

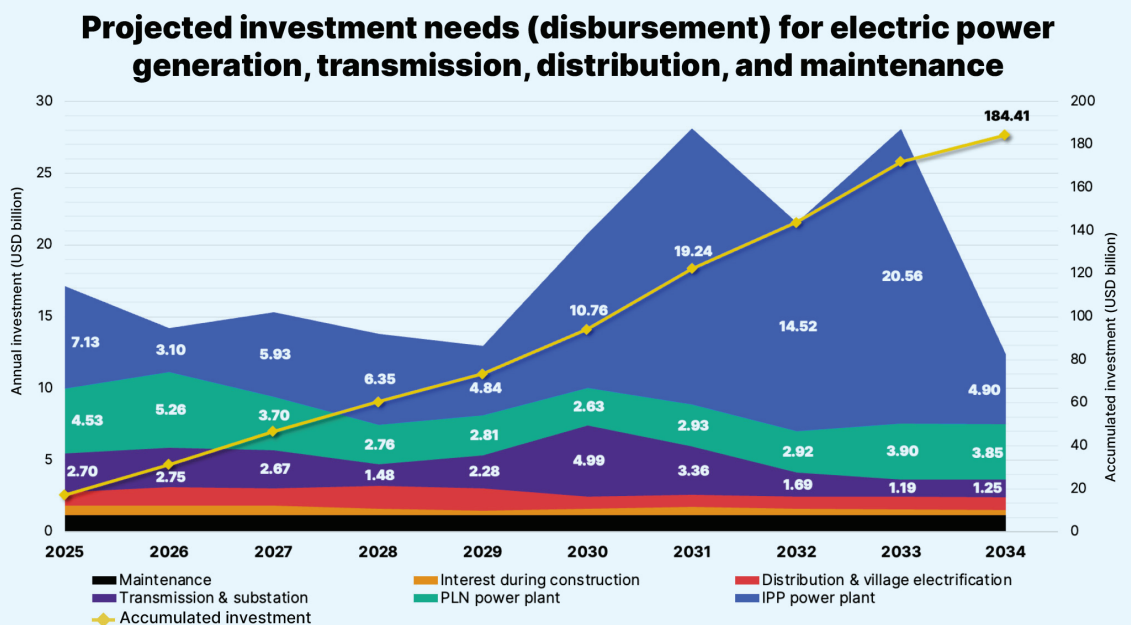
Fact sheet

How a dedicated transmission subholding can accelerate Indonesia's grid investment

Indonesia's electricity transmission network is crucial for its energy transition, but delays in expansion and modernization constrain economic growth, renewable energy deployment, and regional electricity trade. The transmission investment gap is largely driven by financing structure rather than policy intent or technical capability. Closing that gap would unlock large-scale renewable energy deployment, electrification, and regional grid integration.

Background

- Indonesia's Electricity Supply Business Plan (RUPTL) 2025–2034 requires approximately **USD2.4 billion** in annual transmission investment, while realized investment has averaged about **USD1.4 billion** annually between 2019 and 2024.



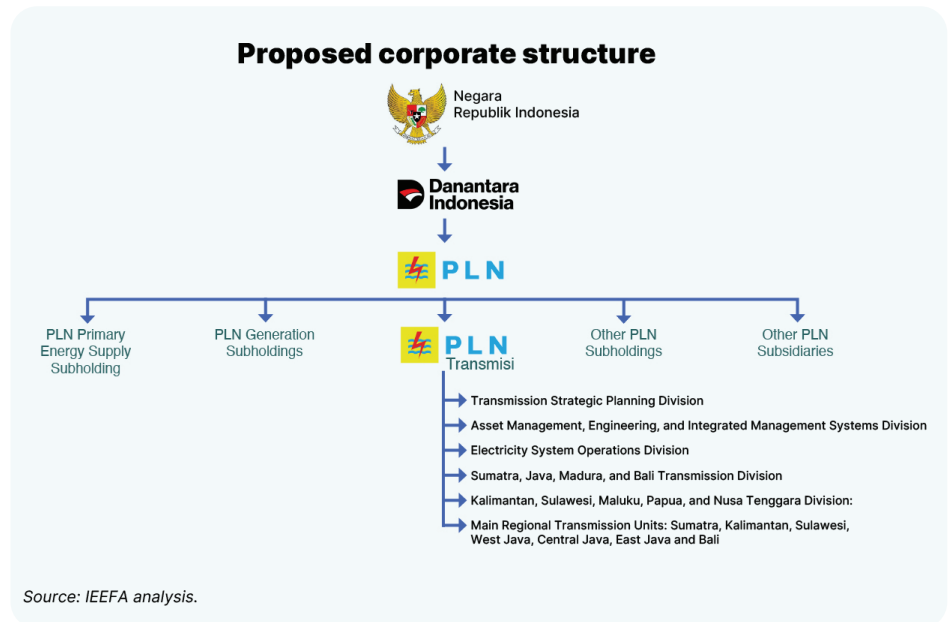
Source: PLN. Indonesia's Electricity Supply Business Plan 2025 – 2034 (RUPTL 2025-2034); IEEFA.

