

# JOGMEC カレント・トピックス

独立行政法人エネルギー・金属鉱物資源機構

## Key challenges for Indonesia's coal transition

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### Executive Summary

インドネシアは、エネルギー転換の道において岐路に立たされている。2024年11月18日、ブラジルのリオデジャネイロで開催されたG20フォーラムにおいて、Prabowo Subianto 大統領は、今後15年以内に石炭および化石燃料による発電所をすべて段階的に廃止するという計画を発表した。これは、従来の目標であった2056年から大幅に前倒しする内容である。しかし、このような大胆な公約にもかかわらず、新たな石炭プロジェクトの提案は引き続き提案されており、2024年の石炭生産量は過去最高を記録するなど、発電、冶金、工業プロセスにおける石炭への依存が依然として続いている。

本レポートでは、インドネシアの調査会社 Petromindo に調査を依頼し、インドネシアのエネルギー転換目標と実際の石炭需要の相違を検証し、2050年までに石炭火力発電を廃止するという Prabowo 大統領の構想を実現する上でインドネシアが直面する主要な課題を明らかにした。

これらの課題は主に以下の3つの分野に分類される。

- **規制上の障壁** – 大統領令第112/2022号を超える強力な法的枠組みの欠如、政策の一貫性の欠如、石炭からの円滑な移行を確実にするための包括的な立法支援の欠如。
- **資金調達に関する課題** – 完全な脱炭素化に必要な推定5000億米ドルと、Just Energy Transition Partnership (JETP) を通じて誓約された217億米ドルとの間の大きな資金ギャップ、および政府が石炭の段階的廃止プログラムに国家予算の資金を投入することに消極的である点。
- **石炭の経済的重要性の継続** – 石炭は依然としてインドネシアにとって重要であり、雇用、外貨収入、地方自治体のロイヤリティをもたらしている。代替となる経済的解決策なしに、急速な段階的廃止は困難。

さらに、本レポートでは、大統領の発表に対する石炭会社、発電事業者、産業関係者の反応、およびインドネシアの石炭生産と輸出への潜在的影響についても調査している。

- Prabowo 大統領の石炭の段階的廃止ビジョンは、政策の一貫性の欠如、財政的制約、石炭の経済的優位性といった重大な課題に直面している。
- 石炭会社、発電事業者、産業関係者の間では、段階的廃止のスケジュール実現可能性に関する見解が分かれている。
- インドネシアのエネルギー転換目標を達成するには、規制の明確化、財政的支援、再生可能代替エネルギーへの投資が不可欠である。

## I. Introduction

On November 18, 2024, at the G20 forum in Rio de Janeiro, Brazil, President Prabowo Subianto announced that Indonesia plans to phase out all coal and fossil fuel power plants within the next 15 years, moving up the previously set target of 2056.

However, despite the Indonesian government's commitment in 2021 to halt the construction of new coal-fired power plants after 2023, new coal projects continue to be proposed. In addition to power generation, coal remains a crucial resource for Indonesia's metallurgy, smelting, and other industries. In fact, 2024 marked Indonesia's highest coal production volume in history.

As highlighted earlier, there is a significant discrepancy between President Prabowo's remarks and the actual demand for coal. This raises the need to analyze the reactions of Indonesian coal companies, power producers, and various industries to the President's announcement, as well as to examine its potential impact on Indonesia's coal production and exports.

This short report aims to explore and identify the key challenges Indonesia faces in executing President Prabowo's vision to completely phase out coal power plants by 2050.

## II. Indonesia's Net Zero Emission Commitment

Climate change is a global concern. In 2015, through the Paris Agreement at the UN Climate Change Conference (COP-21) in Paris, the world committed to limiting global temperature rise to 2°C while striving to cap it at 1.5°C above pre-industrial levels.

As part of its commitment to addressing climate change caused by greenhouse gas (GHG) emissions, Indonesia ratified the Paris Agreement through Law No. 16 of 2016, concerning the Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC). As a signatory, Indonesia is obligated to contribute by preparing and reporting its **Nationally Determined Contribution (NDC)** in accordance with its responsibilities under the agreement.

Indonesia submitted its **first NDC** to the UNFCCC in November 2016, outlining plans to reduce GHG emissions and enhance climate resilience. The country committed to reducing emissions by 29% by 2030 unconditionally and 41% by 2030 with international support.

