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2 Years of JETP: Progress and the Urgency to Accelerate

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Table of Content

I. Background

The Just Energy Transition Partnership (JETP) is a global initiative designed to support the shift from fossil fuels to renewable energy while ensuring inclusivity and sustainability. Indonesia, as one of the world's largest coal producers and consumers, plays a pivotal role in this program. JETP aligns with Indonesia's commitment to achieving net-zero emissions by 2060 or earlier, as outlined in its Nationally Determined Contributions (NDCs) under the Paris Agreement. Currently, Indonesia's energy mix is heavily reliant on coal, which contributes significantly to greenhouse gas emissions. Despite its abundant renewable energy resources, such as solar, wind, geothermal, and hydropower, the country faces challenges in maximizing their potential due to financial, technical, and policy barriers. The government's target of increasing renewable energy's share to 23% by 2025 underscores the urgency of action.

JETP in Indonesia focuses on three main areas: reducing coal dependency by phasing out older and less efficient coal-fired power plants, accelerating renewable energy deployment through increased investments and infrastructure development, and ensuring a just transition that addresses socio-economic impacts. This includes creating green jobs, reskilling workers, and prioritizing community inclusivity. However, the program faces challenges such as inconsistent policies, financial constraints, technical and infrastructure limitations, and the need to balance national energy goals with the needs of local communities. On the other hand, JETP offers opportunities to leverage international support for funding, technical expertise, and policy reform, as well as empowering local governments and fostering innovation in clean energy technologies. Through these efforts, Indonesia's participation in JETP provides a pathway toward a sustainable and equitable energy future.

II. JETP Update

The journey of the Just Energy Transition Partnership (JETP) in Indonesia has been marked by both progress and challenges. Following the initial high expectations generated by the signing at the G20 summit in late 2022, there was significant criticism in early to mid-2023 due to concerns about the lack of grant funding and the potential for high debt. The launch of the Country Investment Plan Proposal (CIPP) in late 2023 was a notable development, though progress in the first half of 2024 has been slow. By late 2024, the initiative has ultimately fallen behind its targeted milestones. While the government initially set ambitious goals for JETP and its financing plan, a deeper examination reveals significant issues and setbacks. To provide a comprehensive understanding of the situation, we have divided the discussion of JETP updates into five key areas: funding, Investment Focus Area (IFA), relevant studies to the CIPP, development of the Just Transition Framework, and the current projects underway.

II.1 Funding

JETP operates as a blended finance model, combining both public and private funding from International Partners Group (IPG) countries and Glasgow Financial Alliance for Net Zero (GFANZ), respectively. The bulk of the funding, approximately 97%, is composed of loans, including commercial finance, concessional loans, non-concessional loans, equity/investments, and guarantees, while the remaining portion is allocated to grants and technical assistance.

As of September 2024, an **additional USD 1.6 billion** was added to the initial USD 20 billion agreement. However, this sum remains insufficient for Indonesia's energy transition, with the country requiring an estimated USD 97.3 billion to meet its 2030 target—nearly five times the current JETP allocation. Consequently, it is essential to explore additional funding sources or national mechanisms to leverage further investments in the coming years.

As of December 6, 2024, JETP Secretariat informed that **a total of USD 298.2 million** had been approved, with USD 219.8 million allocated to 34 ongoing programs and USD 78.4 million directed towards 6 programs currently under discussion.

II.2 Investment Focus Area

The current JETP program focuses on financing six Investment Focus Areas (IFAs). By June 2024, the final IFA was introduced, which promotes the implementation of **Energy Efficiency and Electrification**. This addition complements the five initial IFAs: Grid Transmission and Expanding Energy Accessibility, Early Retirement of Coal-Fired Power Plants, Accelerating Dispatchable Renewable Energy, Accelerating Variable Renewable Energy, and Development of Renewable Energy Supply Chains.

The purpose of the new IFA is to ensure continued economic growth and prevent setbacks, aligning with the Indonesian government's key goals of promoting sustainable development and downstream industries. Additionally, to support the JETP Secretariat and its programs, a working group focused on Electrification and Energy Efficiency has been established, complementing the existing working groups for Technical, Policy, Financing, and Just Transition.

II.3 Relevant Study to the CIPP

JETP, in collaboration with the Technical Working Group, is conducting a study on **captive power** to enhance data collection and develop plans aimed at reducing reliance on fossil fuel-based generation. The findings from this study will be incorporated into the new Country Investment Plan Proposal (CIPP). Captive power plants are independent producers that generate and consume electricity for their own use. These plants are typically located in industrial parks that require large amounts of energy and need a reliable, continuous power supply. Key industries that utilize captive power include nickel, aluminum, and pulp and paper.

In addition to the captive power study, JETP will also conduct a study on **Energy Efficiency and Electrification** to support the new Investment Focus Area (IFA). This study seeks to identify solutions for improving electricity and energy consumption across various sectors in Indonesia, while simultaneously creating opportunities for financing and technology deployment.

Once the National Electricity Plan (RUKN) is finalized, **technical modeling** will be conducted to assess the feasibility of electricity planning compared to current operations. A **meta-monitoring platform** will also be established

