# Charting the Financial Path of JETP :
## Challenges, Risks, and Policy Insights

AEER

ROSA LUXEMBURG STIFTUNG
SOUTHEAST ASIA
MANILA OFFICE

**Author**

Muhammad Aulia Anis
Pius Ginting

**Layout & Documentation**

Taqi

**Disclaimer**

Sponsored by the Rosa Luxemburg Stiftung (RLS) with funds of the Federal Ministry for Economic Cooperation and Development of the Federal Republic of Germany. 


Published by Perkumpulan Aksi Ekologi dan Emansipasi Rakyat (AEER)
Talavera Office Park, 28th floor, Jl. T.B. Simatupang, South Jakarta
http://aeer.or.id/

# Table of Contents

Photo Credit : up: Abdus Somad / AEER & down : upcrenewables.com

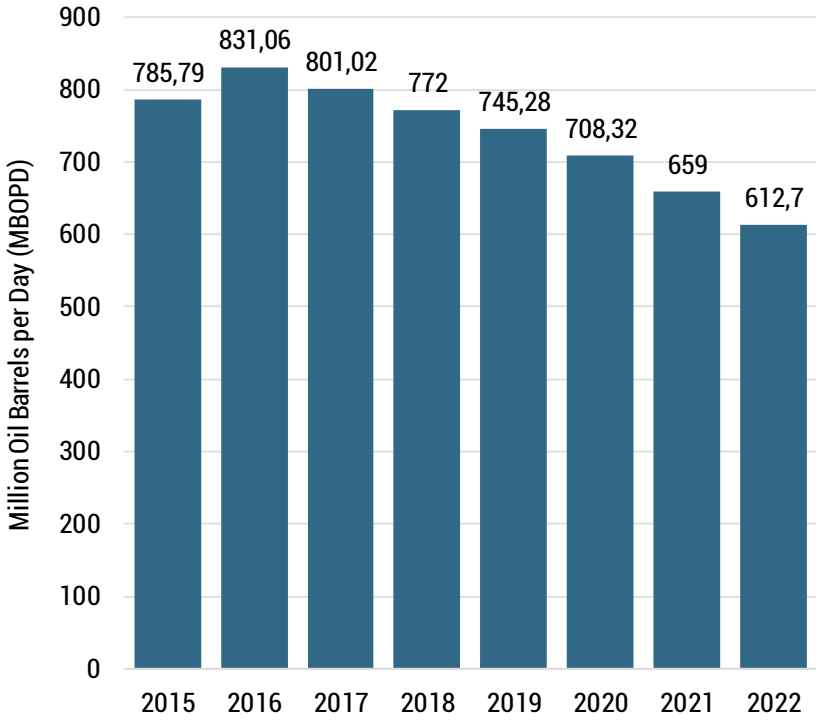
## A. Indonesia's Energy Sector Landscape

Indonesia, the world's largest archipelago, has emerged as one of the fastest-growing economies globally driven by its substantial population and abundant natural resources. With its growth trajectory rivaling South Korea, Singapore, and China, Indonesia's energy sector has played a pivotal role in supporting this remarkable economic expansion (International Energy Agency, 2022). As the nation rebounds from the global pandemic, the energy sector has seen significant shifts in both supply and demand, mirroring broader economic trends. Indonesia's economy rebounded strongly in 2021, with a growth rate of 3.73%, and this upward trend continues until 2022, with a growth rate of 5.31% sides (World Bank, 2023). These economic figures necessitated a proportional increase in energy production and consumption. However, the dynamics of the energy sector are shaped by various factors, including the production of different energy sources and their impacts on domestic and international markets.

Over the past two decades, Indonesia's oil production has experienced a steady decline, primarily stemming from the Asian Financial Crisis of 1997 and the subsequent reform of 1998. These events have had a profound impact, causing the share of the oil and gas sector in the economy to shrink drastically, falling from 10% in 2000 to just 2.5% in 2021. Furthermore, in 2003, Indonesia transitioned from being a net oil exporter to a net oil importer, reflecting a substantial shift in the country's energy dynamics (International Energy Agency, 2022). Figure 1 show that this trends still occurring in the past several years; oil and gas production decreased from 801.02 Million Oil Barrels per Day (MOBPD) to 612.7 MOBPD in 2022 (MEMR, 2023).

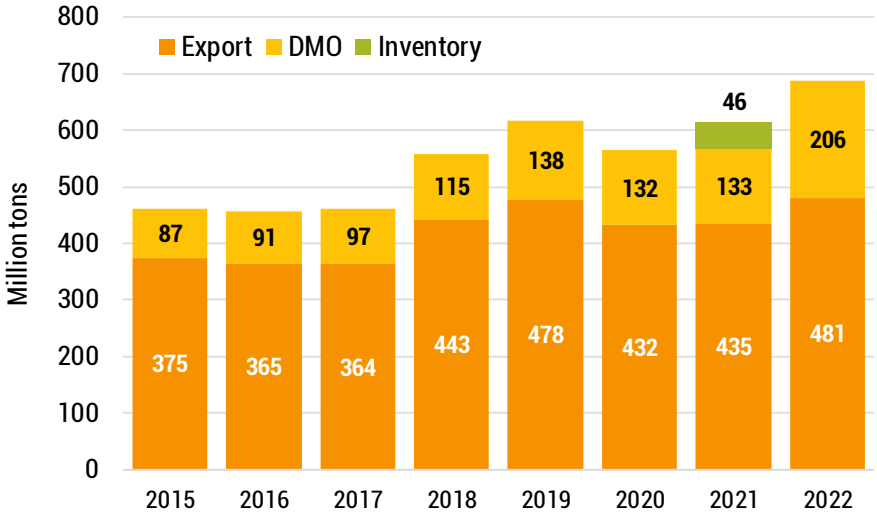
Conversely, coal production in Indonesia increased over the same period. Figure 2 depicts an upward trend in coal production from 462 million tons in 2015 to 687 million tons in 2022, or about ~48% increase in just seven years. This figure also informs that in 2015 – 2022, on average, more than 70% of domestically-produced coal was exported to meet international demands. Together with natural gas, coal now constitutes nearly 20% of Indonesia's net goods exports. Moreover, this also made Indonesia as the top coal exporter by weight and the sixth-largest natural gas exporter (International Energy Agency, 2022). This increase in coal production can be attributed not only to international demand but also to the surge in domestic electricity requirements. As depicted in Figure 3, domestic electricity demand has grown significantly, reaching 304,331 gigawatt-hours (GWh) in 2022, with nearly 99% of this power being generated domestically (MEMR, 2023).

***Figure 1.*** *Oil and Gas Production (MBOPD), 2015 – 2022*



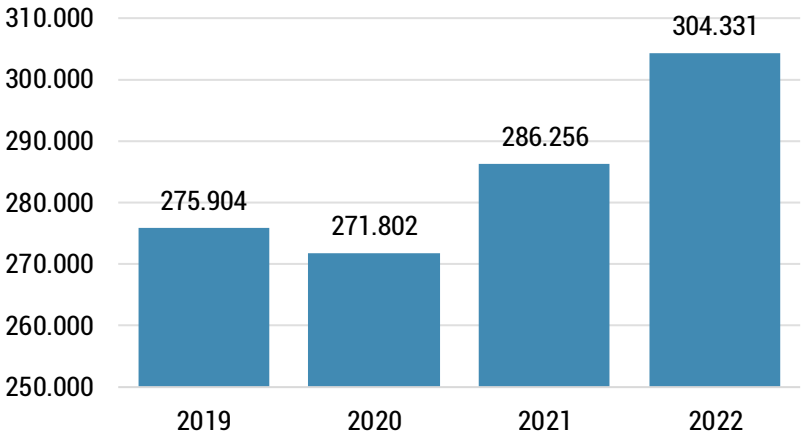

*Source: MEMR (2023)*

***Figure 2.*** *Coal Production (Million tons), 2015 – 2022*




*Source: MEMR (2023)*

***Figure 3.*** *Domestic Electricity Demand Trends (GWh), 2019 – 2022*



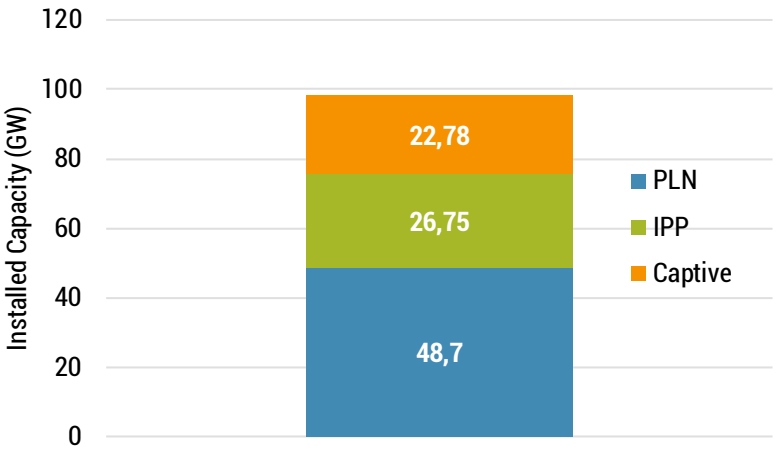

*Source: MEMR (2023)*

Indonesia's preference for fossil-based energy sources is evident in various aspects of the energy landscape. First, there is significant consumption of fossil fuels, as shown in Figure 4. The total fossil-fuel consumption saw an upward trend between 2015 and 2019, only to be disrupted by the COVID-19 pandemic, which led to a substantial decrease to 65.72 million kiloliters (KL). The sector is gradually recovering in 2021 and 2022, reflecting the resilience of the country's fossil fuel industry.

