



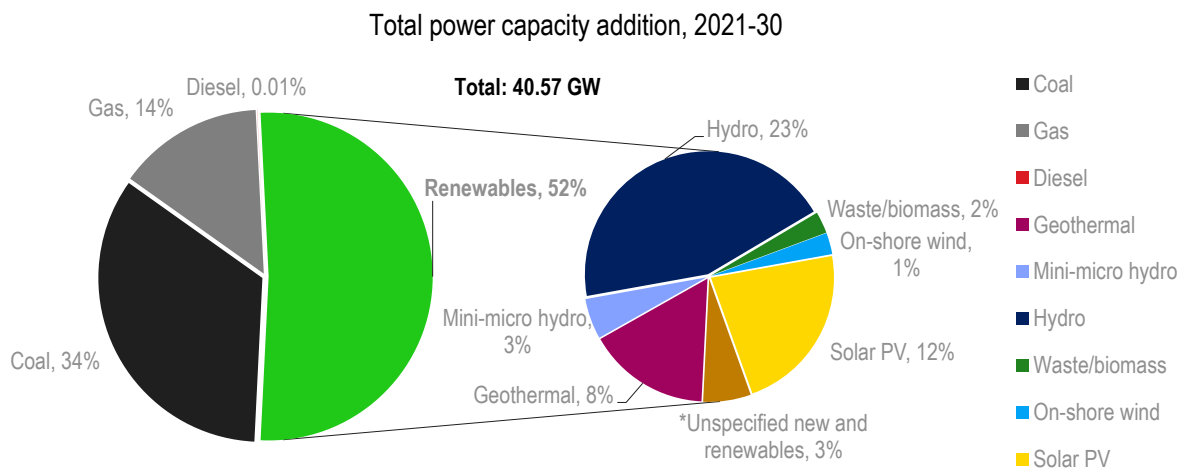
## RUPTL 2021-30: PLN steps up ambitions to accelerate clean energy investments in Indonesia

The Government of Indonesia and PLN (the national power utility) released last month the new Electricity Business Plan (RUPTL) 2021-30, which sets out Indonesia's future power capacity and network development plans over the next 10 years. This new RUPTL (touted as the "greenest" RUPTL to date) marks a turning point in the country's energy transition as, for the first time, renewable energy accounts for half (or 21 GW) of total power capacity addition. The plan comes in support of the Government's objectives to achieve a 23% share of renewable energy in the energy mix by 2025 (as stated in the National Electricity General Plan or RUKN) as well as to reduce greenhouse gas emissions by 29-41% by 2030 and achieve Net-Zero emissions by 2060 in line with the country's Nationally Determined Contributions.

### Total capacity addition was revised down but the share of renewables increased

Uncertainties surrounding current and future power demand growth due to the pandemic, caused significant revisions in projection assumptions as well as delays in the preparation of the RUPTL 2021-30. Among those changes, the compound annual growth rate of electricity demand over 2021-30 was cut down to 4.4% -- compared with 6.5% in the previous 2019-28 plan --, entailing a reduction in electricity demand projections across all regions but the eastern islands (i.e., Moluccas, Papua, and the Nusa Tenggara clubbed together under the acronym "MPNT"). Subsequently, total power capacity addition in the RUPTL 2021-30 is roughly 40% lower than in the previous 2019-28 plan.