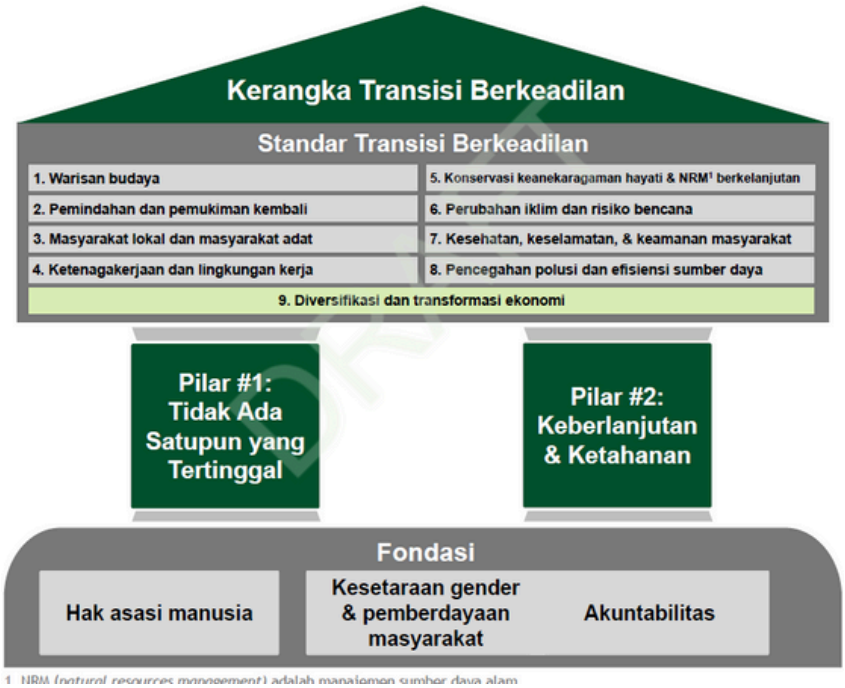
to track project implementation. This technical study will be instrumental in helping financiers, developers, and the government align their priorities and expectations with the new National Electricity Plan.

II.4 Just Transition Framework Development

During the JETP Just Transition FGD on December 3, 2024, JETP Secretariat informed that the definition of just transition will be expanded. The purpose is to reflect more the unique socio-economic and environmental aspects in the energy ecosystem, and focus more on the fair distribution of benefits and risks. Therefore, the new just transition definition includes some of these keywords:

- Sustainable, inclusive, and fair energy sector transformation.
- Public welfare and providing benefits for all parties.
- Creation of opportunities and fair support focused on vulnerable groups.
- Minimizing socio-economic disruptions.
- A Just Energy Transition as a catalyst.

Furthermore, the draft of the new just transition framework amends the 9th standard, which is "economic diversification and transformation." It was viewed as a standard needed on the "sustainability and resilience" pillar, but now it is considered a standard needed on both pillars: the "leave no one behind" and "sustainability and resilience" pillars.



1. NRM (natural resources management) adalah manajemen sumber daya alam

Figure 1. Draft of Just Transition Framework for New CIPP

Source: JETP Secretariat, December 2024

II.5 Current Projects

Negotiations within JETP and its working group have focused on disbursing funds from IPG and GFANZ. To date, approximately 70% of the total USD 300 million in grants has been approved, alongside USD 6.1 billion in loans and equity investments from the overall USD 20 billion commitment. Some of the projects set to be implemented in the near future include the Geothermal Power project in Ijen - Phase 1, and the connection of the Sulbagut grid in the northern part of Sulawesi to the Sulbagsel grid in the southern part, driven by the increasing demand from nickel industries.

Key priority projects based on information from the JETP Secretariat's website include:

1. South Sulawesi Transmission Line of 275 kV
2. Early Retirement of Cirebon-1 CFPP
3. Ijen Geothermal Plant
4. Hululais Geothermal Plant
5. Muara Laboh Geothermal Plant
6. Procurement of Hydro
7. De-dieselization
8. Hijaunesia 1 & 2
9. Sutami / Karangkates Solar Power Plant
10. Tanah Laut Wind Power Plant

However, some of these projects may be subject to change due to potential updates in Indonesian policy, which is expected to be revised by 2025 or later. While there is a pressing need to accelerate the transition to renewable energy, there is also a challenge in encouraging IPG to increase the proportion of grants in the financing mix, to prevent Indonesia from bearing excessive debt burdens in the future.

III. Coal-Fired Power Plant Retirement

Climate change is intensifying, with one of the primary contributors being the greenhouse gas emissions generated by the burning of fossil fuels. A major emitter in this regard is the energy sector, particularly coal-fired power plants (CFPPs). These plants have long been the backbone of Indonesia's power generation, contributing approximately 45% of the country's electricity supply to support both households and industries.

While Indonesia's coal fleet is relatively young, with an average age of just 15 years, there is a growing push for early decommissioning, or what the national government refers to as "early retirement" of these plants. The typical contract for CFPPs is around 30 years, although it can be extended through repurposing, refurbishment, or contract renewal. However, in order to address climate change and reduce emissions from the energy sector, it is essential for these plants to cease operation and construction earlier than the average contract duration, in favor of transitioning towards renewable energy sources.

Figure 2. CFPP Retirement Dialogue
Source: AEER

III.1 The Urgency of CFPP Retirement

Coal-fired power plants in Indonesia should be phased down immediately to address the growing climate crisis. According to the Ministry of Environment and Forestry, the energy sector in Indonesia was responsible for approximately 59% of total national greenhouse gas (GHG) emissions in 2022, with CFPPs contributing significantly to this figure1. As one of the largest sources of GHG emissions, CFPPs are major drivers of climate

[1] Greenhouse Gas (GHG) Inventory Report and Monitoring, Reporting, Verification (MPV) 2023. Ministry of Environment and Forestry.

change. In addition to their global environmental impact, these plants also release toxic gases, which pose serious health risks to local communities and ecosystems.

Another critical reason for the urgent phase-down of CFPPs is their contribution to deforestation, particularly in Kalimantan and Sumatra. The expansion of CFPPs often correlates with an increase in coal mining activities, to meet the demands of these power plants. This mining process elevates GHG emission and creates significant environmental damage by clearing large areas of forests and land that would otherwise play a vital role in carbon sequestration.

Kalimantan, known as one of the world's "lungs," is especially at risk. If current trends continue, this invaluable ecosystem will be threatened, worsening climate change and biodiversity loss. Immediate action is needed to phase out CFPPs and protect these critical forests.

III.2 The Impact of CFPP Retirement on Communities

A. Readiness of Fossil Energy Sector Workers

On December 7, 2024, AEER hosted a Public Discussion on the Readiness of Workers in Fossil Fuel Sectors, involving local workers from various sectors, particularly those from State Electricity Company (*PLN*), which operates a power plant in Palembang, South Sumatra. A key concern raised was that many workers in CFPPs are unprepared for the energy transition. This lack of readiness stems from insufficient reskilling and upskilling programs tailored to jobs in the renewable energy sector. The workers also advocated for the alignment of their rights with existing regulations, particularly in relation to wages and occupational health and safety.