IEEFA

- National electricity utility PT Perusahaan Listrik Negara (PLN) finances transmission through a consolidated balance sheet that blends low-risk grid assets with generation exposure, fuel price volatility, foreign exchange risk, subsidy delays, and long-term power purchase commitments — inflating financing costs and obscuring transmission's stand-alone economics.
- PLN identifies an **IDR240 trillion viability gap** to achieve a commercially viable 9–10% return on transmission and village electrification investment, of which IEEFA estimates **IDR166.5 trillion is transmission-related**.

A potential solution: Establishing a PLN transmission subholding

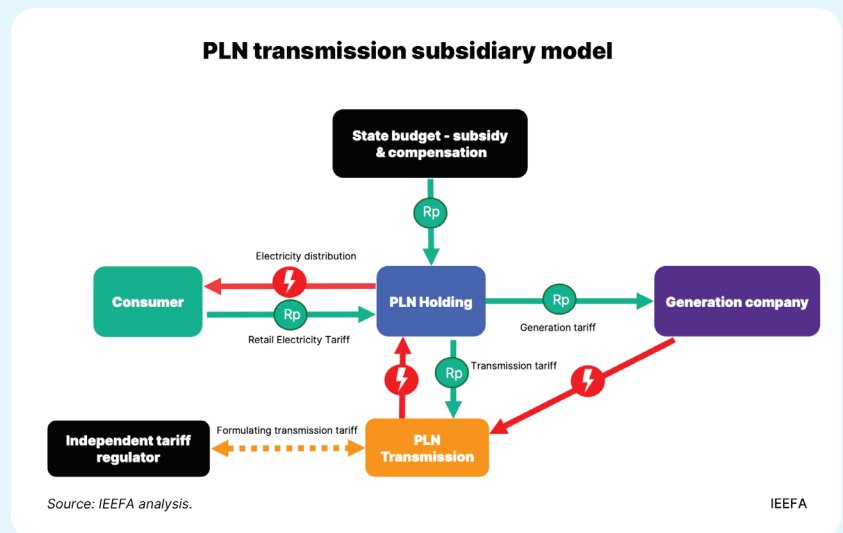
- A structural reform is needed: establishing a PLN transmission subholding through financial ring-fencing within a state-owned framework, consistent with Indonesia's Electricity Law and Constitutional Court rulings.
- This separates transmission assets, costs, and revenues, enabling regulated tariffs, improved cost recovery, and supporting access to long-term infrastructure finance.
- PLN already operates transmission as a separate system through regional transmission units and load dispatch centers. The most complex aspect of separation (technical system operations) has been achieved — what remains is financial and corporate separation.



Transmission separation would not imply privatization, market liberalization, or constitutional unbundling.

Benefits of a PLN transmission subholding

- A dedicated transmission subholding would place high-voltage transmission assets in a wholly state-owned entity within the PLN group, with sole mandate to own, operate, maintain, and expand the national transmission network.
- The subholding would have its own balance sheet, regulated tariff revenues, independent credit standing, and responsibility for treasury, capital planning, and regulatory engagement.
- Transmission charges would be designed to recover operating costs, maintenance, depreciation, and a permitted return on capital, thereby enabling sustainable financing for system expansion and modernization.
- Under this model, the IDR166.5 trillion state capital injection (PMN) required for transmission-related projects could be recovered through a regulated transmission tariff mechanism. IEEFA estimates that a 6.04% blended cost of funds would reduce 10-year financing costs to IDR140.2 trillion, lowering payments to external lenders.
- The proposed subholding structure would support long-term grid investment, improve cost transparency and accountability, provide a foundation for capital market financing, and create a path to shareholder dividend payments.
- The tariff framework could establish the basis for future third-party access arrangements without impacting commercial operations.



