

Press release

Indonesia's aluminium sector risks following nickel into a 9.8 GW captive coal boom

The industry bypasses clean energy, relies on Chinese backing, and risks full ore depletion by 2038, subverting its own 'economic sovereignty' message.

JAKARTA, 2 July 2026 - To fulfill the government's downstreaming strategy, Indonesia's aluminium sector is relying on the model of building highly polluting captive coal power plants, according to a new briefing by the [Centre for Research on Energy and Clean Air \(CREA\)](#). With a total of 9.8 GW of identifiable capacities already operational and highly likely to be linked to new projects, aluminium is repeating one of the worst side effects of Indonesian [nickel](#)—turning to off-grid coal power instead of clean energy, thereby feeding into a larger [31 GW boom in captive coal power](#).

Indonesia's surge in processing bauxite ore into aluminium is propelled by the state's vision of achieving 'economic sovereignty' through a forced transition from raw material exporter to a leader in value-added metal products. However, the sector's rapid buildout is relying on the same high-carbon and economically outdated model of captive coal power plants as the previous decade's nickel boom.

The plans for aluminium processing far exceed planned expansion in power supply. The 229 TWh of electricity required for planned alumina and aluminium processing is equivalent to nearly 64% of [Indonesia's nationwide coal power generation in 2024](#) — including all public grid and off-grid captive plants combined. Without clear prioritisation of clean energy sources, this supply gap risks further proliferation of coal power plants, as Presidential Regulation No. 112/2022 exempts captive plants in National Strategic Projects.

CREA finds that nearly 1.8 GW of captive coal power linked to aluminium processing is already operational, and an additional 8 GW is highly likely to be linked to 32 prospective projects that are scaling up in both bauxite-rich provinces and newly designated outer-island industrial hubs.

In addition, CREA finds that Indonesia's total alumina capacity is projected to more than quadruple from 7 million tonnes in 2025 to 32.5 million tonnes by 2030, driven almost entirely by Smelter-Grade Alumina (SGA). Meanwhile, Chemical-Grade Alumina (CGA) remains flat at 300,000 tonnes, proving that capital expenditure targets primary metals over high-value products.

If the entire prospective project pipeline becomes operational, domestic feedstock demand will skyrocket from 14 million to an estimated 65 million tonnes of bauxite ore annually. Under this hyper-accelerated consumption curve, Indonesia's proven reserve base of 1 billion tonnes faces total depletion in less than 12 years.

The government's approach to aluminium downstreaming also contradicts or subverts its 'economic sovereignty' narrative. Data from [Earthwise Institute](#) shows that roughly 75% of all domestic alumina and aluminium projects in Indonesia are tied to Chinese backing. And, while newly formed superholding, Danantara, is funding state-owned Inalum's aluminium expansion in Mempawah, West Kalimantan, it is opting to secure a 30-year coal supply for 1.25 GW of captive coal power, ignoring the global precedent of large-scale hydropower for aluminium processing. This decision sends a misaligned signal to global markets, branding Indonesia's 'sovereign' aluminium leap as a high-emission liability and putting the country's economic and environmental future at risk.

'While Indonesia's aluminium narrative emphasises a higher value-added industry and 'economic sovereignty', the reality does not line up with this message. Unrestrained expansion may in fact create new vulnerabilities related to resource security and energy supply. These risks are compounded by an overwhelming reliance on foreign investment—particularly from China—and a workforce dominated by contractual labour. To both safeguard the industry and mitigate its environmental impact, the government should ensure project pipelines are transparent, based on realistic assessments of ore reserves and supply, and include built-in clean energy plans that avoid reliance on fossil-based power,' said Syahdiva Moezbar, Industry Analyst at CREA.

'Indonesia's aluminium expansion follows nickel's dangerous precedent—a lack of anticipatory planning for new industrial sites to be located near clean energy potential or designed for future grid connectivity. If all planned capacity proceeds, aluminium downstreaming could lead to another industrial captive coal boom. This would undermine national decarbonisation targets, lock industrial growth to a carbon-intensive pathway, and further impose environmental and public health costs on communities. To avoid this, the government should mandate comprehensive energy forecasting during the early development phase, prioritising grid integration and captive renewable energy, such as hydro and solar, over captive coal,' said Katherine Hasan, Analyst at CREA.

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Note to editors

The publication related to this press release is available [here](#).

About CREA

The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions, to air pollution. CREA was founded in December 2019 in Helsinki and has staff in several Asian and European countries. The organisation's work is funded through philanthropic grants and revenue from commissioned research.

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