The dominance of fossil-based energy sources extends to the electricity sector, as illustrated in Figure 5. Fossil-based energy sources, including oil, gas, and coal, have consistently accounted for over 85% of Indonesia's Total Energy Supply (TES) from 2015 to 2021. While there has been a slight decrease in the contributions of oil and gas, the share of coal in TES has steadily increased, reaching 37.6% by 2021. By the third quarter of 2022, the Ministry of Energy and Mineral Resources (MEMR) reported that coal's share in the national energy supply mix had increased to 43% (MEMR, 2023). This surge in coal usage can be attributed to substantial investments in coal-fired power plants (CFPP), which have increased electricity generation from approximately 35 terawatt-hours (TWh) in 2000 to nearly 190 TWh in 2021, accounting for almost two-thirds of Indonesia's electricity generation (International Energy Agency, 2022). As of July 2023, the Global Energy Monitor (GEM) reported 238 active CFPP units with a total capacity of 45.4 gigawatts (GW), highlighting the country's significant reliance on coal for power generation (Global Energy Monitor, 2023).

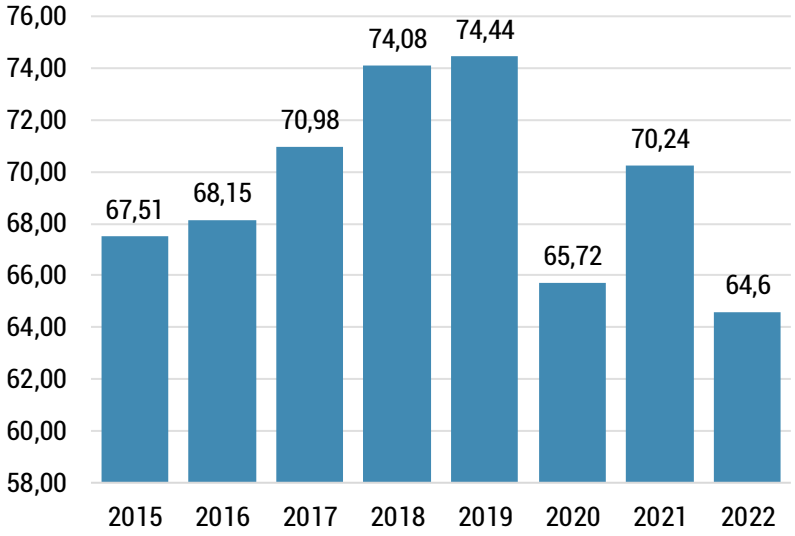
In addition, some of the installed power plants were privately owned, either in on-grid (connected to PLN's network) or off-grid system. Preliminary assessment by KPMG & ADB (2023) imply that in total, there were 26.75 GW and 22.78 GW of installed capacity within the independent power producers (IPPs) and captive power plants (connected to industrial sites or areas) respectively (Figure 4). By this figure, captive power plants estimated to contribute around 23% of total installed generation capacity in Indonesia. Moreover, around 60% of all captive power plants were powered by coal, reaching capacity of 13 GW. Nickel and pulp and paper were the two industries which mostly powered by captive power.

***Figure 4.*** *Total Installed Capacity of Power Plants by Ownership, Q2 2023*



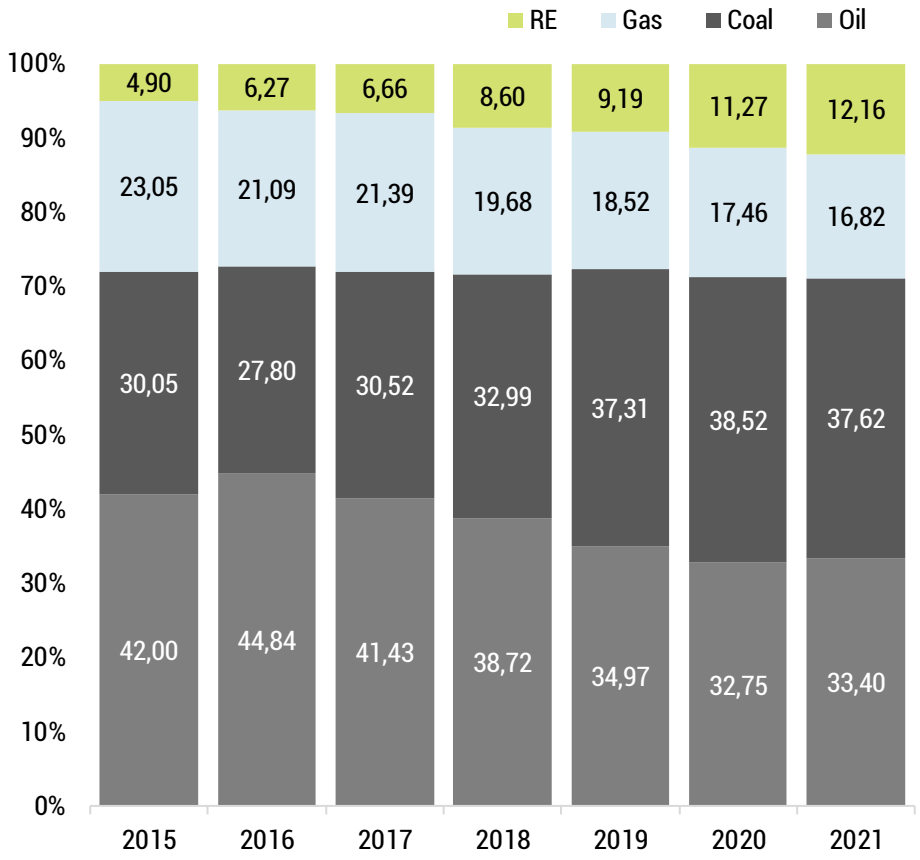

*Source: KPMG & ADB (2023)*

***Figure 5.*** *Fossil Fuel Consumption (Million KL), 2015 - 2022*




*Source: MEMR (2023)*

***Figure 6.*** *Indonesia's Energy Supply by Sources (%), 2015 – 2021*



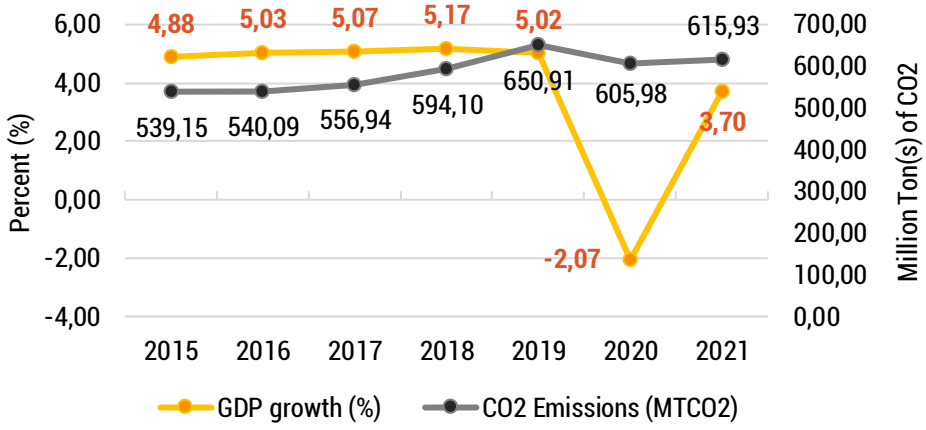

*Source: MEMR (2022)*

In contrast, shares of renewable energy (RE) in the TES remain low within the same period (Figure 5). Although there has been an increase from 4.9% in 2015 to 12.16% in 2021, the updated data from MEMR (2023) revealed that RE's contribution in the national energy mix has been decreased to 10.4% in the third quarter of 2023. These figures highlight the challenges faced by Indonesia's renewable energy sector. Despite its potential, RE has struggled to gain significant foothold in the country's energy landscape. The dominance of fossil fuels, particularly coal, and slow progress in transitioning to cleaner and more sustainable energy sources pose substantial obstacles to the growth of the renewable energy sector.

## 1. *Overall and Energy Sector Emission*

Following the economic growth, Indonesia's carbon emission consistently show an upward trends, leading the archipelago to be the world ninth-largest emitter. After experiencing a 6% decline in $CO_2$ emissions in 2020 due to the COVID-19 lockdowns, Indonesia's total energy sector $CO_2$ emissions rebounded in 2021 to 615.93 Million Tons of $CO_2$ (Mt$CO_2$) as in Figure 7. The power sector has emerged as a major contributor to $CO_2$ emissions, accounting for approximately 40% of total emissions in 2021. Notably, coal combustion accounted for less than half of the emissions, with one-third coming from oil and the remainder from natural gas combustion (approximately 15%) and process emissions (approximately 5%). The transport and industrial sectors accounted for approximately one-quarter of the total emissions. Furthermore, within the industrial sector, half of the $CO_2$ emissions from fuel combustion are attributed to heavy industries, such as chemicals, iron and steel, and cement, while the remaining industries account for 30% of the industry's total emissions (International Energy Agency, 2022). These statistics underscore the pressing need for emission-reduction strategies and cleaner energy solutions in Indonesia's industrial and manufacturing sectors.

