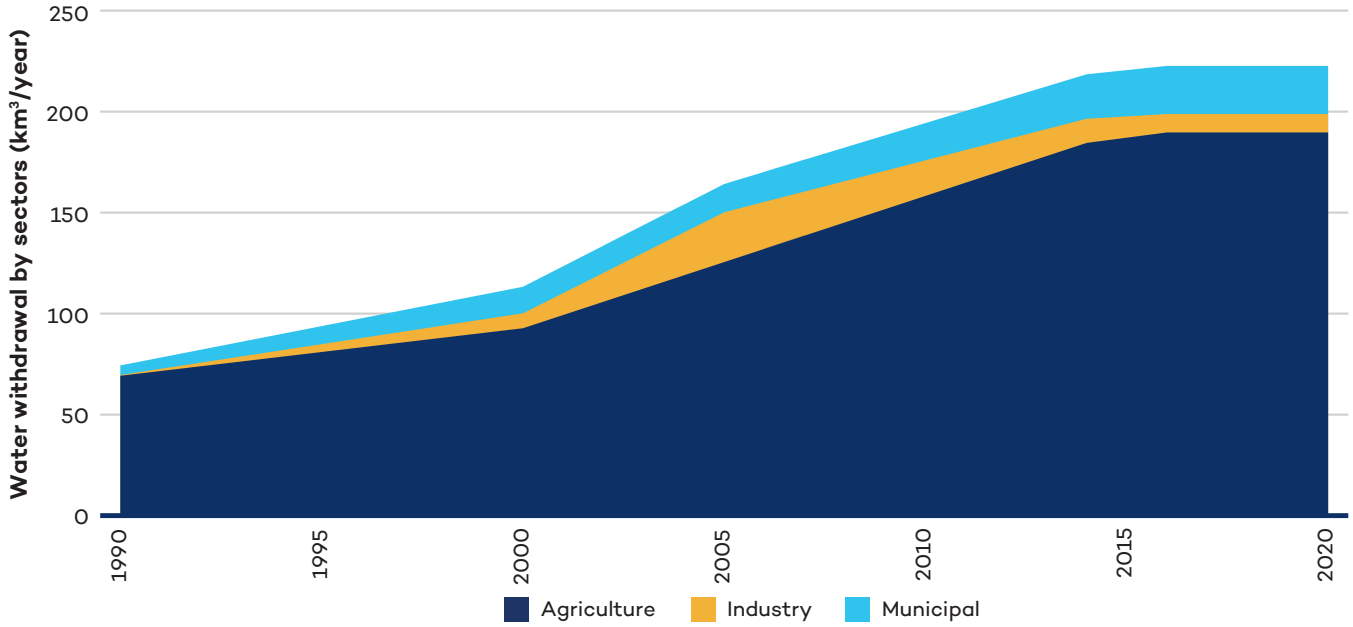
### 4.2.4 Mining and quarrying emissions




Source: China Economic Information Center, 2025.

### 4.2.5 Water Intensity

Water usage by sector, Indonesia (1990–2020)[3]




Source: United Nations Environment Programme Global Resource Information Database (UNEPGRID), 2025.

Sectoral water demand in Indonesia is rising rapidly, driven by both population growth and sustained industrial expansion. Although agriculture continues to dominate national water use, accounting for 80% of total demand in 2019, other sectors are increasingly competing for limited resources (UNEPGRID, 2025). The rapid buildout of mining and mineral processing operations, particularly for nickel, has intensified pressure on local water systems and highlighted the need for reliable supporting infrastructure. In response, many Indonesian mining companies have begun investing in advanced water recirculation and treatment technologies to reduce freshwater withdrawals and improve operational efficiency. (UNEPGRID, 2025).

## 4.3 Social

### 4.3.1 Social Scorecard

**Social**

| Indicator | Year | Score |
|---|---|---|
| **Gini Index**[H] | 2025 | 34.4 |
| **Prevalence of undernourishment**[E] (%, 3-year average) | 2024 | 4.5 |
| **Representation of female staff in mining**[F] (%) | 2022 | 8 |
| **Total mining and quarrying workforce, millions**[D] (individuals employed) | 2024 | 1.7 |
| **Resilience index**[G] (0-100) | 2023 | 65 |

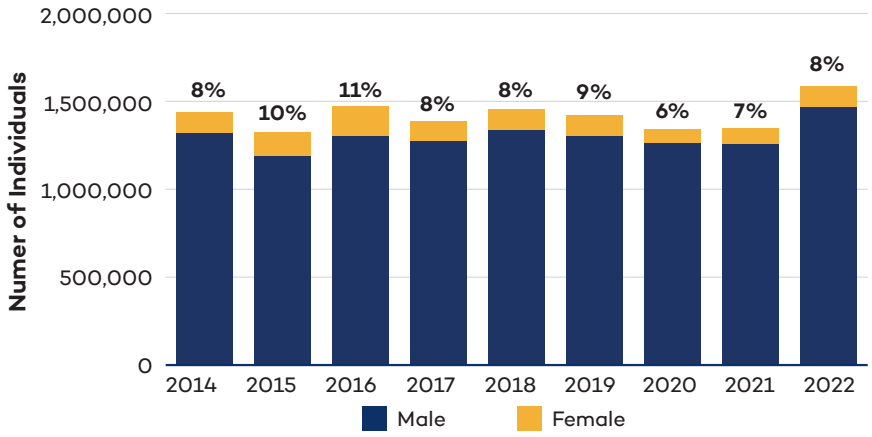
**The Gini Index** measures income (or consumption) inequality, ranging from 0 (perfect equality) to 100 (perfect inequality), with higher values indicating greater inequality.

