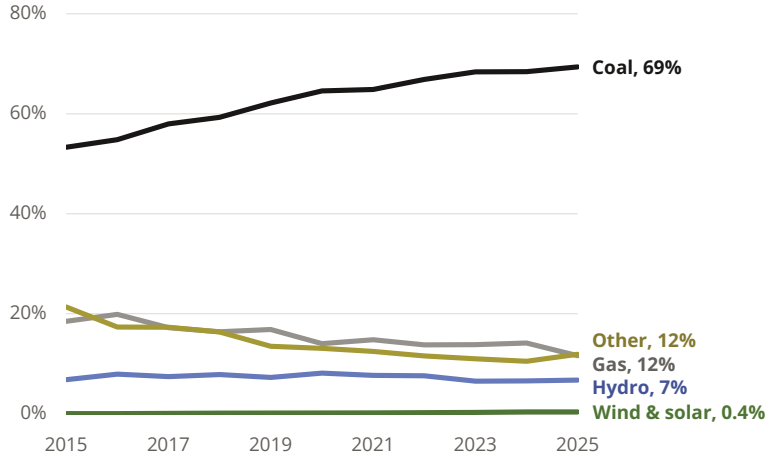
Indonesia at a glance

Indonesia is pursuing a development-led energy transition, scaling renewables and clean industries where they support industrialisation, while coal remains central to electricity generation and economic transformation.

Key transition conditions: Strong industrial and resource advantages for clean industries, but coal remains embedded in the development model.

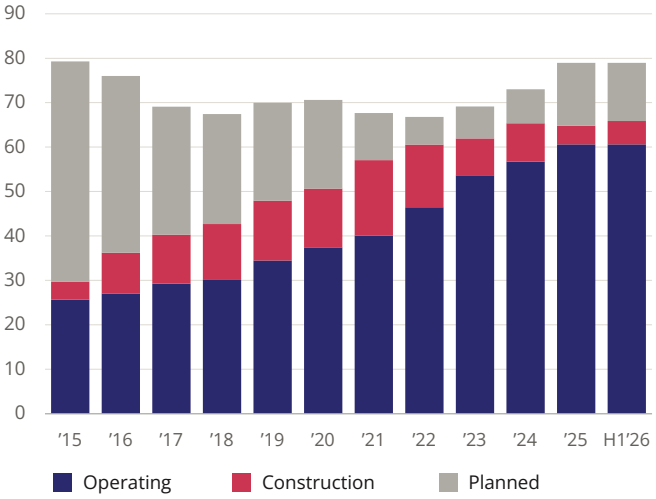
Electricity generation by source

2015–2025

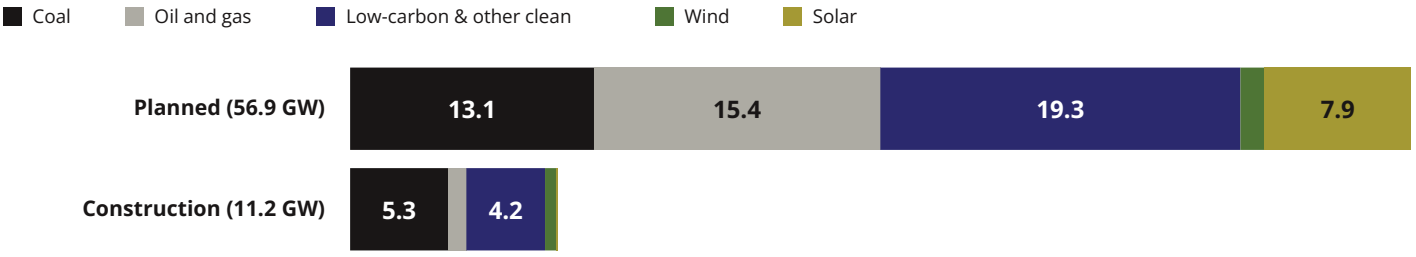


Coal capacity by status

2015–H1 2026



Capacity under development by source



Wind 1.3 GW (planned) · Oil and gas 1.0, Wind 0.6, Solar 0.1 GW (construction)

Power system landscape

84% of electricity comes from fossil fuels; coal alone is 56%. Renewables stuck near 15% for decades. 3rd-largest coal producer, and the world's largest coal exporter.

Clean transition trends

Record **836 Mt** of coal generation in 2024, plus 1.9 GW of new coal built for nickel and EV industrial estates. Nickel, EV and battery supply chains anchor the "Golden Indonesia 2045" vision, targeting 100% renewable-powered nickel processing.