***Figure 7.*** *GDP Growth and $CO_2$ Emissions, 2015 - 2021*




*Source: Global Carbon Budget (2023); World Bank (2023)*

## 2. *Setting the Course: Indonesia's Energy Policy Landscape*

In 2014, the Indonesian government released Kebijakan Energi Nasional (KEN), a milestone in the nation's energy policy landscape. This comprehensive framework, which supplemented the 2007 Energy Law, set forth an array of targets and aspirations. At its core, KEN aimed to transform the energy sector by increasing the share of renewable energy (RE) in the total energy supply (TES). By 2025, Indonesia aims to reach a 23% share of RE in TES, with even more ambitious targets of 31% by 2050, but the progress is very slow as in early 2023 it is 12.5%. The significant accomplishments achieved by the country demonstrate its dedication to minimizing carbon emissions and shifting towards more environmentally friendly energy sources. Moreover, the KEN envisioned a significant expansion in electricity access and consumption. By 2025, Indonesia aimed to increase its electricity demand to 2,500 kilowatt-hours (kWh) per capita, a vital step in improving the living standards of its citizens. Looking further ahead to 2050, the target was set even higher at 7,000 kWh per capita (Perusahaan Listrik Negara, 2021). Indonesia's determination to enhance its quality of life and foster economic development for its people is reflected in increased electricity access. In addition, KEN recognized the importance of energy efficiency and sustainability. The goal is to reduce the final energy intensity by 1% annually from 2015 to 2025. This commitment to energy efficiency demonstrates Indonesia's recognition of the value of conserving resources and minimizing waste.

Building upon the foundation laid by KEN, the Government of Indonesia (GoI), through the Ministry of Energy and Mineral Resources (MEMR), introduced the National Energy Plan (RUEN) in 2017. This plan outlined specific milestones and objectives designed to bring KEN's vision into life. RUEN has become a guiding light for future energy planning and serves as a strategic roadmap for Indonesia's energy landscape. It integrates various sectoral and regional documents, ensuring a unified and coherent approach to energy transitions.

Realization of these ambitious targets necessitated concrete plans, investments, and practical strategies. One such document, the current RUPTL (2021-2030), outlined the state-owned electricity company's (PLN) plans to increase the renewable energy generation capacity to approximately 18.1 GW by 2030. This ambitious endeavour included the addition of 10 GW of new hydropower, 3 GW of geothermal, 0.4 GW of wind, and 4.7 GW of solar photovoltaic (PV) capacity. These plans signified a significant step towards achieving the RE targets outlined in the KEN and RUEN.

However, amidst these renewable energy expansion plans, there remains a notable presence of coal-fired power plants. RUPTL indicated that approximately 14 GW of coal-fired plants was to be added during the same period, constituting one-third of the total capacity addition. This coexistence of renewable energy and coal-fired plants underscores the challenges of transitioning away from fossil fuels and the complexities of balancing Indonesia's energy needs with its environmental commitments.

One of the major challenges faced during Indonesia's energy transition journey is the disparity in incentive mechanisms for renewable energy development. Although ambitious targets have been set, incentives for renewable energy are not always aligned with these goals. Subsidies for fossil fuels, such as the domestic market obligation (DMO), which mandates that coal producers supply power plants with coal at a ceiling price of US$ 70 per tonne (for coal with a calorific value greater than 6,000 kcal/kg), have kept the cost of energy production (BPP/*Biaya Pokok Produksi*) remarkably low. Moreover, low price of coal-generated electricity were also affected by the delay on the implementation of carbon tax and carbon exchange policy. In contrast, MEMR Regulation No. 50/2017 specified maximum purchase prices for hydro and geothermal energy at 100% BPP and 85% BPP for solar PV and wind in the area if BPP above national average. Also these variations in incentive mechanisms have made renewable energy investment less competitive when compared to fossil energy sources, presenting a significant challenge to achieving the transition goals outlined in KEN.

## 3. *International Commitments and the Road Ahead: NDC and Long Term Strategies*

In recognition of the urgency to combat climate change, Indonesia has made significant international commitments that align with its domestic energy transition aspirations. In 2022, Indonesia submitted its Enhanced Nationally Determined Contribution (ENDC) to the United Nations Framework Convention on Climate Change (UNFCCC). This ENDC represents a revision of Indonesia's previous Nationally Determined Contribution (NDC) in 2016 and the Updated NDC in 2021. In this latest commitment, Indonesia strengthened its resolve to unconditionally reduce emissions, raising the target from 29% (as outlined in the 2016 NDC) to 31.89% relative to a business-as-usual scenario by 2030. This demonstrates Indonesia's heightened commitment to addressing climate change. Furthermore, Indonesia set a more ambitious conditional emission reduction target, increasing it from 41% (as stated in the 2016 NDC) to 43.2%, contingent on international support. This conditional target reflects Indonesia's recognition of the need for global cooperation and financial assistance to achieve deeper emissions reductions. In addition to the ENDC, Indonesia provided the long-term low-carbon and climate resilience strategy (LTS-LCCR) 2050, which outlines a visionary path. This strategy aims to reach net-zero emissions by 2060, or potentially even sooner. Indonesia's LTS-LCCR reflects its long-term commitment to mitigating climate change and embracing a low-carbon and resilient future.

Indonesia's energy transition commitment is a multifaceted journey that combines ambitious domestic goals with international environmental responsibility. As a nation strives to balance its energy needs, economic growth, and sustainability, it faces the intricate challenge of transitioning away from fossil fuels. The incentives for renewable energy development and the coexistence of renewable and coal-fired plants highlight the complexities of this transition. In the international arena, Indonesia's strengthened commitment to the ENDC and the vision set forth in the LTS-LCCR demonstrate its dedication to addressing climate change and contributing to global efforts to combat environmental degradation. The path ahead of Indonesia's energy transition is marked by opportunities, challenges, and the imperative to align domestic and international goals for a more sustainable and environmentally responsible future.

## B. The Just Energy Transition Partnership (JETP) : What and How

### 1. *The Just Energy Transition Partnership: Principles, Objective, and the Case of Indonesia*

In pursuit of a sustainable energy future, nations across the globe grapple with a challenging trilemma, particularly emerging and developing economies. The World Energy Council (WEC) has defined the trilemma, which is centered on the precarious balance between energy security, equity, and environmental sustainability. Achieving this equilibrium is of paramount importance, and to guide this ambitious but necessary journey, a set of core principles for a just energy transformation has emerged.

The Alliance for a Just Energy Transformation (AJET), a voluntary initiative that aims to catalyse a shared understanding and transformative action for the success of Just Energy Transition policies worldwide which were promoted by United Nations Development Programme (UNDP), outlined eight core principles of Just Energy Transformation. These includes; 1) be guided by science and understand, 2) be fair and uphold the rights, needs and values of everyone, 3) be sustainable, ambitious and consistent, 4) be comprehensive, transparent and inclusive, 5) ensure clearly-defined, robust and meaningful stakeholder engagement and social dialogue, 6) be centered on climate justice, 7) recognize energy access as an essential contributor, and 8) ensure access to justice, decision making and information (AJET, 2023).

For Indonesia, the late 2022 G20 Summit held in Bali marked a significant turning point in the global energy landscape. During this summit, Indonesia and a group of developed countries known as the International Partners Group (IPG) made a resolute commitment to establish the Just Energy Transition Partnership (JETP). The IPG members includes the United States of America (USA), the United Kingdom (UK), Norway, Japan, Italy, Germany, France, Denmark, and Canada. The IPG members pledged substantial US$ 20 billion in funding to support Indonesia's energy transition milestones over the next three to five years. Of this financial commitment, approximately US$ 10 billion will be provided through public funding from IPG countries, while the remaining US$ 10 billion will be coordinated by the Glasgow Financial Alliance for Net Zero (GFANZ). Private financial institutions, including major players such as the Bank of America, CitiGroup, Deutsche Bank, HSBC, Macquarie, MUFG and Standard Chartered will contribute to this effort.

The commitment translated into joint objectives of JETP, which are:

- **Emission Reduction:** The first objective is to achieve a significant reduction in power sector emissions by 2030, setting an absolute cap of no more than 290 million tons of $CO_2$. This represents a decline from a 2030 baseline value of 357 million tons. The aim is for emissions to immediately decrease thereafter on an ambitious trajectory. Ultimately, the goal is to achieve net-zero emissions in the power sector by 2050, which includes accelerated retirement of coal plants subject to international support.

- **Renewable Energy Deployment:** The second objective is the rapid deployment of renewable energy sources. Aspiration is for renewable energy to comprise at least 34% of all power generation by 2030, paving the way for a sustainable and green energy mix.

## 2. *Measuring the Field: Investment Planning and Policy Plan*

In November 2023, the JETP Secretariat in Indonesia announced the Comprehensive Investment and Policy Plan (CIPP). This document outlines the implementation plans of the Joint Statement agreed upon during the G20 summit in Bali in November 2022. After months of thorough research and planning, the JETP Technical Working Group acknowledged the challenges posed by Indonesia's energy sector, particularly the presence of captive coal plants. Consequently, the working group redirected some of the joint targets, placing greater emphasis on on-grid systems.

JETP Secretariat' CIPP target of coal phasing out target is 1.6 GW, much lower than 15 GW that was announced by the Ministry of Finance when it launched ETM Country Platform during Side Event G20, 16 November 2022. Environmental organisation criticism CIPP list of coal power plant to be phased out is the same project as ADB's ETM coal power plant phasing out (660 MW Cirebon-1 coal power plant, 969 MW Pelabuhan Ratu coal power plant), both located in West Java Province.