International and domestic experience



India - Power Grid Corporation of India Limited (PGCIL)

Operates over 184,000 circuit-kilometers (ckm) of transmission lines and around 290 high-voltage substations.

Majority government-owned and functions within a commercial framework, with transmission tariffs set by the Central Electricity Regulatory Commission (CERC) to recover investment costs, operating expenses, and a regulated return on capital.

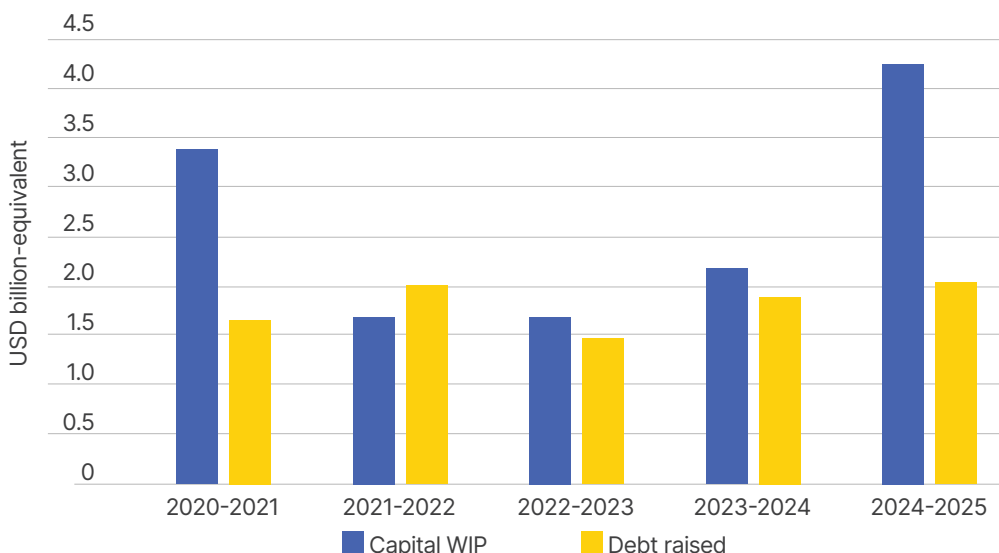
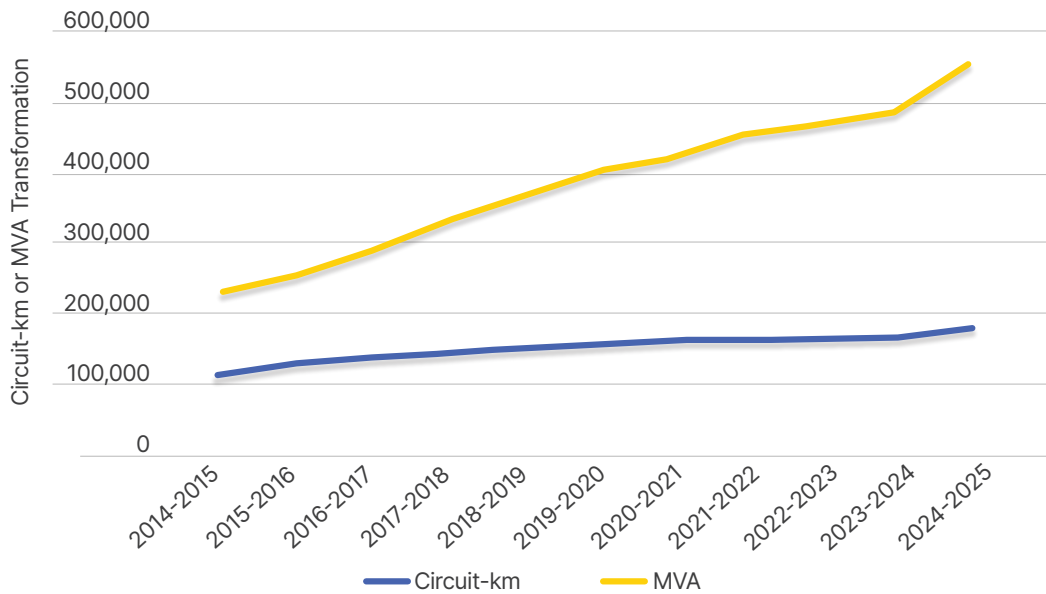
Debt raised annually ranges between USD1.5–2.0 billion, and regulated returns generate sufficient retained earnings for PGCIL to fund an average USD2.4 billion in annual capital investment across the transmission system.