Figure 3. Publication of Just Transition for Fossil Energy Workers

The energy transition offers significant opportunities for green jobs, including positions such as solar panel technicians and wind energy specialists. However, the challenge lies in providing accessible, market-aligned vocational training to prepare workers for these new roles. Collaboration between the government, labor unions, and non-governmental organizations (NGOs) is crucial for designing effective training programs and offering social protection for workers who may lose their jobs during the transition.

The independence of NGOs is crucial in ensuring that policy-making serves the broader public interest, addressing not just the needs of select stakeholders but also the social and economic welfare of workers. The next steps should focus on identifying challenges and solutions to advance the energy transition in a manner that supports both workers and the overall goals of sustainability.

The discussion also underscored the need for localized planning, as jobs in fossil fuel-based energy are often located in regions that may not align with renewable energy opportunities. For example, transition process from CFPPs in coastal areas to geothermal energy facilities in mountainous regions could present both technical and social challenges for workers, supply chain employees, and local communities. To minimize the social and economic impacts of this shift, local economic diversification and integrated planning are essential.

Finally, the importance of collaboration between the government, labor unions, and companies was highlighted as a key element for ensuring a fair energy transition. The meaningful participation of unions in policy-making is essential, as they are vital stakeholders in advocating for workers' rights and needs to ensure that the transition is both just and effective. Strengthening policies such as carbon taxes, renewable energy subsidies, and incentives for green job creation is essential. Additionally, maintaining industrial activity in the energy sector is critical to supporting workers and communities that rely on these industries.

In summary, ensuring the readiness of workers in the fossil energy sector requires robust support through effective policies, targeted training, and social protection measures. Collaboration among key stakeholders is crucial to ensure that the energy transition not only fosters environmental

B. Local Public Health

A case in point is the Suralaya Power Plant in Cilegon, Banten, where the health of the surrounding community is severely affected by the operation of the CFPP, compounded by the presence of numerous industries in the area. As a result, there are approximately 34,000 cases of Acute Respiratory Infections, particularly among toddlers, as well as a notable prevalence of tuberculosis. Wind patterns play a significant role in the dispersion of gases and pollutants, which impact neighboring major cities, including Lampung, Tangerang, and Jakarta, as highlighted by CREA research (2023).

II.3 Commitment and National Plans Related to CFPP Retirement

A. Prabowo Statement on G20 Leaders Summit 2024

Mr. Prabowo Subianto, the newly elected president of Indonesia for the 2024-2029 term, announced that Indonesia plans to close all fossil fuel power plants by 2040.

"Indonesia is rich in geothermal resources, and we plan to phase out coal-fired and all fossil-fueled power plants within the next 15 years. Our plan includes building over 75 gigawatts of renewable energy capacity during this period,"

Prabowo stated at the G20 Summit in Brazil. This announcement signals a positive step towards reducing emissions from the power sector.

However, Hashim, the Head of the Indonesian Envoy at COP29 in Azerbaijan, clarified that the goal is not the complete retirement of all coal power plants but rather a focus on prioritizing renewable energy and energy transition, including the use of Liquefied Natural Gas (LNG). The Deputy Chairman of the Advisory Board of the Gerindra Party further emphasized that the government's approach is to phase down or gradually reduce coal power plants, rather than completely decommissioning them. Despite this, it remains crucial to accelerate the phase-out of fossil fuel power plants—whether coal, gas, or oil—in order to achieve Net Zero Emissions (NZE) by 2060.

B. General National Electricity Plan (*RUKN*)

The National Electricity General Plan (*Rencana Umum Ketenagalistrikan Nasional* or RUKN) is a strategic document that outlines the development of Indonesia's electricity supply system, covering the generation, transmission, and distribution sectors to meet the nation's electricity needs. The RUKN also serves as a reference for preparing RUKD documents and electricity supply business plans.

The latest update of the RUKN, published on December 20, 2024, will be effective until 2060, replacing the previous plan. However, this updated version does not include a specific retirement plan for CFPP. This omission poses a challenge for the short-term achievement of CFPP retirement, as it lacks a clear regulation framework to drive the transition.

C. CFPP Retirement Roadmap

The Ministry of Energy and Mineral Resources (MEMR) announced in August 2024 that a Roadmap for the Early Retirement of CFPP would be developed by September 2024. However, by December 2024, no retirement plans had been made public, reflecting a slow implementation and limited commitment to the NZE scenario. Additionally, MEMR had promised to retire 13 coal-fired power plant units, totaling approximately 4.8 GW, which were identified as "low-hanging fruit."

This raises an important question that the government must address in the coming year: "When will the Coal-Fired Power Plant Retirement Plan be publicly announced and incorporated into government regulations?" The government should have thought about that with regulating RUKN and use it as a base for CFPP Retirement Roadmap.

II.4 Stakeholders in CFPP Retirement within JETP

A. Cirebon-1 CFPP (Independent Power Producer)

The Cirebon-1 Coal Power Plant (660 MW) is the first Independent Power Producer (IPP) scheduled for early retirement, set to close 7 years ahead of its contract term in 2035, instead of the original 2042. This project is expected to set a precedent for the early retirement of private CFPPs in the future.

The Asian Development Bank (ADB) has supported this initiative through a non-concessional loan of $250 million and a concessional loan of $50 million from the Climate Investment Fund to manage the phase-out of coal.

A term sheet has been agreed upon between ADB and PT Cirebon Electric Power, and government discussions are in progress to facilitate a Power Purchase Agreement (PPA) amendment. However, because the early retirement roadmap, which should have been issued by the government, is not yet available, the transaction process that was close to completion has stalled.[1]

B. Pelabuhan Ratu CFPP (PLN)

The Pelabuhan Ratu Coal Power Plant (1050 MW) is a key electricity producer in the southern part of Western Java. As of December 2024, the unit is 100% owned by PLN. Unlike Cirebon-1, this unit is still under negotiation between PLN, PT. Sarana Multi Infrastruktur (PT. SMI)[3], and ADB. The project has faced a setback due to PT. Bukit Asam (PTBA)'s previous announcement that it would acquire the Pelabuhan Ratu CFPP and retire it under PTBA's terms. However, there has been no positive progress in negotiations or agreements between these two state-owned enterprises. It is expected that, once the Cirebon-1 retirement plan and funding from ETM (ADB) via PT. SMI are finalized, attention will shift towards the Pelabuhan Ratu CFPP.