Photo Credit : AEER

The CIPP is primarily concerned with on-grid emissions and pathways, encompassing targets such as a cap of 250 million tons of $CO_2$ for on-grid power sector emissions in 2030, achieving a 44% share of renewable energy generation by 2030, and ultimately achieving net-zero emissions in the power sector by 2050. To realize these objectives, the CIPP identifies five investment focus areas (IFAs) that require substantial investments, totalling US$ 95.9 billion between 2023 and 2030, and a significant US$ 580.3 billion between 2023 and 2050. As in Table 1, the five IFAs includes; 1) transmission lines and grid deployment, 2) early CFPP retirement and managed phase-out, 3) dispatchable RE acceleration, 4) variable renewable energy (VRE) acceleration, and 5) RE supply chain enhancement. Acceleration of dispatchable renewable energy sources, including hydro and geothermal power, predicted to be among the most expensive planned investment (49.2 billion). To bolster renewable power and enable electricity networks, annual average power sector investments must increase significantly, surpassing US$ 15 billion by 2030, exceeding US$ 25 billion during the decade of 2031-2040, and reaching nearly US$ 30 billion between 2041 and 2050. Although US$ 20 billion committed under the JETP agreement plays a crucial role, an additional US$ 110 billion in cumulative power sector investments is required by 2030 to realize the JETP scenario.

***Table 1.*** *Five Investment Focus Areas (IFAs) of JETP Indonesia*

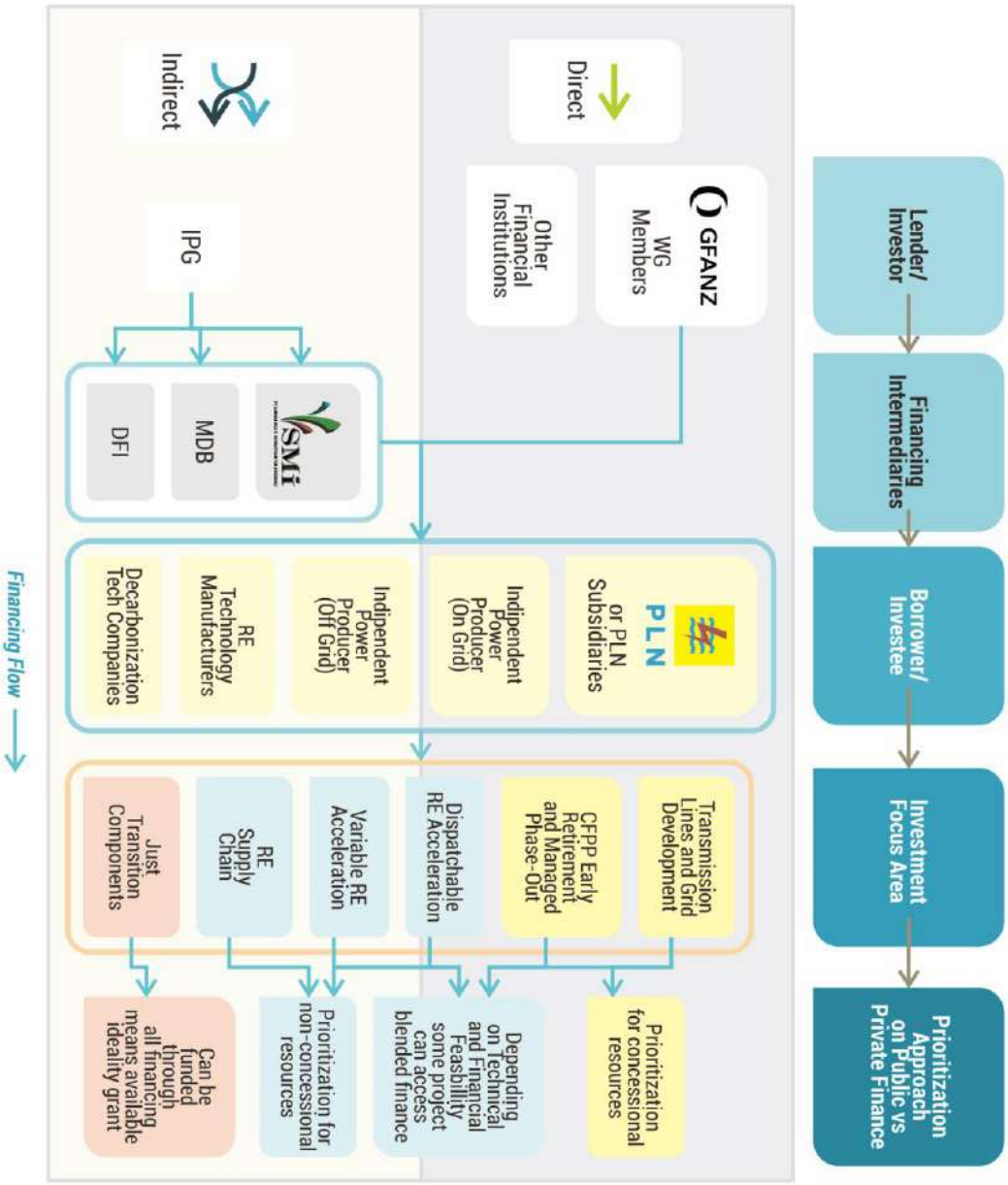
| No | Focus Area | Target | Investment by 2030 (US$) |
|---|---|---|---|
| 1 | Transmission lines and grid deployment | 14,000 km circuit of transmission | 19.7 billion |
| 2 | Early CFPP retirement<br>CFPP managed phase-out | 1.7 GW<br>55.8 GWh (2030) | 1.1 billion<br>1.3 billion |
| 3 | Dispatchable RE acceleration | 16.1 GW built out | 49.2 billion |
| 4 | Variable Renewable Energy (VRE) acceleration | 40.4 GW built out | 25.7 billion |
| 5 | RE supply chain enhancement | - | - |
| | Just Transition Assessment Intervention | - | 0.2 billion (minimum) |
| | **Total** | | **97.3 billion** |

*Source: The JETP Secretariat and Working Groups (2023)*

Investment in renewable generation sources is also strategically outlined, with hydropower accounting for the largest share of capital spending over the next two decades, representing over US$ 100 billion in cumulative investments by 2040. The following are geothermal and solar PV, each with over US$ 55 billion in cumulative investments by 2040. Furthermore, investments in electricity networks, which are critical for interconnecting island systems and integrating renewables, are projected to total more than US$ 50 billion by 2040, with US$ 42 billion allocated to transmission and US$ 9 billion designated for distribution. Variable renewables demand greater investments in network infrastructure and system flexibility, although their lower upfront costs in comparison to hydropower and geothermal assist in managing the overall spending requirements.

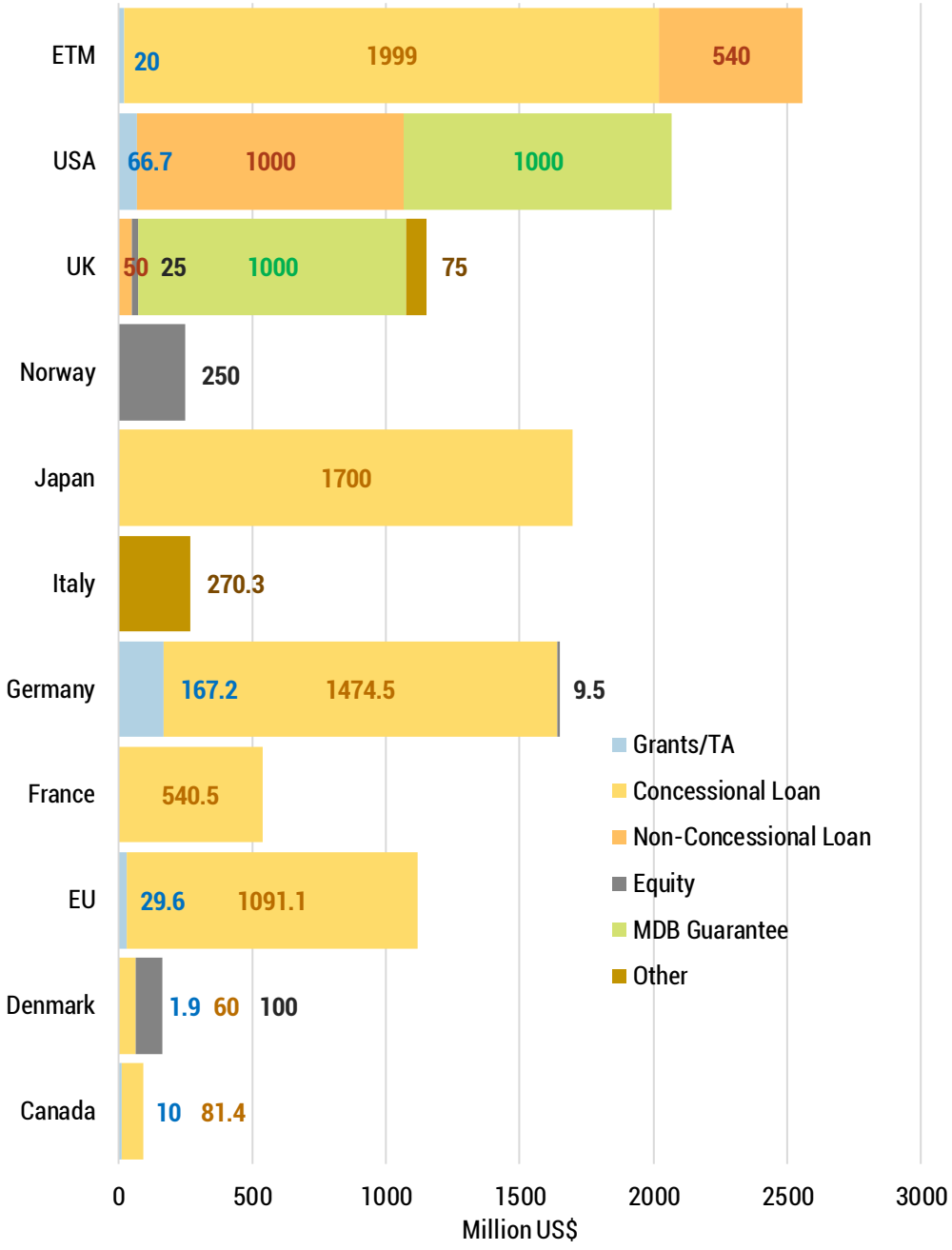
In addition to the breakdown of investment by IFAs, the document also classified the JETP prioritization of capital deployment. JETP's financing sources can be divided into three categories: public, private, and blended finance. Public finance consists of grants and technical assistance (TA), MDB guarantees, concessional loans, non-concessional loans, and equity investment. Meanwhile, private finance can be implemented in the form of commercial loans, equity investments, and capital markets. By combining both types of financing, blended finance can be provided in the form of a credit enhancement mechanism, guarantees, and non-fiscal incentives. As shown in Figure 8, private finance will be prioritized relative to public finance since it is considered to be more accessible and less harmful to the nation's fiscal space. In cases where a project cannot be fully funded by the private sector, public finance can also be used as an enabler to attract private finance, such as by blending concessional and non-concessional finance to reduce costs. Additionally, for highly strategic JETP projects with high risk (or low commercial viability), public finance alone could be an option. This can be achieved through a Special Mission Vehicle (SMV), such as PT SMI, MDB, or other DFIs.