Expanded its capital base through equity market access, including its 2007 initial public offering (raising USD750 million) and subsequent offerings in 2010 (USD1.7 billion) and 2013 (USD1.28 billion).

Dividend payout ratio climbed to 63%, yielding the government approximately USD587 million in dividends in 2025.

PGCIL's treasury strategy eliminated reliance on government guarantees to secure borrowing, phased out foreign currency borrowing, and shifted to unsecured domestic debt — achieving lower borrowing costs and tenors exceeding 10 years.

PGCIL capital investment progression



Source: Powergrid Corporation of India Limited. Annual Reports FY2016 to FY202599. IEEFA analysis.
Note: WIP = Work in Progress.



Vietnam - National Power Transmission Corporation (EVNNPT)

A wholly owned subsidiary of Electricity of Vietnam (EVN), managing around 33,054 kilometers (km) of transmission lines, 215 substations, and over 288,250 megavolt-amperes (MVA) of transformer capacity.

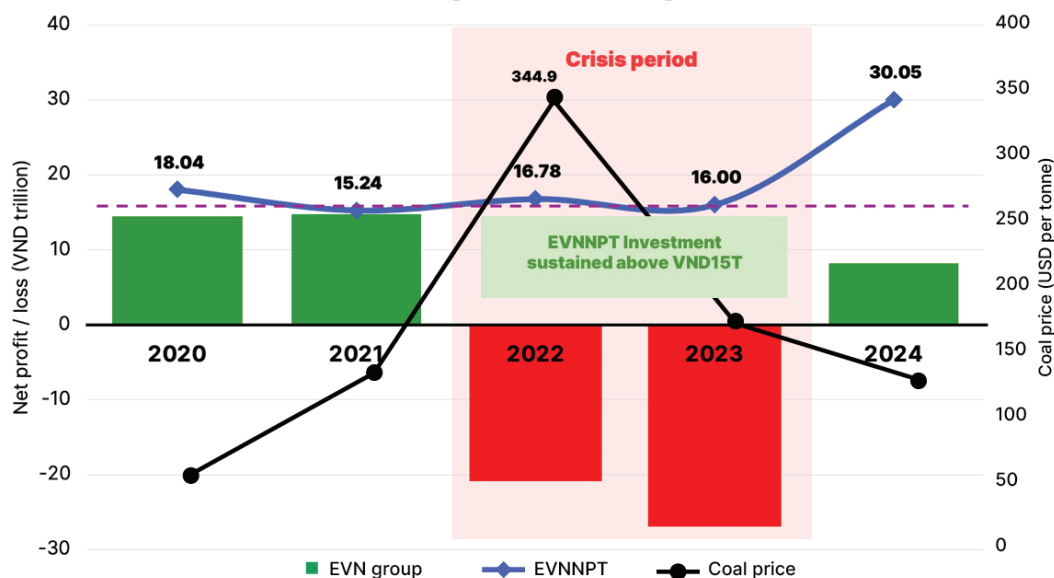
EVNNPT operates as a ring-fenced subholding of EVN, with its own balance sheet and a stand-alone credit rating.

Despite financial stress in the electricity sector during 2022–2023, transmission costs accounted for only around 3.6% of total electricity supply costs and remained stable relative to generation costs.

This structural separation allowed EVNNPT to sustain its investment capacity, including approximately USD660 million of new investment in 2023, while EVN's broader operations were in financial deficit.

As conditions stabilized, EVNNPT deployed approximately USD1.18 billion in transmission investment in 2024, supporting broader network reinforcement and expansion efforts. This included constructing the 500kV Circuit 3 line, which doubled North-Central corridor capacity from 2,500 megawatts (MW) to 5,000MW and helped prevent a recurrence of the 2023 blackouts.

EVN group net profit/loss vs. EVNNPT annual capital investment (2020–2024)



Source: IEEFA analysis; EVN annual reports; World Bank; Commodity Markets.