Figure 1. Renewables account for half of total power capacity addition

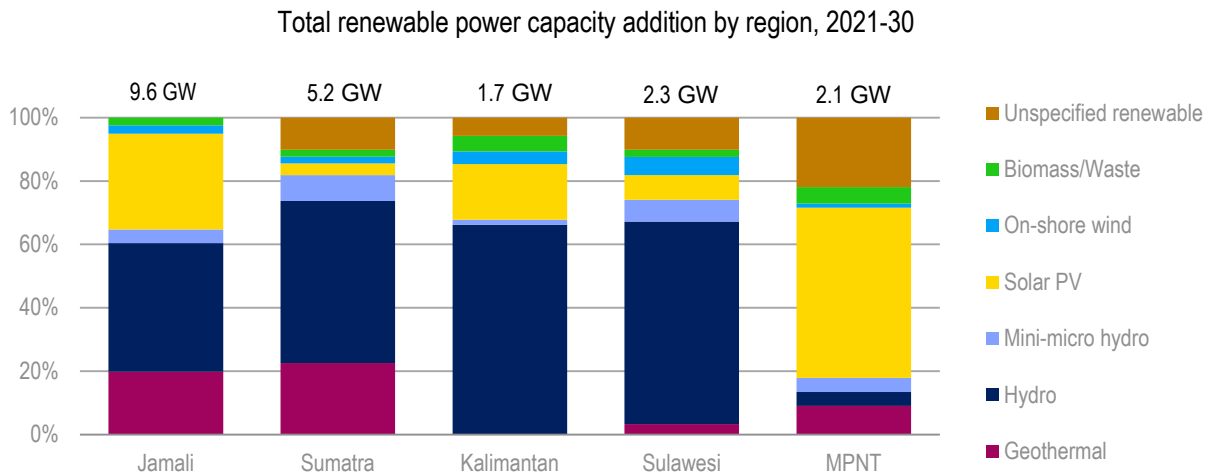


Note: \* This category includes power generated from new and renewable energy sources to supply baseload and peak load demand. The RUPTL indicates that baseload power plants under this category could cover hybrid renewables and gas power plants whose generation costs are lower than that of coal projects.

Source: RUPTL 2021-30.

Still, renewable power capacity addition represents a roughly 20-percentage point increase (or roughly 4 GW in absolute value) compared to the previous RUPTL, although much of this share increase is due to a relative reduction in fossil fuel capacity addition. Java-Madura-Bali (Jamali, the largest power system in the country) and Sumatra are regions with the highest addition of hydro capacity (and renewables more broadly) while Jamali and MPNT (where diesel generators are ubiquitous) are those with the largest addition of solar photovoltaics (PV).

**Figure 2. MPNT has the highest share of solar power capacity addition**



Source: RUPTL 2021-30.

Despite this overall positive development, coal and gas continue to make up a significant share of total capacity addition, contrasting with recent announcements to ban new coal build-outs starting in 2022. Part of this is attributable to the fact that all coal capacity to be developed beyond 2022 are carry-over from the previous 35 GW power plan<sup>1</sup> to which the ban does not apply. Given the relatively young age of Indonesia's coal fleet, adding on more coal to the country's power capacity mix risks further locking in emissions, increasing transition cost and hence, jeopardising the country's Net-Zero emission goals. Hence, prioritising renewable energy development will be important if Indonesia is to be on a 1.5° compatible pathway<sup>2</sup>.

### ***Private investment continues to play a central role to fund power generation expansion plans***

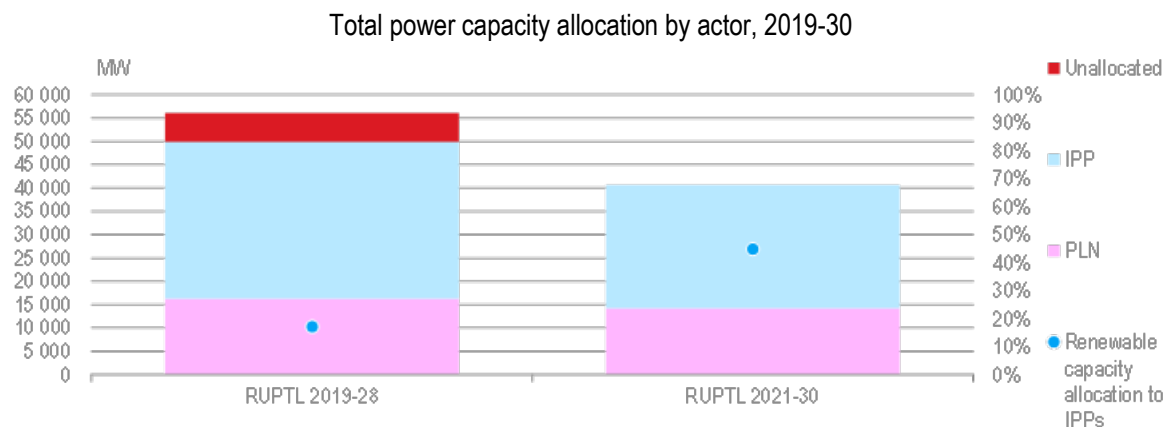
As in other plans, IPPs have a greater role in developing planned capacity than PLN. Of the total 40.6 GW of planned additional capacity, 26.3 GW or 65% (as compared to 60% in the 2019-28 RUPTL) is earmarked for development by Independent Power Producers (IPPs) while PLN would be responsible for the remainder. This also holds true for renewables where the private sector is to build out an exceptionally high share of renewable capacity (particularly compared to the 2019-28 plan). More specifically, 11.8 GW

<sup>1</sup> This power plan was launched by the President of Indonesia in 2015 to fast-track the development of an additional 35 GW of power capacity by 2019. The plan's implementation has faced numerous and has not been fully completed as of 2021.