***Figure 8 JETP Prioritization of Capital Deployment***



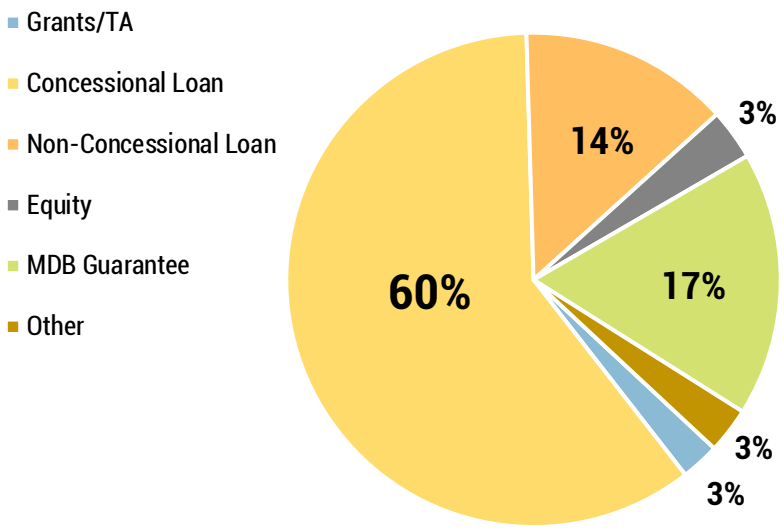

*Source: JETP Secretariat and Working Groups (2023)*

***Figure 9.*** *JETP Public Finance Breakdown by Country/Entity and Funding Mechanism*




*Source: JETP Secretariat and Working Groups (2023)*

***Figure 10.*** *JETP Public Finance Breakdown by Funding Mechanism (Million US$)*




*Source: JETP Secretariat and Working Groups (2023)*

Figure 8 summarizes the planned and implemented JETP public finance by country and funding mechanisms. In total, public finance contributed US$ 11.5 billion to the overall JETP investment plan. Based on amount of pledged contributions, USA (US$ 2.1 billion), Japan (US$ 1.7 billion), and Germany (US$ 1.7 billion) were among the most contributing countries within the JETP scheme.

In addition, some countries such as Japan, USA, and the UK have also contributed to pool funds through Energy Transition Mechanisms (ETM), an energy transition platform organized by the Asian Development Bank (ADB) focusing in the early-retirement of CFPP which launched in 2022. Most of funding mechanism for ETM were concessional loan reaching US$ 6.9 billion or 60% of contributed public finance (Figure 9). Besides, Multilateral Development Bank (MDB) Guarantees and non-concessional loans made up to 17% and 14%, respectively. In comparison, grants (including technical assistance) constitute only make up to US$ 295.4 million or 3% of total public finance.

Beyond investment planning, the JETP Working Group has recommended a set of policy reforms that are integral to the success of the energy transition. These reforms encompass measures such as strengthening domestic supply chains of renewable energy through the reform of Local Content Requirements (TKDN), adjusting supply side incentives, streamlining renewable energy procurement processes, making power purchase agreements (PPAs) more bankable, enabling early coal retirement and coal phase-out, ensuring the financial sustainability of the state-owned utility company, PLN, implementing financing policies that provide robust support for Indonesia's energy transition and decarbonizing captive power. These policy reforms are fundamental to ensuring the success of the Just Energy Transition Partnership in Indonesia, and serve as a model for equitable and sustainable energy transitions globally.