II.5 Financing Scheme for CFPPs Excluded in the CIPP

The AEER Public Discussion in Banten also addressed the urgent need for the retirement of the Suralaya Power Plant, particularly its first four units (Units 1-4), which have been operational since 1984-1988. These units are among the oldest coal-fired power plants in Indonesia, second only to the Ombilin CFPP in West Sumatra. The plant has had a significant and dangerous impact on the surrounding environment, affecting over 30 million people in the densely populated Jakarta metropolitan area (Jabodetabek). With more than 40 years of operation, Suralaya produces around 10 million tons of CO2eq per year[2]and contributes to severe health problems in the region. The need to shut down these units is clear, but it must be accompanied by a well-structured, equitable, and sustainable plan for renewable energy generation to ensure energy stability during ongoing economic growth.

[1] https://ekonomi.bisnis.com/read/20241003/44/1804364/akuisisi-pltu-pelabuhan-ratu-tak-kunjung-deal-ini-kata-bos-ptba

[2] Analyzed from Global Energy Monitor (November 2023)

[3] A state-owned enterprise that acts as a financing institution focused on infrastructure development

Figure 4. AEER's Policy Brief on Suralaya CFPP Retirement

It is crucial to shut down the coal-fired Suralaya Units 1-4 power plants in Cilegon as soon as possible to prevent further health and environmental damage to local communities. The transition to renewable energy must be accelerated to replace these aging, inefficient, and harmful coal power plants with cleaner, sustainable alternatives. According to the Information and Investment Service for New, Renewable Energy and Energy Conservation (*Lintas EBTKE*) website, created by the Ministry of Energy and Mineral Resources (MEMR), the potential for renewable energy in Banten Province is approximately 4.93 GW. This includes contributions from mini-hydro and micro-hydro energy (72 MW), solar energy (2.46 GW), wind energy (1.75 GW), and geothermal energy (651 MW).

This energy transition should be guided by a commitment to ensuring justice at every stage, addressing social, economic, and environmental impacts. Meaningful participation of local communities is essential, particularly in the decommissioning of the coal-fired power plants and the development of new energy projects. Involvement during the construction phase is crucial to ensure that the needs and concerns of affected populations are heard and addressed. This approach will promote transparency and foster a sense of ownership, helping to ensure a just, equitable, and sustainable energy future.

To support this transition, securing financing is essential, along with investing in the reskilling and upskilling of the local workforce. JETP with its substantial budget, presents a viable option to assist in the retirement of the Suralaya power plants and support Indonesia's path towards achieving Net Zero Emissions. Additionally, JETP can help balance the development of newly constructed or ongoing coal-fired power plants, ensuring that the transition to renewable energy is both environmentally and socially responsible.

IV. New and Renewable Energy Development

One of the key goals of the JETP is to increase the share of renewable energy in Indonesia's energy mix to 34% by 2030, while also aiming to reduce carbon emissions by up to 290 million tons of CO2 from the energy sector. To achieve these ambitious targets, it is important to thoroughly understand the current state of renewable energy in the country, as well as the associated advantages and disadvantages. This understanding will help inform policies and strategies that can maximize the benefits of renewable energy while addressing any challenges that may arise during the transition.

IV.1 State of Renewable Energy Supply and Demand in Indonesia

The utilization of renewable energy (RE) in Indonesia remains relatively low, accounting for only around 13.9% of the energy mix and a mere 0.3% of the total potential power capacity. The majority of power generation is still concentrated in Java, with a smaller portion in Sumatra and Sulawesi. Indonesia has an estimated 6,000 GW of renewable energy potential, with solar energy dominating at approximately 3,000 GW. While the potential for RE supply is significant and can be rapidly accelerated, progress is currently hindered by policy limitations, electricity pricing concerns, and national development goals.

There are existing policies to increase the renewable energy mix, such as the National Energy Policy, which aims for 23% renewable energy by 2025. However, this target may not be achievable within the short time frame, as there is less than a year left to meet the goal, and Indonesia is currently falling short by around 10%. Additionally, there is concern that the transition to renewable energy could lead to higher electricity prices. While this is a possibility, the more immediate concern is that the continued reliance on fossil fuels will prevent RE prices from becoming competitive. To address this, strong commitments and tangible implementation of policies are essential.

Another factor to consider is Indonesia's national economic growth target of 8%

per year, which will require significant increases in electricity demand. This is estimated to be around 6-8% annually, driving the need for substantial growth in energy consumption capacity. In 2023, Indonesia's energy consumption per capita was approximately 1,300 kWh, with an optimistic target of 5,375 kWh per capita by 2045. The current government estimates that energy consumption per capita will need to reach at least 2,600 kWh to meet this goal, which implies that consumption will nearly double by the end of the current government's term, potentially reaching around 2,400 kWh per capita.

Given this projected increase in energy demand, it is evident that many new power plants will need to be built or planned. To avoid future challenges such as GHG and early retirements of inefficient plants, these new power plants must prioritize renewable energy. This will ensure Indonesia's progress toward a cleaner, more sustainable energy future.