Indonesia - Natural gas pipeline network

Indonesia's natural gas pipeline network provides a domestic precedent for treating energy infrastructure as a regulated, open-access natural monopoly, separating infrastructure (transport) from commodity (gas supply and sales).

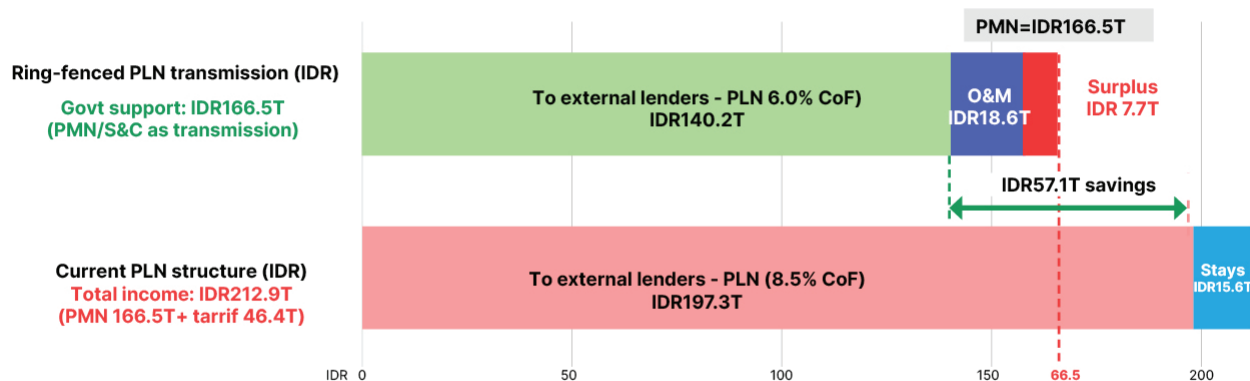
Pipeline operators earn revenue through regulated transportation tariffs set by Indonesia's Downstream Oil and Gas Regulatory Agency (BPH Migas) under a cost-of-service framework covering capital costs, operations and maintenance, and a regulated return on investment.

Regulations require pipeline operators to offer third-party access, allowing multiple users to share infrastructure.

Supports diversified operators, including Perusahaan Gas Negara (PGN), Pertamina, and joint ventures such as PT Transportasi Gas Indonesia (TGI), which operates a cross-border pipeline from Sumatra to Singapore.

PGN, listed on the Indonesia Stock Exchange in 2003 and now a subholding of Pertamina (with ~57% state ownership), demonstrates how a regulated, tariff-based infrastructure operator can access capital markets and diversify financing while remaining under state control.

Fiscal leakage under current PLN structure versus ring-fenced PLN transmission, RUPTL 2025–2034



- Treat transmission as infrastructure, not a residual cost.** Recognizing the grid as a stand-alone infrastructure business allows Indonesia to optimize financing costs and scale investment more efficiently.
- Ring-fence transmission assets and cash flows.** Establishing a subholding within PLN clarifies investment needs, supports tariff-based cost recovery, and improves creditworthiness without changing public ownership.
- Use regulated tariffs to unlock long-term capital.** Transparent transmission tariffs enable refinancing, bond issuance, and portfolio-based financing that can reduce or even eliminate reliance on state budgets.
- Align grid investment with renewable energy deployment.** Clear transmission planning and financing are essential to support Indonesia's ambitious solar and broader renewable energy targets.
- Enable electricity exports through infrastructure economics.** Separating transmission allows export-related lines to be financed on their own merits, reducing cross-subsidies and improving project bankability.
- Build incrementally, not disruptively.** Initial steps can focus on asset ring-fencing, internal transfer pricing, and tariff transparency, with institutional separation phased in over time.
- Preserve public control while improving performance.** Transmission separation strengthens state stewardship by making costs, responsibilities, and investment decisions more transparent, improving financial governance and unlocking fiscal sustainability and the potential for self-financing.
- Consider listing the PLN transmission entity on the stock exchange.** Listing a separate transmission entity provides clarity on governance, operations, and financial viability, enabling more capital to crowd in and supporting the development of domestic capital markets.
- Adopt a strategic approach to transmission management and capital mobilization.** A more structured financing model could enable PLN to expand and improve electricity services without burdening the state budget.



Read more:
Unlocking Indonesia's transmission grid investment



Institute for Energy Economics
and Financial Analysis