**Normalized score** is a 0–100 country percentile ranking across all countries covered by the aggregate indicator, where 0 corresponds to the lowest rank and 100 to the highest.

Sources: [D]BPS Statistics Indonesia, 2023; [E]Food and Agriculture Organization of the United Nations, 2025; [F]Najmy, 2025; [G]Lloyds Register Foundation, 2024; [H]World Bank Open Data, n.d.

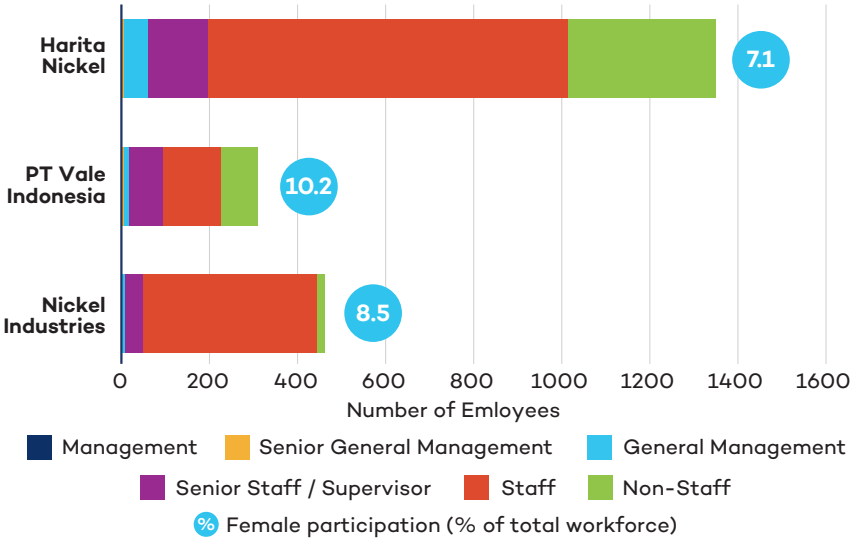
### 4.3.2 Gender and Social Inclusion

#### (i) Gender distribution in the Indonesian mining workforce (%)




Source: Authors' figure, with data from Sudaryat et al., 2024; United Nations Conference on Trade and Development, 2024.

#### (ii) Female participation in the mining sector across occupational groups




Source: Nickel Industries, 2023; PT Vale, 2023; TBP Nickel, 2023. Data extracted from Sudaryat et al., 2024.

Women remain significantly underrepresented in Indonesia's mining industry. In 2023, they accounted for less than 10% of the total workforce, with approximately 124,000 female workers (6.7%) compared to 1.24 million men (Statistics Indonesia, 2023; Sudaryat, 2024). Sudaryat et al. (2024) also model a substantial gender wage gap across the mining and quarrying sector, showing that women earn an average monthly wage of IDR 4,260,000, compared with IDR 5,120,000 for men. Women remain significantly underrepresented in Indonesia's mining industry. In 2023, they accounted for less than 10% of the total workforce, with approximately 124,000 female workers (6.7%) compared to 1.24 million men (Statistics Indonesia, 2023; Sudaryat, 2024). Sudaryat et al. (2024) also model a substantial gender wage gap across the mining and quarrying sector, showing that women earn an average monthly wage of IDR 4,260,000, compared with IDR 5,120,000 for men.

## 4.4 Governance

### 4.4.1 Governance Scorecard

**Governance**

| Indicator | Year | Score |
|---|---|---|
| **Political Stability & Absence of Violence/Terrorism**[H] (0-100) | 2023 | 28.9 |
| **Rule of law**[H] (0-100) | 2023 | 46.7 |
| **Voice & accountability**[H] (0-100) | 2023 | 52.5 |
| **Control of corruption**[H] (0-100) | 2023 | 36.3 |
| **Regulatory quality**[H] (0-100) | 2023 | 60.8 |
| **INFORM Disaster Risk Reduction Index**[I] (0-10) | 2026 | 4.6 |

**Normalized score** is a 0–100 country percentile ranking across all countries covered by the aggregate indicator, where 0 corresponds to the lowest rank and 100 to the highest.

**The INFORM Risk Index** is a composite indicator identifying risk of crises and disasters that may overwhelm national response capacity, where 0 indicates no risk and 10 indicates extremely high risk. .

Source: [H]World Bank Open Data, n.d.; [I]European Commission, 2026.

### 4.4.2 Regulatory Overview

#### Overview of the Indonesian mining regulatory landscape

| | |
|---|---|
| **Type of legal system** | Civil with some common and Dutch |
| **Main regulatory authority** | Ministry of Energy and Mineral Resources |
| **Mining code or primary legislation** | Law No.2/2025 (Amendment to Law No.4/2009 on Mineral and Coal Mining, previous amendments Law No.3/2020, Law No.11/2020 and Law No.6/2023)<br>GR No. 25/2024, Government Regulation on Implementation of Mineral and Coal Mining Activities |
| **Legal provisions for Indigenous or local community rights** | Public consultation is mandatory through environmental impact assessment. Provisions for Indigenous rights or local community rights are present in customary law but are lacking in formal laws and regulations. |
| **Environmental impact legislation** | GR No. 22/2021 on Environmental Protection and Management (legal provisions for impact assessment; air, water, and waste management; monitoring; enforcement)<br>Supported by GR No. 26/2025 on Environmental Protection and Management<br>Decree No. 17/2012 on Public Participation in AMDAL and Environmental License (PP5)<br>Based on Law No. 32/2009 on Environmental Protection and Management |

Source: IGF, forthcoming.

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