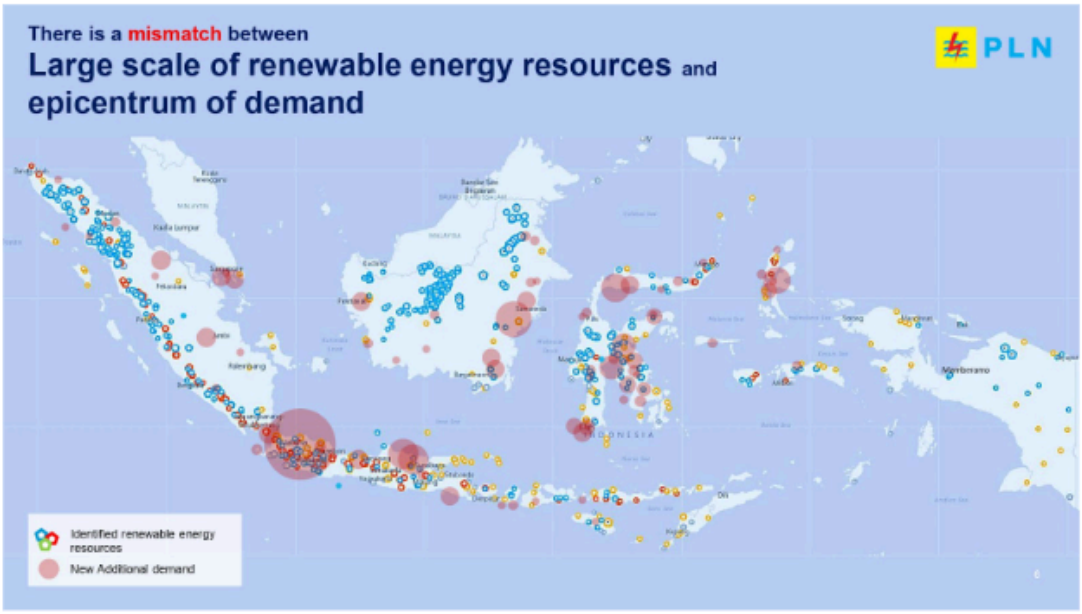


Figure 5. Difference of Supply of Resources and Energy Demand in Indonesia
Source : Prasodjo, 2024

As illustrated above, there is a notable discrepancy between the locations of renewable energy sources and electricity usage in Indonesia. High electricity consumption is concentrated in areas such as the Greater Jakarta Area, which is driven by population density and industrial activities; Sulawesi and North Maluku, where nickel industries are prominent; and East Kalimantan, where palm oil and bauxite factories are concentrated. Consequently, PLN must prioritize expanding and connecting the electricity grid between renewable energy sources and high-demand areas. This would help alleviate the burden on base-load power plants while enabling a ramp-up in renewable energy use, preventing oversupply issues and reducing reliance on fossil-fuel power plants.

Case studies shared by Mr. Paul, Head of the JETP Secretariat, highlighted that private sector companies are willing to adopt RE but face technical challenges, particularly related to the grid connection between renewable energy sources and industrial areas, as well as power system reliability. However, from the perspective of the private sector, investment costs and potential delays in production due to unreliable power supply are major concerns.

At the same time, businesses are aware of external factors that could impact their competitiveness and profitability. Policies such as the Carbon Border Adjustment Mechanism (CBAM) and carbon pricing measures from developed countries could negatively affect their revenue due to the required carbon reductions. Industries may struggle to compete with companies from developed countries that have more advanced technologies and greater renewable energy utilization. This puts additional pressure on Indonesian businesses to adapt to global environmental standards while addressing the domestic challenges of transitioning to cleaner energy.

Regarding the demand side of renewable energy (RE) for households, a policy amendment on solar PV rooftop systems[4], effective from January 31, 2024, has altered the dynamics of solar demand. The amendment shifted from a capacity limitation to a quota system, proposed by both PLN and non-PLN electricity suppliers for 5 years plan. Additionally, the new policy reduced the ability for households to export and import electricity with PLN, which previously helped lower household electricity bills. As a result, this change reduces the financial incentives for households to adopt solar PV rooftop systems.

In November 2024, the Indonesian Solar Energy Association (AESI) reported that the majority of solar power system (PLTS) customers are from the industrial sector, making up 90%, while households represent just 10%. Nonetheless, PLN has noted a consistent annual increase in the number of customers. In 2023, the customer count was 8,491, and by October 2024, the number of PLTS customers had risen to 9,632.[5]

IV.2 Renewable Energy Programs within JETP

The renewable energy (RE) programs within the Just Energy Transition Partnership (JETP) encompass both utility-scale energy generation and community-based energy solutions. Each type of generation has its own set of challenges and opportunities that need to be addressed in future developments. Utility-scale energy generation offers a significantly larger energy capacity compared to community-based systems. However, its development process often comes with higher potential for conflicts, particularly related to social

[4] The Minister of Energy and Mineral Resources Regulation Number 2 of 2024 replaces the MEMR Regulation Number 26 of 2021 concerning Rooftop Solar Power Plants.

[5] https://atw-solar.id/jumlah-pelanggan-plts-pada-2018-oktober-2024-naik-16-kali-lipat/

and environmental issues, especially when stakeholder engagement is lacking.

For instance, the development of renewable energy plants prioritized in the JETP is facing social and environmental challenges. During AEER's Forum Group Discussion on JETP implementation in Banten, local community members emphasized the need for equitable resource management practices that prioritize community rights and environmental sustainability in the transition from coal power to renewable energy. Specifically, residents of Padarincang, where a geothermal plant is being developed, expressed concerns about water scarcity affecting farmers and local communities, as well as the potential displacement of wildlife due to geothermal exploration. Similarly, the development of a floating solar power plant in Singkarak Lake (West Sumatra) has raised concerns[6] about potential threats to ecosystem sustainability, which could negatively impact local livelihoods and living spaces.

However, the utility-scale generation is important to provide base load energy to the on-grid to continuously operate with relatively stable and constant output. A minimal socialization, incomplete communication, and a lack of transparency can cause the resistance from the communities. Project developers within the JETP are required to provide information and implement Free, Prior, and Informed Consent (FPIC) with the local communities to ensure justice in the energy transition.

On the other hand, community-based energy may generate smaller capacity than utility-scale projects. However, being a bottom-up approach, its development faces less resistance from local communities and fosters a "sense of belonging," which encourages responsibility for maintenance and innovation. Additionally, this system can alleviate pressure on the energy supply chain while improving health, economic, and environmental conditions for all segments of society in Indonesia. Importantly, community-based energy can provide electricity access to rural areas, helping achieve the "no one left behind" pillar in the JETP framework.