<sup>2</sup> <https://iesr.or.id/pustaka/deep-decarbonization-of-indonesias-energy-system-a-pathway-to-zero-emissions-by-2050>

of renewable power capacity addition (or 56% of the total renewable capacity addition) is slated for IPP development, while PLN would build the remaining 9.1 GW (or 44% of total renewable capacity addition).

**Figure 3. A higher share of renewable capacity is earmarked for IPPs than in the previous RUPTL**



Source: RUPTL 2021-30.

Achieving targets may prove particularly challenging in light of PLN's unfavourable financial situation, as can be seen in the latest PLN's financial report<sup>3</sup>. Indeed, total power investment needs (encompassing electricity generation, transmission, substation, distribution, and others) are substantial, estimated at around USD 9.14 billion per year<sup>4</sup> over 2021-30 or 1.6 times actual power spending in Indonesia in 2019. Of this total, PLN is expected to contribute USD 5.14 billion per year, a substantial amount compared to committed State Equity Participation<sup>5</sup> (PMN) of USD 0.6 billion per year on average over that period. Plugging this financing shortfall could prove particularly challenging, however, as a growing number of countries<sup>6</sup> (including Japan, South Korea and China) and multilateral development banks pledge to phase out (overseas) funding for coal power plants. Meanwhile, the cost of numerous renewable technologies continue to fall and investor appetite for green products globally is higher than ever. Furthermore, as PLN remains the sole entity responsible for transmission and distribution infrastructure development in the country, opening private sector participation in that segment of the market would ease PLN's financial burden on the one hand and help strengthen network infrastructure on the other – which is determinant to help accommodate greater share of variable renewable energy.

<sup>3</sup> [http://ieefa.org/wp-content/uploads/2021/06/Putting-PLNs-Net-Zero-Ambition-Into-Context\\_June-2021.pdf](http://ieefa.org/wp-content/uploads/2021/06/Putting-PLNs-Net-Zero-Ambition-Into-Context_June-2021.pdf)

<sup>4</sup> Two thirds of that number are earmarked for power generation (44% IPPs and 22% PLN), 17% for transmission and substation, 14% for distribution and 4% for other expenses.

<sup>5</sup> The 2021-30 RUPTL identifies funding options for PLN: PLN's internal funds, loans, and state equity participation (PMN). Loan funds can be in the form of foreign loans, government loans, bonds, other commercial banking loans or even foreign grants. The RUPTL 2021-30 does not provide details on PLN's committed internal funds.

<sup>6</sup> <https://www.thejakartapost.com/news/2021/09/29/coal-power-projects-in-doubt-as-chinese-funding-dries-up.html>

## **Regulatory reforms as well as more international collaboration will be crucial to realise ambitions**

While the latest RUPTL sends a positive signal to investors, achieving its ambitions requires creating a sound, transparent and predictable policy framework to unlock private capital. For instance, as the recent [OECD Clean Energy Finance and Investment Policy Review of Indonesia](#) highlights, increasing market competition through a gradual shift to a fair, transparent and competitive procurement process for renewables, can help scale up renewable power development in a cost-effective way. On-going efforts to implement an emission-trading system in the power sector and to improve the investment climate under the Omnibus Law are already steps in the right direction. However, challenges remain and key areas still need to be addressed. This includes streamlining and facilitating land acquisition procedures which requires one of the longest lead times in renewable project development.

International development assistance will be equally important to turn the RUPTL 2021-30's renewable plans into reality. Blended finance mechanisms including technical assistance to support project preparation and financial structuring as well as de-risking mechanisms in the form of first loss or non-payment guarantees would help to improve the capacity of project developers to access both domestic and international debt finance. Development finance should also support interventions that can help standardise projects to facilitate replicability and ease project evaluation and due diligence of financial institutions. This would help to overcome challenges faced in the market on the quality of feasibility studies. Improving data availability on historical renewable energy project performance will also be an important tool for mobilising private capital and accelerate the development of the renewable electricity market.

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