Enablers and bottlenecks

World-leading nickel reserves and a roadmap to cut nickel emissions 81% by 2045 support clean industry. But grids get $1.4bn a year against **$2.4bn** needed, Java-Bali coal overcapacity persists, and JETP excludes captive coal.

Opportunities for international cooperation with *Indonesia*

- **Clean manufacturing partnerships can support the Golden Indonesia 2045 vision:** low-carbon nickel and battery chains, and storage-backed power for industrial estates.
- **Financing cooperation could reach beyond the grid**, engaging industrial developers and investors to address privately financed captive coal.
- **Enabling infrastructure is a further opening:** technical assistance for power system planning, grid modernisation and storage deployment.

Sources: *Ember annual electricity data; Global Energy Monitor annual capacity charge data and coal plant tracker data*

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This country profile was produced as part of the report *Powering Across Divides – Clean energy cooperation in a fragmented world*, published November 2026. The full report is available from **https://www.e3g.org/publications/powering-across-divides-clean-energy-cooperation-fragmented-world/**

Indonesia's profile

Outline and domestic political economy context

Indonesia is one of the world's largest coal producers (third largest after China and India) and exporters (first worldwide), while also remaining heavily coal-dependent domestically. Fossil fuels continue to dominate its energy system: 84% of electricity is generated by fossil fuels, with coal accounting for about 56%;[1] Also, in 2024, fossil fuels supported about 63% of total energy consumed.[2] Renewables remained relatively stagnant despite ambitious targets, with their share of electricity generation and final consumption hovering around 15% for decades.

In 2024, Indonesian coal production hit record levels, surpassing its target by almost 18% (836 Mt compared to 710 Mt)[3] and exceeding the 2023 record of 775 Mt. Indonesia also commissioned 1.9 GW of new coal-fired power generation capacity in 2024,[4] the third-highest in the world after China and India, built to support sites that process nickel, cobalt and aluminium for the rapidly growing EV sector.[5] The updated electricity supply plan ("RUPTL 2025–2034") downgraded its 2030 renewable targets, from 20.9 GW of new clean power capacity to 18.6 GW,[6] falling further short of the JETP's investment plan. Although the plan projects a quadrupling of clean energy production by 2034 (from 44 TWh to 172 TWh), coal and gas generation is also expected to increase by 40% (from 295 TWh to 407 TWh) over the same period[7] – a trend that will likely mask grid-level green gains. Separately, the government has announced a more ambitious 100 GW solar programme, with an initial 30 GW procurement phase, which could significantly accelerate the transition if realised.[8] However, this ambition is not yet reflected in the existing RUPTL, highlighting the gap between high-level commitments and formal electricity planning.

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[1] Azura Yumna Ramadani Purnama, 04 June 2026, **Kapasitas Pembangkit Listrik April 2026 108 GW, Batu Bara 56%** (Power Generation Capacity April 2026 108 GW, coal 56%)

[2] IEA, July 2026, **Indonesia**

[3] Fransiska Nangoy, **Indonesia's 2024 coal output hits record high** (webpage, accessed 5 August 2026)

[4] Global Energy Monitor, 3 February 2025, **Boom and Bust Coal 2025**, page 19 in full PDF

[5] Hans Nicholas Jong, 23 April 2025, **Indonesia defies global coal retreat with captive plant boom**

[6] Centre for Research on Energy and Clean Air, 2025, **Indonesia's RUPTL outlines faster growth in fossil fuel use, downgrades ambition for clean energy**

[7] Centre for Research on Energy and Clean Air, 2025, **Indonesia's RUPTL 2025-2034: Fossils first, renewables later**

[8] Cabinet Secretariat of the Republic of Indonesia, 14 August 2026, **Gov't to Strengthen Energy Self-Sufficiency through Solar Farm, National EV Project**

Physical and institutional constraints also slow renewable deployment in Indonesia.[9] Its fragmented archipelagic grid requires substantial investment in transmission infrastructure: US$2.4 billion on average annually is required, compared with US$1.4 billion on average annually realised.[10] Coal-fired overcapacity in the Java-Bali system, reinforced by long-term take-or-pay contracts, also reduces incentives for the state electricity utility − PT Perusahaan Listrik Negara − to integrate additional renewable capacity.[11] Outside Java-Bali, most isolated mini-grids and small island grids remain heavily diesel-dependent,[12] lacking the storage and hybrid infrastructure needed to absorb variable renewable energy at scale. Together, these factors illustrate that Indonesia's transition challenge is not only about expanding renewable generation but also about addressing the transmission, grid and planning constraints that act as barriers to integrating it into the power system.