IV.3 Constraints of Renewable Energy Development

Technically, relying solely on JETP for the development and integration of renewable energy (RE) makes it challenging to deploy RE plants. Several reasons contribute to this difficulty:

6 https://www.mongabay.co.id/2025/01/01/plts-di-danau-singkarak-sosialisasi-minim-dan-tak-transparan/

1. The potential sources of RE are spread across Indonesia, presenting potential challenges for construction and integration into the existing transmission infrastructure. This geographic spread may lead to conflicts with local communities due to concerns about deforestation, environmental and biodiversity impacts, and disputes among residents. Large-scale deployment of solar PV could result in land use changes and deforestation, while wind energy projects may pose a threat to migratory birds. In some cases, communities near these large energy sources might still lack access to electricity. Additionally, integrating RE into the existing grid requires substantial investment and technical considerations to ensure grid stability.
2. The majority of fossil fuel power plants in Indonesia are relatively new, meaning their power purchase agreements (PPAs) are still ongoing and have a long duration. This makes decommissioning these plants a costly endeavor, requiring substantial funds and investment. Additionally, the transition of workers from fossil fuel-based industries, such as coal mines and power plants, to renewable energy sectors will require significant effort, resources, and time.
3. Renewable energy sources face greater stability challenges compared to fossil power plants. Variable power plants, such as those included in JETP like solar and wind, depend on weather conditions (e.g., sun irradiation and wind patterns), which can impact the consistency of electricity supply. Similarly, hydropower plants are also weather-dependent, as their ability to generate power relies on water availability, which can be influenced by climate conditions.

Figure 6. Suralaya Power Plant
Source : hutamakarya.com, 2020

To address the challenges in deploying renewable energy (RE), a more flexible yet stable system is needed to prevent electricity disruptions. T**echnical standards and technology information** must be researched and implemented swiftly to ensure smooth integration of RE into the existing grid.

Currently, the **policy framework** for renewables in Indonesia is still under discussion. While there are recommendations, calculations, and reports aimed at accelerating RE adoption, regulatory targets have already passed, leaving civil organizations and the JETP Secretariat waiting for updated regulations. Additionally, the rapid expansion of fossil power plants has created energy oversupply, complicating the procurement of RE and raising capital expenditures. This situation has yet to be safeguarded adequately for both JETP and the companies involved.

A key concern is the justice aspect of renewable energy development. The rapid growth of RE projects and supporting systems can have adverse impacts on local and indigenous communities. People could lose their land, jobs, and rights due to the JETP program if justice frameworks and safeguard policies are not enacted. The ongoing development of the Just Transition framework must be translated into meaningful policy and regulation to prevent conflicts and ensure fair treatment for affected communities.

Economically, fossil fuels continue to outperform renewable energy in terms of **policy support and cost**. The abundance of coal, its central role in domestic

Figure 7. ICE Newcastle Coal Price Movements
Source : https://tradingeconomics.com/commodity/coal

and export markets, and the Domestic Market Obligation (DMO), which caps the coal price at $70 USD per ton, make coal more affordable than RE for now. Furthermore, the initial cost of deploying renewables could increase electricity prices. However, as coal prices have declined significantly, driven by growing renewable energy usage and international climate pressures, the cost competitiveness of RE is improving globally.

Despite the slow uptake of renewables due to these challenges, falling coal prices indicate a potential shift. However, large-scale RE development still requires significant investment due to complex factors such as grid integration, land acquisition, workforce reskilling, compensation for local communities, and procurement processes.

IV.4 Energy Trilemma

The Just Energy Transition Partnership through its CIPP, has embraced the Energy Trilemma as a guiding framework for Indonesia's energy transition. This concept consists of three key dimensions: Energy Equity, Energy Security, and Environmental Sustainability. As a developing country, Indonesia faces numerous significant challenges. It has set ambitious goals to elevate its economy and achieve the vision of "Golden Indonesia" by 2045, while also balancing ecological sustainability with economic growth.

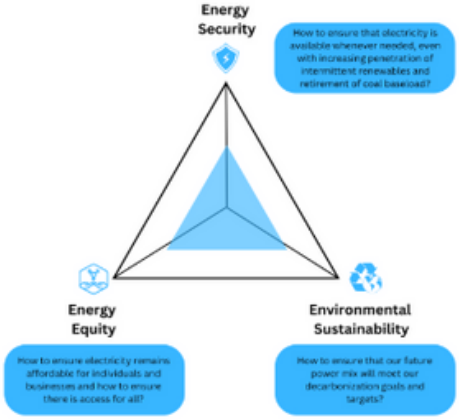


Figure 8. Energy Trilemma Concept

The **energy equity** dimension addresses the ability of the national energy system to provide universal access to affordable and sufficient energy for both domestic and commercial use. **Energy security**, on the other hand, pertains to the system's capability to reliably meet both current and future energy demands, as well as to withstand and quickly recover from system shocks with minimal disruption to supplies. Additionally, **environmental sustainability** involves transitioning the country's energy system to mitigate and avoid potential environmental harm, along with the impacts of climate change.

V. JETP Implementation Governance

V.1 Local Governments Role in JETP

The Just Energy Transition Partnership (JETP) program do not include local governments in its planning and working groups. Nearly all JETP working groups consist of national ministries, civil society organizations (CSOs), and international partners. During a seminar and Focus Group Discussion held by AEER in Serang, Banten, in September 2024, it was revealed that even the Department of Energy and Mineral Resources (DEMR) of Banten Province was unaware of key details about JETP, such as its funding mechanisms, projects, and overall objectives. This lack of awareness is concerning, as the JETP Secretariat is based in the MEMR building in Jakarta. This situation highlights the communication gap within the government and among local residents, many of whom are unfamiliar with climate change and its impacts.

The challenges of energy transition in the local include the policies and authorities. Indonesian Center for Environmental Law (ICEL) shared its analysis that in the policy derivatives, Regional Energy General Plan (*RUED*) and National Electricity Master Plan (*RUKN*) are not integrated with the Regional Medium-Term Development Plan (*RPJMD*). Also, local government has limited authorities in power plants since the energy and mineral resources sector is under the authority of selected government in the national level. Thus, local government has a limited fund to develop a pilot project as well.