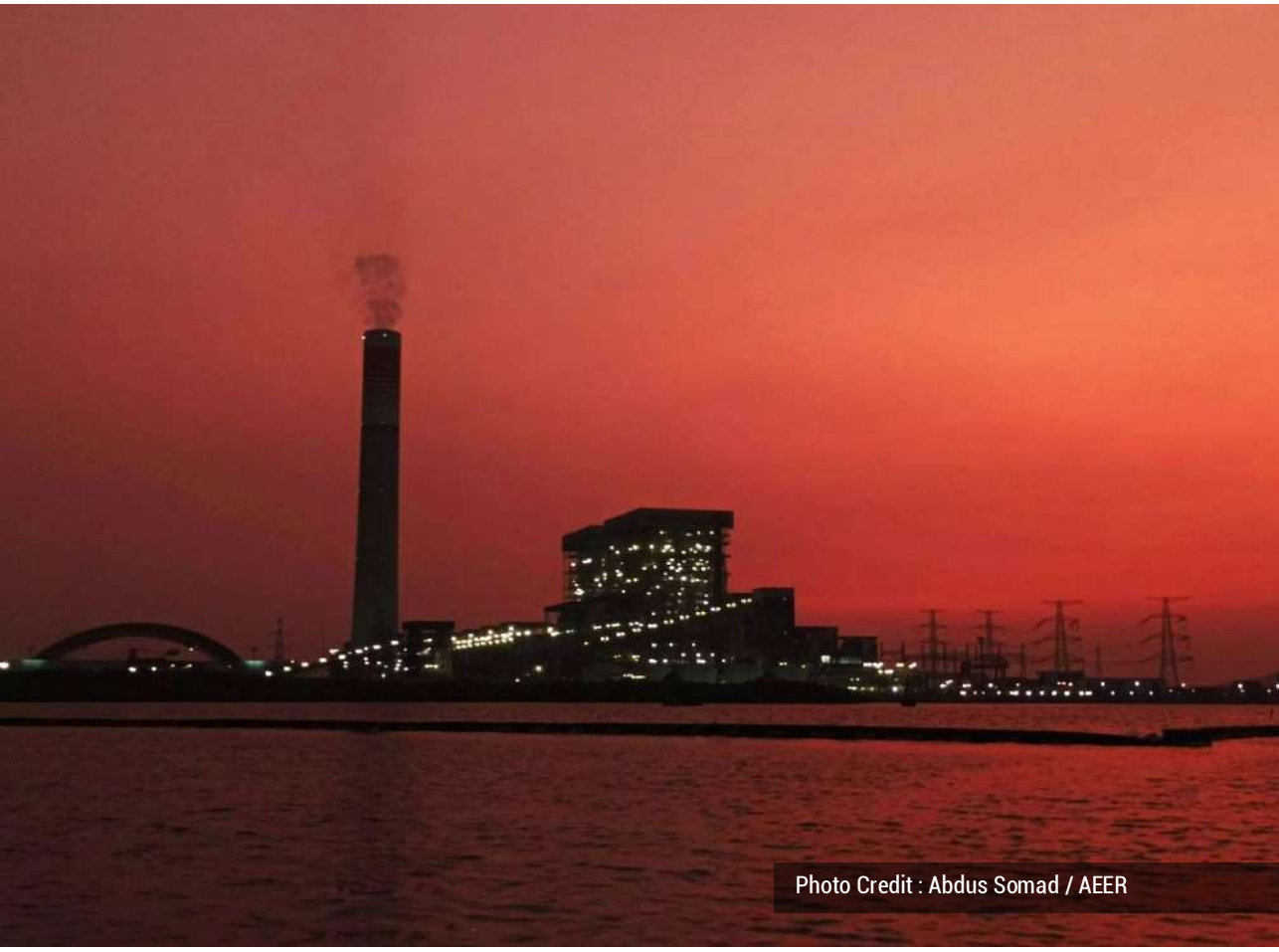


Photo Credit : Abdus Somad / AEER

Photo Credit : plnnusantarapower.co.id

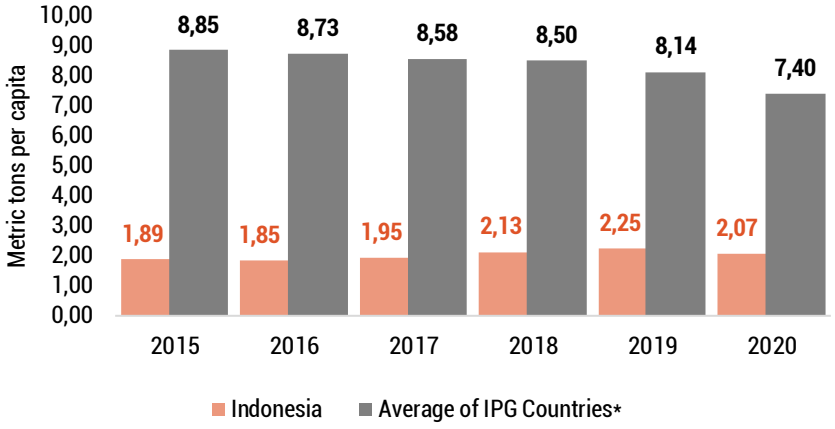
## C. Risk and Challenges

### 1. *Financial Risks*

The financial landscape of the Just Energy Transition Partnership (JETP) were relevant on the complex interplay of historical responsibilities, compensation dynamics, and the looming risks associated with funding mechanisms. At the heart of this financial calculus is the Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC) principle embedded in the 1992 UNFCCC treaty (UNFCCC, 1992). Historically, the CBDR–RC has recognized the varying capabilities and responsibilities of nations in addressing climate change. Developed countries, with their high historical emissions, are encouraged to contribute more significantly than their developing counterparts. This principle, rooted in equity, aims to rectify the disproportionate impacts of climate-related issues (UNFCCC, 1992). However, the landscape has shifted in recent UNFCCC agreements, ushering in a new era in which countries can individually determine their contributions. The principle of "applicable to all" takes precedence, steering away from a rigid framework to a more flexible, bottom-up scheme in determining global efforts (Climate Nexus, 2023).

Figure 10 reveals a contrast between Indonesia and the International Partners Group (IPG) countries in $CO_2$ emissions. From 2015 to 2020, the average $CO_2$ emissions per capita of IPG countries were nearly four times higher than those of Indonesia (World Bank, 2023). This historical disparity underscores the argument that developed nations bear a more significant burden of addressing climate change. However, recent shifts in global agreements have tilted towards a more inclusive approach that demands collective action.

***Figure 11.*** *$CO_2$ Emissions (metric tons per capita), 2015 – 2020*
** IPG Countries: USA, Japan, UK, Canada, Germany, Norway, Denmark, France, and Italy*



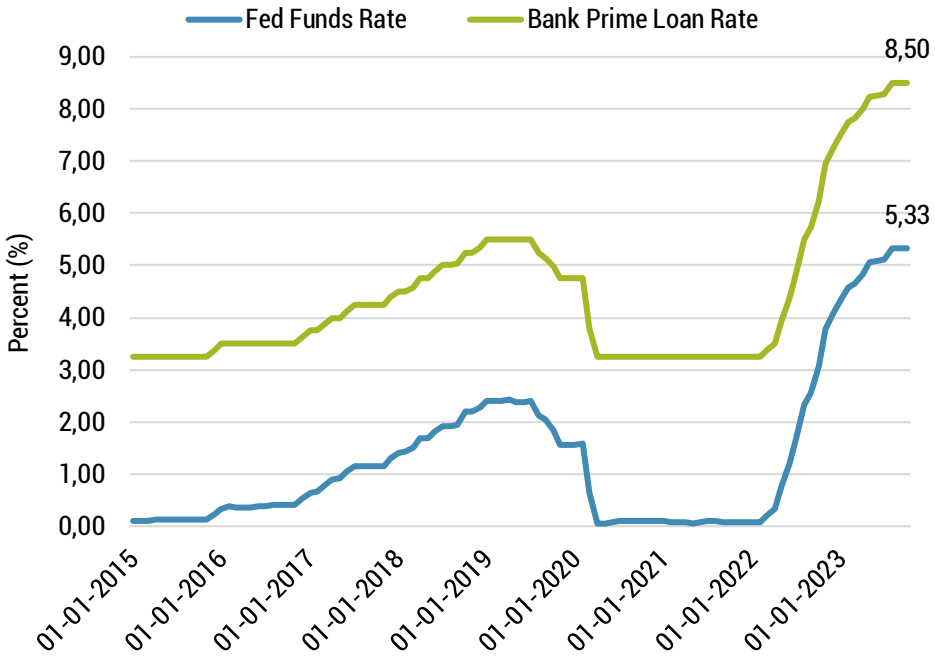

*Source: World Bank (2023)*

A study by Fanning and Hickel (2023) unveils that developed countries owed climate compensations to the Global South. The total amounts to a staggering US$192 trillion, averaging US$940 per capita per year from 2020 to 2050. This translates to an annual compensation of US$6.2 trillion, approximately 8% of the world GDP in 2018. Applying these figures to Indonesia's population, the Global North is estimated to owe Indonesia around US$261.9 billion per year. This profound level of financial obligation underscores the historical responsibility of developed nations and the persistent economic disparities.

Examining the funding structure of JETP, grants, including technical assistance, constitute only 3% of total public funding. By contrast, loans, both concessional and non-concessional, constitute 74% of the funding pool. Japan, Germany, and the European Union provided most of the concessional loans, while the United States and the United Kingdom is at the forefront in proposing non-concessional loans within the JETP framework. This funding structure, while essential for driving the transition, introduces significant financial risk, especially concerning non-concessional loans that require repayment at global market interest rates.

As shown in Figure 11, the US Fed Funds Rate, a policy rates which depository institutions (mainly commercial banks) lend reserve balances to other institutions overnight held by the Federal Reserve, seems to be fluctuating in the last eight years – as it signalling the market to push or limit the money supply. Along with the Fed Funds Rates, the bank prime loan rate, the interest rate that commercial banks charge to their customers, also fluctuates, reflecting the global and US economics states. In 2022, the average bank prime loan rate has reached 4.85%, before almost doubled to 8.5% in the beginning of October, 2023. Taking this figure alone, if Indonesia owed US$ 1 billion of non-concessional loans to the US, it should have pay US$ 48.5 million per annum of interest rates.

***Figure 12.*** *The US Effective Fed Funds Rate and Bank Prime Loan Rate, 2015 - 2023 (monthly)*




*Source: Federal Reserve Bank of St. Louis (2023)*

The potential magnitude of debt under the JETP scheme raises concerns regarding Indonesia's future fiscal space. Non-concessional loans, in particular, could strain the national budget, impacting the country's ability to meet other critical financial commitments. The Ministry of Finance's Regulation (MoFR) No. 103/2023 acts as a legal umbrella to provide a sovereign guarantee for energy transition-related activities, adding another layer of complexity. While this guarantee attracts public and private funds, offering a shield against default risk, it simultaneously poses a risk to the national budget in the near future.

Moreover, the reliance on private funding, including from the Glasgow Financial Alliance for Net Zero (GFANZ), introduces a layer of uncertainty. International financial institutions' favorability of non-concessional loans may lead to larger private funding portions, further inconvincing IPG countries' financial commitments.

Despite the existence of Multilateral Development Bank (MDB) guarantees, their indirect nature, particularly the conditionality tied to reaching the International Bank of Reconstruction and Development's Single Borrower Limit (IBRD SBL), adds intricacies to the funding dynamics. The availability of an additional US$2 billion is contingent on Indonesia reaching its SBL, further emphasizing the intricacies and conditions of international financial support.

In navigating the financial risks of JETP, Indonesia finds itself at the intersection of historical responsibility, complex funding mechanisms, and the imperative for sustainable energy transition. Striking the right balance between attracting necessary funds and safeguarding the national budget requires nuanced policy decisions and vigilant risk-management strategies to ensure the success of JETP and, by extension, Indonesia's energy transition journey.

## *2. Privatization*

In 1985, Indonesia initiated a pivotal shift in its energy landscape by enacting the Electricity Law, allowing private entities to function as independent power producers (IPPs) within the bounds of supplying electricity exclusively to Perusahaan Listrik Negara (PLN) under Power Purchase Agreements (PPAs). Subsequent updates in 2002 extended the role of private companies beyond power generation to include participation in the retail business. By 2009, Indonesia embraced a competitive electricity market for the generation sector, leading to a diverse power plant landscape comprised of PLN-owned, IPP, and captive power plants, accounting for 49.6%, 27%, and 23%, respectively, of the total installed capacity by the second quarter of 2023 (KPMG and ADB, 2023).

However, the configuration of these entities, influenced by a possibly ineffective market regulator with potential political considerations, may lead to suboptimal outcomes and market failure. The absence of robust competition law and policy, along with inadequate market oversight, poses the risk of market power abuse. This has once happened in the UK as highlighted by Hakam (2019). In one of the more current examples, privatisation also proved to be unfavourable towards public interest in Australia. Back in the 1990s, the state government of Victoria has sold their electricity assets for US$23.5 billion. Electricity producers has benefitted from the market over decades, while consumers faced high prices and low-quality electricity (Denniss, 2022). An effective preventive approach, involving strategic screening of players' behavior and a cautious application of guidelines, is essential to foster competition and consumer welfare. Configurations that allow excessive market power, potentially leading to significant price increases, should be avoided in the restructuring of the electricity market.

The electricity industry's susceptibility to the exercise of market power is underscored by Arellano (2003), who notes factors such as the inability to store electricity, inelastic demand, frequent producer interactions, and binding capacity constraints during high-demand periods. This inherent vulnerability raises concerns about the impact of private ownership on the electricity distribution sub-sector. A study in Brazil by Muller & Rego (2021) indicates positive effects of private ownership on quality and various financial indicators, including reduced operational costs and stabilized profitability.