Indonesia's energy transition primarily centres on economic transformation and national development, not climate leadership. The government's primary focus has been on driving an ambitious 8% annual GDP growth target; this is pursued partly by centralising state investment via the new Danantara sovereign wealth fund[13] and partly by tightening state control over strategic commodity exports,[14] as an expression of resource nationalism.[15] This same logic extends to clean energy policies which primarily aim to support industrial upgrading, domestic manufacturing and energy independence. This causes the tension between Indonesia's clean manufacturing ambitions and its emissions trajectory, as economic development and industrialisation remain heavily dependent on coal, with many nickel and EV supply-chain facilities powered by captive coal plants[16] – even as climate commitments require a gradual reduction in fossil fuel use. Coal also remains politically resilient because it provides affordable, locally abundant energy that fuels industrial growth (especially downstream industries), export earnings and energy security**.** Although economic studies evidence the link between renewables and industrial competitiveness, energy affordability and supply security,[17] this reasoning has not been adopted by the government in its policymaking.

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[9] Institute for Energy Economics and Financial Analysis, December 2025, **After years at an energy crossroads, can Indonesia pivot in 2026?**

[10] Institute for Energy Economics and Financial Analysis, May 2026, **Unlocking Indonesia's transmission grid investment**

[11] Institute for Energy Economics and Financial Analysis, November 2025, **Transforming Indonesia's coal dependence into clean energy opportunities**

[12] Institute for Energy Economics and Financial Analysis, April 2026, **Advancing Indonesia's 100GW solar programme through de-dieselisation for energy security**

[13] Asia House, 2025, **Danantara Indonesia: The Rise of a Sovereign Wealth Powerhouse**

[14] Fulcrum, 15 June 2026, **Prabowo's Nickel State: Indonesia's Search for Power**

[15] Eve Warburton, 2024, **Nationalist enclaves: Industrialising the critical mineral boom in Indonesia**, The Extractive Industries and Society, vol. 20, 101564, **10.1016/j.exis.2024.101564**

[16] Lowy Institute, 2025, **The future of Indonesia's green industrial policy**

[17] Institute for Energy Economics and Financial Analysis, June 2026, **Strengthening Indonesia's energy security by reducing coal dependence**

A challenging aspect of Indonesia's transition is that the coal-industrial base that must be restructured to achieve real decarbonisation of the power system is privately owned and financed; this is true especially from the perspective of international initiatives like JETP, which is designed to intervene at state-level policy. The JETP Indonesia's study of captive coal manifests this mismatch: the Government of Indonesia and International Partners Group (IPG) narrowed its scope to the on-grid system only, excluding from the mechanism's accountability framework the fast-growing, most emissions-intensive segment of Indonesian coal that is built by private/foreign industrial capital outside the grid and directly tied to nickel and EV.[18] Another example is the cancellation of the early retirement plan for the coal-powered plant Cirebon-1[19] due to financial risks: the plant was owned by a foreign commercial consortium (Marubeni, Korea Electric Power Corporation or KEPCO, and Indika Energy); its early retirement required replacement costs at a scale that JETP's approved capital could not match (US$8.4 billion, versus US$3.1 billion),[20] and indeed was not designed to reach. This transaction was pursued through the Asian Development Bank's Energy Transition Mechanism rather than the JETP itself.[21]

The "just" aspect of the transition adds another layer of contestation, especially regarding its impact on employment. Coal-producing provinces and industrial regions remain highly dependent on mining-related employment and revenues.[22] While trade unions and labour groups generally support the transition, they oppose strategies they see as threatening workers' livelihoods without credible social protection or industrial planning.[23] Grants are typically used to support this "just" aspect of the transition, such as reskilling and risk-mitigation programmes for workers and vulnerable groups. However, as of 2025, the share of grants in Indonesia's JETP funding is 2.6% of the IPG's pledge and 0.3% of the combined pledge of the Glasgow Financial Alliance for Net Zero and the IPG.[24]

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[18] Centre for Research on Energy and Clean Air and Global Energy Monitor, 2026, **Out of sight, out of control: 31 GW of captive coal is jeopardising Indonesia's economic and emissions goals**; JETP Indonesia, November 2025, **Captive Power Study**