Figure 9. AEER Public Discussion on JETP Implementation in Local Region

However, from the discussion, local government participation is crucial for ensuring the smooth implementation of JETP programs. Local authorities typically have better insights into the conditions of their communities, environments, and the challenges they face.

V.2 The Potential for Strengthening the Role of Local Governments in JETP

A key recommendation for local governments is to play a more prominent role in the implementation of JETP or other energy transition initiatives and their related aspects. Ministries alone cannot manage the vast changes required to transform society toward a greener future, especially when dealing with national challenges such as poverty. A more decentralized approach, such as establishing working groups at the local (provincial) level, is necessary. These local groups could help accelerate renewable energy development while ensuring that social justice is incorporated, making the transition smoother and reducing potential conflicts among residents. This approach would also help mitigate environmental, social, and health risks.

Local governments can contribute to the energy transition in various ways. For instance, they can focus on educating workers and communities that may be impacted by renewable energy development and the connection of grid transmission. Reskilling and upskilling programs for fossil fuel workers, particularly those in coal-fired power plants, should also be prioritized due to potential job losses. Additionally, establishing working groups at the provincial or even regency/city level that focus on climate change would greatly enhance efforts to address local challenges in energy transition and facilitate a more inclusive and effective process.

ICEL has analyzed that to increase local government role in energy transition, it should be supported with several steps as follows:

1. Revision on provincial Regional Energy General Plan (*RUED*) to integrate the RE development with social-environmental impact.
2. Integrate provincial RUED with Regional Medium-Term Development Plan (*RPJMD*).
3. Allocate Shared Revenue Fund (*DBH*) of natural resource to fund the RE projects and cooperation between public-private sectors.
4. Propose RE funding through special fund allocation.

VI. JETP Inclusivity Implementation

VI.1 Meaningful Participation

JETP as one of the energy programs has a mechanism of gathering inputs from CSOs, communities, corporate, and countries perspectives. But as far as it is, participation is not meaningful enough. One example is most of the workers didn't know about climate change or even energy transition. So, dissemination and information spread is urgently needed to ensure a meaningful participation in JETP. Not to mention the local communities, indigenous people, and people in general that didn't know about the urgency of this topic.

VI.2 Transparency

Transparency should be one of the keys in JETP implementation. Good Corporate Governance (GCG) is needed to increase transparency and efficiency in the procurement of goods and services for electricity infrastructure development. This should be taken to accountability through engagement and public consultation with stakeholders with transparent data and information. So, not only the JETP Working Group that can monitor the progress, but people and communities around it can see how far and how real the energy transition via JETP can be done.

JETP secretariat had several public discussions and public hearings about JETP study, the latest is about Just Transition Framework dissemination. They invited CSO and think-thank all across Indonesia for the event to show their transparency.

VI.3 Gender Equality, Disability, and Social Inclusion

Gender in the context of the Just Energy Transition Partnership (JETP) in Indonesia is an important issue because energy transitions often fail to integrate entities that have different impacts on women and persons with disabilities. The agenda for a Just Energy Transition, in addition to assessing impacts, also needs to consider the roles and initiatives of grassroots women in energy transition efforts, including various adaptation measures undertaken by communities, such as the use of biogas for household energy needs and micro-hydro energy, which should receive greater emphasis in the just energy transition agenda.

Figure 10. AEER Participation in GEDSI Discussion Hosted by UNDP

Unfortunately, over the past year, JETP has remained a topic primarily discussed among global and national elites, with a focus still largely on investments. It has yet to truly target women and other vulnerable groups. However, at the national level, civil society organizations have begun to engage more actively with this issue. For instance, Publish What You Pay (PWYP) Indonesia is actively working to mainstream Gender Equality, Disability, and Social Inclusion (GEDSI) within the context of a just energy transition in ASEAN. The Indonesia Research Institute for Decarbonization (IRID) is analyzing the role of civil society groups in promoting a just energy transition in East Nusa Tenggara Province, focusing on gender equality and social inclusion. Similarly, Solidaritas Perempuan is advocating for justice principles, including gender justice, in the development of renewable energy.

VI.4 Four Justice: Distributive, Procedural, Restoratice, and Retributive

a. Distributive Justice

Equitably distribute the benefits and burdens of energy infrastructure and systems. This ensures the economic benefits of energy transitions are shared broadly. In other words, distributional justice is a framework in which the same benefits and justice must be applied to all communities equally, without exception.

The context of distributional justice lies in addressing how benefits, burdens, risks, and responsibilities are distributed among different communities and individuals, particularly in the realms of environmental, climate, and energy justice. Traditional approaches have examined proximity to environmental hazards, revealing that marginalized and vulnerable groups often bear disproportionate burdens. However, contemporary distributional justice expands beyond proximity to include frameworks such as capabilities (freedom and well-being), vulnerability (exposure to harm or lack of resources), and recognition (acknowledging marginalized groups). In climate justice, this is evident in the "double inequality," where the Global North bears more responsibility for climate change but the Global South suffers its most severe impacts. Similarly, energy justice highlights unequal access to energy resources and affordability issues, leading to energy poverty and vulnerabilities. Thus, distributional justice contextualizes these disparities by focusing on equitable allocation of benefits and burdens in transitions to sustainable systems.

b. Procedural Justice

Fairly and competently incorporate marginalized perspectives and communities in decision-making processes. which emphasizes the importance of accountability and the inclusion of all stakeholders in decision making processes.

Figure 11. AEER Public Discussion on Just Transition for Fossil Fuel Energy Workers

The transition away from fossil fuels has highlighted the importance of procedural justice, particularly in fostering meaningful community engagement during the siting of new infrastructure. Traditional approaches to procedural justice have focused on addressing injustices where harmful infrastructures disproportionately affect socially marginalized or ethnically diverse communities. Effective engagement processes, while not always sufficient alone, can resolve potential conflicts when designed thoughtfully, as seen in studies where local identity and long-term participation are central to procedural approaches. This framework emphasizes not just resolving disputes but fostering inclusive and locally responsive practices that ensure fairness in decision-making.