Photo Credit : AEER

Ownership type also plays a role in the efficiency and productivity of electricity firms, as suggested by Borghi et al. (2016). The study emphasizes that relative efficiency depends on external governance factors, with public ownership associated with lower productivity in poor governance environments but yielding opposite results in countries with a higher-quality institutional environment. Drawing from global examples, studies evaluating the effects of privatization on quality indicators reveal positive outcomes in Latin America (Andres, Foster and Guasch, 2006), neutral effects in Italy (Fumagalli et al., 2007), and positive or neutral effects in Brazil (Silvestre et al., 2010; Filardi et al., 2014). The JETP Comprehensive Investment and Policy Plan (CIPP) introduce equity investment as a potential financing modality, with the International Partners Group (IPG) pledging US$ 384.5 million for such investments. This infusion of equity capital aims to support renewable energy (RE) infrastructure and value chain development, providing an avenue for private market players to invest in the domestic power market and contribute to Indonesia's energy transition.

In essence, the privatization risks of JETP funding comprises of exercising market power activity which could hamper public interest due to unfavourable electricity tariffs. Moreover, private investors are mainly motivated by profit, which could conflicting with broader welfare objectives such as affordable and accessible energy for all of the archipelago. With regards to national assets, equity investment often entails ownership stakes in the energy infrastructure. If not managed appropriately, this could result in a scenario where a significant portion of Indonesia's critical national assets is owned and control by private entities. Those risks highlight the need for careful consideration of market configurations, effective competition policies, and external governance factors to ensure the success and sustainability of Indonesia's energy transition. Balancing private and public interests, while avoiding undue market power and fostering competition, becomes crucial in navigating the complexities of the evolving energy landscape.

### *3. Corruption*

Indonesia's fight against corruption faces a daunting challenge, as reflected in the recent Transparency International report, where the Corruption Perception Index (CPI) for 2022 saw a decline by four points compared to the previous year, settling at a concerning 34 out of 100. This continuous downward trend from the 2019 level of 40 raises alarm bells, positioning Indonesia at a relatively low rank of 110 among 180 countries, notably lagging behind neighboring nations like Malaysia and Singapore.

Amidst this backdrop, Transparency International Indonesia has voiced apprehensions about potential corruption risks associated with plans for the early retirement of coal-fired power plants, including those under the purview of the Just Energy Transition Partnership (JETP). The heightened susceptibility to corruption is a matter of serious concern, especially in strategic sectors like energy, where large-scale funding and transformative initiatives are at play (Nastitie, 2023).

The JETP, with its ambitious funding commitments and transformative goals, has the potential to attract rent-seeking behavior among both market players and policymakers. The infusion of substantial funds within the energy sector creates an environment where the allure of illicit gains may overshadow the imperative of genuine progress in the energy transition. It becomes crucial to scrutinize the mechanisms through which funds are allocated and projects are executed to prevent any diversion of resources for personal gain.

A study by Gultom in 2021 brings attention to the impact of extractive political institutions on the efficiency of Independent Power Producers (IPPs). The findings reveal a reduction in efficiency by -0.135 points, underscoring the importance of institutional frameworks in shaping the effectiveness of power generation entities. The historical perspective offered by the study, comparing efficiency and productivity before and after the New Order, sheds light on the long-term consequences of political influences on the energy sector.

Looking back at the first generation IPPs under the Soeharto regime, the specter of corruption looms large. Studies conducted by Wells (2007), Wu and Sulistiyanto (2006), and Bosshard (2022) depict a landscape where corruption, coupled with a lack of competition and transparency, hampered IPP projects. The autocratic regime utilized Power Purchase Agreements (PPAs) as a channel for rent extraction, wherein state-owned electricity company PLN committed to purchasing power at predetermined prices for the entire duration of the agreement. This historical context serves as a stark reminder of the pitfalls that lurk when corruption infiltrates the energy sector.

As Indonesia sets the course for renewable energy (RE) development through JETP funding, the role of civil society becomes paramount. The potential risks associated with non-transparent PPAs and private equity investments in the energy sector necessitate a vigilant and informed public. Civil society must actively engage in scrutinizing the terms and conditions of agreements, ensuring transparency in decision-making processes, and holding stakeholders accountable for their actions.

To mitigate corruption risks, the Indonesian government should prioritize transparency in all dealings related to JETP funding. Clear and accountable mechanisms for fund allocation, project selection, and execution must be established. The government should also strengthen anti-corruption measures and collaborate with civil society organizations to create a robust system of checks and balances.

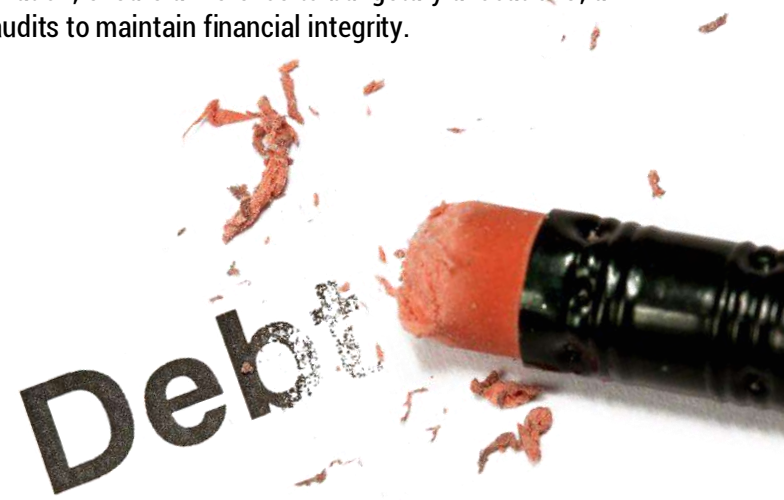
In conclusion, the fight against corruption is integral to the success of Indonesia's energy transition. The JETP, with its transformative potential, should be implemented with utmost transparency, ensuring that the funds allocated for renewable energy projects truly contribute to the nation's sustainable development rather than becoming a source of illicit gains for a few. It is a collective responsibility to safeguard the integrity of Indonesia's energy sector and pave the way for a just and transparent energy transition.

Photo Credit : Yuliani / EEER

## D. Solutions to be Considered

### *1. Debt Swap and Debt Cancellation*

The energy transition in Indonesia requires significant funding, which poses inherent financial risks for the country. To address these risks and enhance sustainability, a strategic consideration could be the exploration of debt swap initiatives. Negotiating favorable terms for existing debts related to non-renewable energy projects with international partners and financial institutions could significantly ease the future financial burden on Indonesia. Furthermore, fostering partnerships with global organizations committed to sustainable development, such as the Green Climate Fund, could provide additional financial support and technical assistance. Collaboration with these entities may not only mitigate financial risks but also catalyze the adoption of best practices and innovative solutions. To enhance accountability and transparency, it is recommended that an independent body be established to oversee financial management. This entity would monitor fund utilization, ensure adherence to budgetary allocations, and conduct regular audits to maintain financial integrity.



Indonesia was well aware of this scheme. In 2009, Indonesia entered into a debt swap deal with the United States, which involved swapping nearly US$30 million in Indonesian government debt for eight years until 2017. The deal involved the Indonesian government's commitment to spend the sum on non-government organizations' (NGOs) projects focused on reforestation and conservation of Sumatra's tropical forests. Debt swaps are generally viewed as beneficial for all parties involved. Countries with heavy debt can ease their financial burden, conserve valuable foreign currency, and free up budgetary resources for various purposes, including environmental initiatives. Meanwhile, environmental organizations can benefit from these swaps because of the gap between the redemption value and the secondary market value of the acquired debt, which amplifies their financial resources and expands their influence and connections. On the other hand, creditors, typically comprising developed country governments or private banks, can see an increase in the value of any remaining debt claims, which concurrently enhances their environmental credentials (Cassimon, Prowse and Essers, 2010).

However, Cassimon et al. (2010) found several shortcomings in the debt-swap scheme between Indonesia and the US. First, although the Indonesian swap does increase available resources to Indonesia at the country level, it does not generate extra budgetary room for the Indonesian government. Second, the extent to which the resources provided by the swap are additional to other donor support and reserved domestic budget lines for conservation goals is unclear. Third, the swap was too insignificant to create indirect (positive) economic effects. Fourth, the swap is very much in line with current national policy, but fifth, it contradicts the new aid delivery paradigm's emphasis on aligning with the system. Therefore, if this scheme were to be reintroduced, it is crucial that all stakeholders ensure that it makes sufficient allowance for the government's budget while also having a positive impact on the economy.

## 2. *Systemic Transparency*

Privatization, while presenting potential benefits, carries inherent risks as evidenced by global research and historical experiences. Consequently, the prudent management of private sector involvement is crucial to prevent unintended consequences. One approach to mitigate privatization risks is to establish and enforce rigorous regulatory frameworks.

Drawing on lessons learned from past privatization efforts, the Indonesian government should design regulations that prioritize transparency, fair competition, and accountability. Regulatory bodies, such as the electricity market authority, should be empowered to prevent market abuses and ensure fair practices. Learning from international experiences, Indonesia can strengthen its own legal framework to protect against undue market power concentration.

Moreover, to avoid the negative impacts associated with private equity involvement, careful consideration should be given to the size and nature of private equity firms engaged in the energy transition. Implementing policies that encourage responsible practices and discourage excessive risk-taking by private equity entities is essential. Size differentiation could be incorporated, favoring larger private equity firms with a proven track record of responsible investment practices.