[19] Divya Karyza, 5 December 2025, **Govt backtracks on early retirement of Cirebon-1 coal plant**

[20] Jayanty Nada Shofa, 5 December 2025, **Indonesia's JETP Money Jumps to $21.4 Billion Despite US Exit, $3.1 Billion Greenlit**

[21] Asian Development Bank, 3 December 2023, **New Agreement Aims to Retire Indonesia 660-MW Coal Plant Almost 7 Years Early**

[22] International Institute for Sustainable Development, 2025, **Coal Transition Impacts and the Approach to Inclusive Just Transition Policies in Indonesia**

[23] Indah Budiarti, 08 March 2024, **Fighting for a Just, Democratic and Constitutional Energy Transition in Indonesia**

[24] Institute for Energy Economics and Financial Analysis, February 2026, **Building credibility in Indonesia's energy transition: Insights from the ETM and JETP Indonesia**

Summary of key domestic transition factors

- **The strongest enabler is Indonesia's significant industrial and resource advantages for a clean economy**. World-leading nickel reserves, growing manufacturing capacity, expanding investment in EVs and battery supply chains, and substantial renewable resource potential provide a strong foundation for scaling clean industries, particularly where renewable deployment supports industrial competitiveness and affordability. In fact, renewable energy, EV manufacturing and green industrial investment are increasingly framed as ways of achieving the government's "Golden Indonesia 2045" vision[25] and moving up the global value chain. The government has released a decarbonisation roadmap[26] for the nickel industry in particular – a cornerstone of its industrial priorities – targeting an 81% emissions reduction by 2045, alongside a transition to 100% renewable electricity for nickel processing.[27]

- **The main constraint is that coal remains embedded in Indonesia's development model**. Cheap domestic coal, supported by Domestic Market Obligations that secure local supply and price caps that maintain affordability, underpins electricity affordability and industrial competitiveness. Captive coal plants powering nickel and mineral processing further deepen this structural dependence, creating a long-term emissions lock-in. An implementation gap also exists between state-led transition mechanisms and privately financed industrial emissions: the fastest-growing sources of emissions sit outside the reach of mechanisms such as the JETP, limiting their ability to drive system-wide decarbonisation despite progress in the on-grid power sector.

Opportunities for international collaboration

1. **Enhance industrial decarbonisation and green supply chain management as enablers of delivering its "Golden Indonesia 2045" vision.** International collaboration on clean manufacturing standards (including a low-carbon nickel and battery supply chain), on storage-backed renewable power for industrial estates and on market creation for low-emission products would support Indonesia's energy transition; at the same time, it would also align with economic priorities and agendas, which are to upgrade its industry for high-value manufacturing, to improve its export readiness and competitiveness (to meet trade partners' market regulations) and its ability to attract foreign investment.

[25] Secretariat of the 2025–2045 Rencana Pembangunan Jangka Panjang Nasional (RPJPN), 2024, **Golden Indonesia 2045: National Long-Term Development Plan 2025-2045** (webpage, accessed 5 August 2026)
[26] Director of Energy, Mineral, and Mining Resources of Indonesia, 2025, **Decarbonisation Roadmap of Indonesia Nickel Industry**
[27] World Resources Institute, 6 January 2026, **Nickel's Climate Cost and Indonesia's Push for Cleaner Production**

2. **Develop innovative financing cooperation to address privately financed industrial emissions, going beyond the on-grid power system.** The current platforms to help finance the energy transition, such as JETP, are primarily scoped to support Indonesia's on-grid electricity system; however, much of the country's emissions growth comes from off-grid captive coal plants serving industrial estates. Exploring new financing, regulatory and commercial approaches that engage industrial developers, private investors and multinational supply-chain actors to support the decarbonisation of captive coal would increase the impact of international initiatives.

3. **Align infrastructure investment with electrification and renewable deployment.** Indonesia's interest in expanding electricity access and renewable deployment creates an opportunity to address persistent constraints in transmission infrastructure, grid integration and system planning, particularly across its fragmented archipelagic grid. International cooperation could support Indonesia in translating these priorities into grid modernisation, transmission expansion and storage deployment through concessional finance, investment partnerships, and technical assistance, helping turn renewable ambitions into deployable capacity.

ABOUT E3G

E3G is an independent think tank working to deliver a safe climate for all.

We drive systemic action on climate by identifying barriers and constructing coalitions to advance the solutions needed. We create spaces for honest dialogue, and help guide governments, businesses and the public on how to deliver change at the pace the planet demands.

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