Recent developments in procedural justice extend its scope across climate and energy justice contexts. These include a focus on resilience and adaptation, enabling communities to respond constructively to climate shocks through capacity building and knowledge sharing. The framework has also shifted from industrial-scale projects to include household-level practices, emphasizing the role of behavior change and self-initiated engagement in a post-carbon society. Additionally, procedural justice now supports proactive community involvement in renewable energy development, fostering acceptance of infrastructure through participatory processes. Community-led schemes have shown potential for long-term success, illustrating the growing significance of inclusive practices in accelerating renewable energy transitions while ensuring equity and justice.

c. Restorative Justice

Repair past and ongoing harms caused by energy systems and decisions. which seeks to address the historical and ongoing harms caused by environmental degradation.

The concept of just transition emerged in the 1980s within trade union movements, emphasizing the restorative dimension in addressing job losses due to the shift away from fossil fuels. This approach initially focused on restoring jobs lost during industrial shutdowns or relocations and required guarantees for reemployment to support cleaner technologies. However, restorative justice extends beyond employment restoration, encompassing broader efforts to repair the harm caused by environmental degradation, social disenfranchisement, and climate injustices. While procedural justice partially includes restorative elements through meaningful engagement and rebuilding trust, a more explicit focus on comprehensive restoration is necessary to achieve transformative outcomes.

Restorative justice, rooted in legal frameworks, emphasizes repairing harm to individuals or communities rather than solely punishing offenders. In the context of transitioning from fossil fuels, this involves addressing historical and ongoing environmental damages, corporate accountability, and the unforeseen harms of decarbonization processes. Environmental justice has primarily concentrated on restoring areas impacted by industrial activities, linking social and environmental remediation. Climate justice highlights global and historical dimensions, advocating corrective measures like climate adaptation funding and enforcing the polluter pays principle. Energy justice builds on this by incorporating restorative principles into energy development, suggesting legal enforcement through environmental impact assessments and social licenses to operate. Integrating restorative justice into the just transition offers an opportunity to unify climate, energy, and environmental justice frameworks for a holistic approach to addressing historical, current, and future injustices.

d. Retributive Justice

Retributive justice focuses on holding parties accountable for past wrongdoings through punitive measures, emphasizing deterrence and moral accountability rather than remediation or restoration.

In the context of a just transition away from fossil fuels, retributive justice would entail imposing consequences on those responsible for environmental degradation, climate injustices, and social harms caused by extractive and polluting industries. This might involve penalizing corporations for violations of environmental laws, enforcing strict liabilities for damages caused by industrial activities, or demanding reparations from nations or entities disproportionately contributing to global emissions.

While environmental justice has predominantly pursued restorative approaches, retributive justice plays a complementary role by seeking to deter future violations and uphold principles of accountability. In climate justice, this might include sanctioning countries or corporations for failing to meet emissions targets or violating international agreements. Energy justice can apply retributive principles by penalizing energy providers that neglect social and environmental responsibilities, reinforcing the "polluter pays" principle. Retributive justice ensures that harmful actions are met with proportional consequences, creating a framework for accountability that complements the restorative and distributive dimensions of justice in the broader transition toward equitable and sustainable systems.

VII. Recommendation

So, JETP in Indonesia has many threats and obstacles that can halt or even stop the funding, but it also has a lot of opportunities that can be elaborated and developed in the near future. It will need a strong commitment from the Indonesian Government, CSOs, and IPG for sure, but huge efforts are needed for that. So we suggest and recommend some advice that could enlighten and ease up the situation.

VII.1 What is the Role of CSOs (Civil Society Organizations)?

CSOs, as part of the Penta Helix of Energy Transition, play an important role. Their roles include mediating between the government and society in subtle ways or acting as intermediaries. Their roles include:

1. Giving Feedback and intercede (ex: framework Monitoring and Evaluation)
2. Participate and assist in public participation and aspiration
3. NGO as Transparency and Public Participation Guard
4. To educate and involve community about urgency of energy transition

VII.2 The Government should:

Essentially, the Indonesian government must establish clear directions and programs to achieve Net Zero Emissions by 2060. This serves as the legal foundation and guidance for JETP and other energy transition programs to determine their actions, agreements, and funding allocations. The JETP Secretariat will rely on the government's directions, making it difficult to implement without clear and strong policies to support JETP itself. If this issue is not properly addressed, it could result in stalled funding and a lack of fairness in the process.

VII.3 What can JETP developer do?

JETP as the mediator between GoI and developed countries must take a swift, rapid, but rigid approach to help mitigate problems that can make the transition slow. Also, with updates from meeting Indonesian government and financiers they had established some priority programs that can be done first and earlier than the other ones in the CIPP. But, they must include and communicate to affected communities and solve together what is the best technologies and programs that could be implemented in Indonesia and its specific locations.

VII.4 Financial institutions: Increase the portion of grants

Although JETP is a good program, it lacks grants. The grant is only 300 million USD or 1,4% of total JETP funds in Indonesia, smaller compared to South Africa which is 3%. So, we need to advocate to IPG or GFANZ to raise the grant so that financing won't be a debt that we must pay along with another kind of investment about energy transition and efforts towards climate change. Also, GoI (Government of Indonesia), IPG, and GFANZ must think about the impact of huge loans on JETP that will cause further conflict because of debt in the future.

Figure 12. AEER Closed-Discussion with Representative of JETP Secretariat and South African Embassy also CSOs from Indonesia

Lastly, the need for diversifying financing models was highlighted. Moving beyond concessional loans, integrating grants and non-debt instruments can provide the financial flexibility needed to support sustainable and inclusive transitions. These approaches ensure a fair distribution of benefits and burdens throughout the energy transition process.

VII.5 Acceleration of the JETP Program

Lastly, JETP program must be accelerated. But, many ministries and government, and also companies complained about lack of funds and investors for this particular program. Major problems also occurred from the regulation and policy that slowed down JETP implementation. But in the meantime, we must reach NZE by 2060. That is still a long way to go and with current and existing efforts, it may not be achievable. So, the government must think and plan a robust strategy and roadmap to decarbonise Indonesia from energy and other sectors to help mitigate a loss that will occur because of climate change in later times. So, one of the recommendations is to ramp up the renewables but also take into account the justice of impacted communities, indigenous people, and local workers.

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