The declining Corruption Perception Index (CPI) in Indonesia underscores the urgent need to address the corruption risks associated with the Justice and Elections Theme Program (JETP). To enhance transparency and reduce corruption vulnerabilities, systemic reforms are imperative. This requires the government to strengthen anti-corruption institutions and enact comprehensive anti-corruption legislation, empowering bodies like the Corruption Eradication Commission (KPK) and ensuring their independence. Whistleblower protection mechanisms should also be incorporated to encourage individuals to come forward with information about potential corrupt activities.

Transparency in all stages of JETP projects, from planning to implementation, is critical. Public disclosure of contracts, financial transactions, and project outcomes can act as a deterrent against corruption. Digital platforms can be embraced for transparent procurement processes and real-time reporting to enhance accountability and engage the public in monitoring project progress. The utilization of technology, such as blockchain, can provide an immutable and transparent record of financial transactions, reducing the likelihood of corruption. Data-driven decision-making and the incorporation of artificial intelligence for anomaly detection can further strengthen the anti-corruption measures.

To promote transparency and reduce corruption risks, civil society organizations should be involved in the monitoring and evaluation of JETP projects. These organizations can act as watchdogs, ensuring adherence to ethical standards and providing an avenue for citizens to voice concerns. The involvement of civil society can serve as an additional check on corruption and reinforce the government's commitment to transparency and accountability.

Photo Credit : istockphoto.com

## E. Conclusion

In summarizing the Just Energy Transition Partnership's (JETP) Comprehensive Investment and Policy Plan (CIPP), the financial landscape emerges as a critical domain marked by significant opportunities and challenges. While considered to be the biggest energy transition funding, CIPP confronts substantial financial risks and complexities that necessitate comprehensive strategies and innovative solutions.

The CIPP's financial blueprint relies on loans, especially non-concessional loans, raising concerns about future fiscal capacities and debt sustainability. The inherent risk in this approach underscores the need for diverse funding streams and reduces dependence on such loans. Mitigating these financial vulnerabilities requires recalibrating funding mechanisms, emphasizing grants, and exploring alternative financing models to cushion potential debt burdens.

Amidst financial intricacies, corruption risks loom, posing a substantial threat to the success of the JETP initiative. Transparency International's report on Indonesia's declining Corruption Perception Index (CPI) signals pressing concern. The potential for corruption in JETP's plans for early coal-fired power plant retirements has been highlighted, demanding robust anti-corruption measures and stringent oversight mechanisms.

Privatization within the JETP scheme introduces complexities, necessitating prudent approaches to mitigate associated risks. Historical experiences, such as IPP projects under previous regimes, offer pertinent insights into the pitfalls of inadequate transparency and accountability. To counter these risks, ensuring transparent practices, robust regulatory oversight, and stakeholder engagement is imperative.

Offering potential solutions and innovative financial strategies, such as debt swaps or debt cancellations, has emerged as a feasible option to alleviate Indonesia's financial burdens. These approaches could ease the debt load accrued through non-concessional loans, enhance the country's fiscal resilience, and enable a more sustainable energy transition. In addition, prioritizing systematic transparency across all JETP initiatives is crucial. Enhancing transparency from the planning stage through implementation and incorporating stakeholder consultations and public participation can foster accountability and curb corruption risks.

In accordance, the success of JETP's ambitious plans hinges on adept financial strategies, diligent anti-corruption measures, cautious approaches to privatization, and an unwavering commitment to systemic transparency. Balancing financial prudence with innovative solutions and fostering a culture of accountability and openness will be pivotal in steering Indonesia towards a just and sustainable energy transition.

Photo Credit : AEER

# References


Andres, L., Foster, V. and Guasch, J.L. (2006) *The Impact of Privatization on the Performance of the Infrastructure Sector: The Case of Electricity Distribution in Latin American Countries*. Available at: https://openknowledge.worldbank.org/entities/publication/a027c55c-860f-586b-af65-8e63d74fab31.

Borghi, E., Del bo, C. and Florio, M. (2016) 'Institutions and Firms' Productivity: Evidence from Electricity Distribution in the EU', *Oxford Bulletin of Economics and Statistics*, 78(2), pp. 170–196. Available at: https://www.scopus.com/record/display.uri?eid=2-s2.0-84959347221&origin=inward&txGid=dc959eb900153365ea96bec0cdb6bf5d.

Bosshard, P. (2022) *Private Gain – Public Risk? The International Experience with Power Purchase Agreements of Private Power Projects*.

Cassimon, D., Prowse, M. and Essers, D. (2010) 'The pitfalls and potential of debt-for-nature swaps: A US-Indonesian case study', *Global Environmental Change*, 21, pp. 93–102. Available at: https://doi.org/10.1016/j.gloenvcha.2010.10.001.

Climate Nexus (2023) *Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)*. Available at: https://climatenexus.org/climate-change-news/common-but-differentiated-responsibilities-and-respective-capabilities-cbdr-rc/#:~:text=Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC),countries in addressing climate change. (Accessed: 16 November 2023).

Denniss, Richard. (2022). *Privatisation has failed. Australia needs to ditch the 'incentives' rhetoric and simply spend money on things we need.* The Guardian. Available at: https://www.theguardian.com/commentisfree/2022/nov/25/privatisation-has-failed-australia-needs-to-ditch-the-incentives-rhetoric-and-simply-spend-money-on-things-we-need

Fanning, A.L. and Hickel, J. (2023) 'Compensation for atmospheric appropriation', *Nature Sustainability*, 6(September). Available at: https://doi.org/10.1038/s41893-023-01130-8.

Global Energy Monitor (2023) *Global Coal Plant Tracker*. Available at: https://globalenergymonitor.org/projects/global-coal-plant-tracker/.

Gultom, Y.M.L. (2021) 'When extractive political institutions affect public-private partnerships: Empirical evidence from Indonesia's independent power producers under two political regimes', *Energy Policy*, 149, p. 112042. Available at: https://doi.org/10.1016/J.ENPOL.2020.112042.

Hakam, D.F. (2019) 'Mitigating the risk of market power abuse in electricity sector restructuring: Evidence from Indonesia', *Utilities Policy*, 56(September 2018), pp. 181–191. Available at: https://doi.org/10.1016/j.jup.2019.01.004.

International Energy Agency (2022) *An Energy Sector Roadmap to Net Zero Emissions in Indonesia*, *An Energy Sector Roadmap to Net Zero Emissions in Indonesia*. Available at: https://doi.org/10.1787/4a9e9439-en.

KPMG and Bank, A.D. (2023) *Captive Power Landscape Assessment for the Energy Transition in Indonesia*.

Just Energy Transition Partnership (JETP) Secretariat and Working Groups (2023) *Just Energy Transition Partnership Indonesia: Comprehensive Investment and Policy Plan 2023*.

Ministry of Energy and Mineral Resources (2023) *Laporan Kinerja Kementerian Energi dan Sumber Daya Mineral 2022*.

Nastitie, D.P. (2023) *TII Assesses PLTU Early Retirement as Potentially Corrupt*, *CORRUPTION PREVENTION*. Available at: https://www.kompas.id/baca/english/2023/10/31/en-transparency-international-menilai-pensiun-dini-pltu-punya-potensi-korupsi.

Perusahaan Listrik Negara (2021) *Rencana Usaha Penyediaan Tenaga Listrik (RUPTL) PT PLN (Persero) 2021-2030*, *Rencana Usaha Penyediaan Tenaga Listrik 2021-2030*.

UNFCCC (1992) *United Nations Framework Convention on Climate Change Treaty - 1992*. Available at: https://unfccc.int/resource/docs/convkp/conveng.pdf.

Wells, L.T. (2007) 'PRIVATE POWER IN INDONESIA', *Bulletin of Indonesian Economic Studies*, 43(3), pp. 341–364. Available at: https://doi.org/10.1080/00074910701727605.

World Bank (2023) *World Bank Open Data*. Available at: https://data.worldbank.org/ (Accessed: 16 November 2023).

Wu, X. and Sulistiyanto, P. (2006) *Independent Power Producer (IPP) Debacle in Indonesia and the Philippines: Path Dependence and Spillover Effects*. Available at: https://www.researchgate.net/profile/Xun-Wu/publication/237433103_Independent_Power_Producer_IPP_Debacle_in_Indonesia_and_the_Philippines_Path_Dependence_and_Spillover_Effects/links/5622020d08aea35f2681bf05/Independent-Power-Producer-IPP-Debacle-in-Indone.

This handbook provides a detailed analysis of the financial intricacies within the Just Energy Transition Partnership (JETP) for Indonesia. This study analyzes funding sources, highlighting the prevalence of loans over grants and the impact of non-concessional loans on Indonesia's financial resources. It also discusses the risks and challenges of overreliance on private funding and suggests strategies to navigate these complexities. Additionally, the handbook highlights debt swap initiatives and emphasizes the need for systemic transparency to mitigate corruption risks and foster inclusive decision making. This concise guide offers robust recommendations to enhance financial resilience and transparency within the JETP scheme, benefiting policymakers and stakeholders involved in the energy transition.

ROSA LUXEMBURG STIFTUNG
SOUTHEAST ASIA
MANILA OFFICE

AEER
AKSI EKOLOGI & EMANSIPASI RAKYAT

**AKSI EKOLOGI DAN EMANSIPASI RAKYAT**

Talavera Office Park, 28th floor
Jl. TB Simatupang Kav 22-26,
Jakarta 12430

aeer.or.id
@AEER_INFO
info@aeer.or.id
@AEER_INFO
AEER - AKSI EKOLOGI & EMANSIPASI RAKYAT
AEER - AKSI EKOLOGI & EMANSIPASI RAKYAT