In September 2022, Indonesia submitted an **Enhanced NDC (ENDC)** to the UNFCCC, increasing its targets to a 31.89% reduction through domestic efforts and 43.20% with international assistance by 2030. Indonesia's climate commitment was further reinforced at COP-26 in Glasgow, where the country set a target to achieve Net-Zero Emissions (NZE) by 2060 or sooner.

In November 2024, at the G20 summit in Rio de Janeiro, President Prabowo Subianto, who had just completed one month in office, revised Indonesia's NZE target from 2060 to 2050, citing the country's abundant renewable energy resources as a key factor in accelerating climate action.

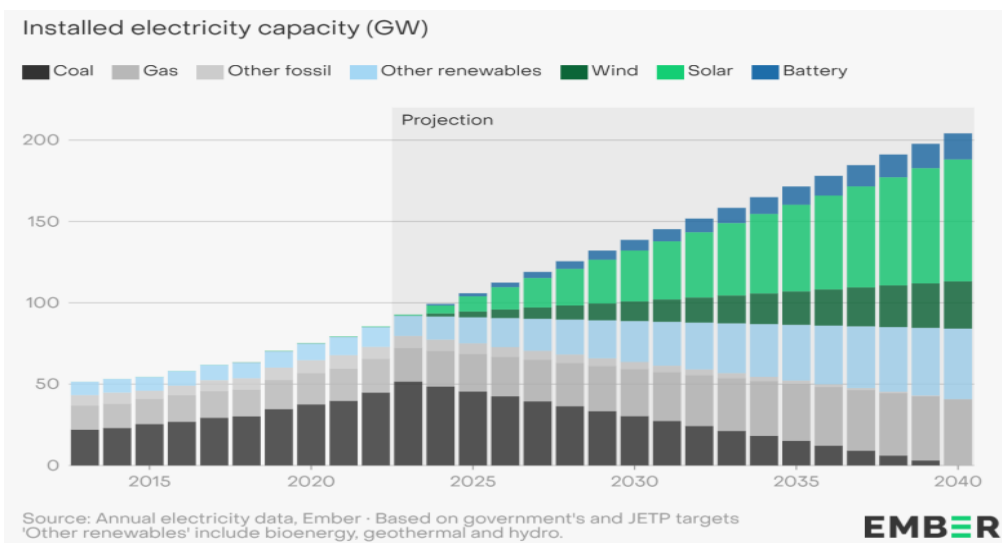
### III. Development of Energy Transition in Indonesia

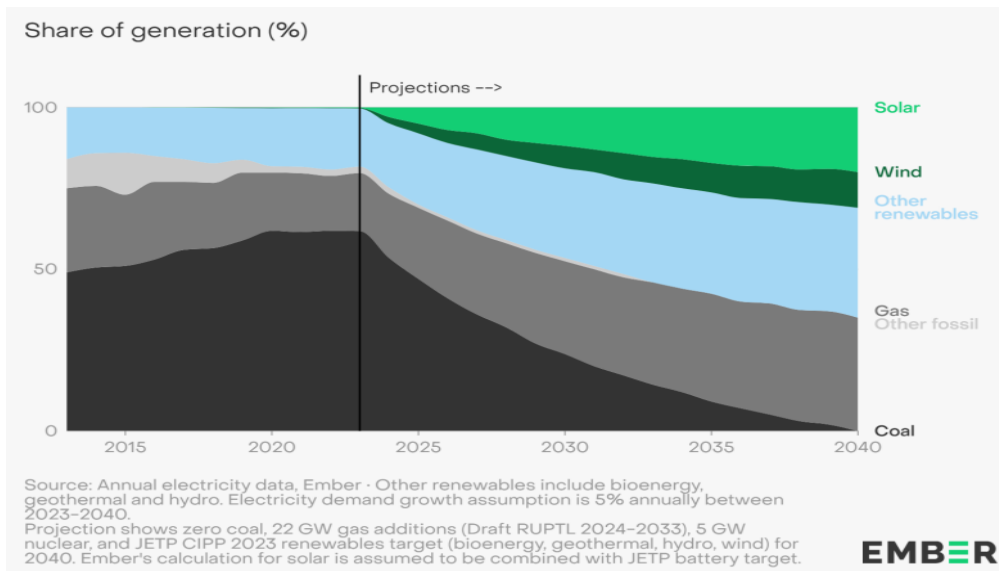
The energy transition is a crucial aspect of Indonesia's path toward net-zero emissions. The energy sector is the second-largest contributor to the country's national GHG emissions, following the food and land use (FOLU) sector, and accounts for about 35% of total emissions. The sector currently relies heavily on coal-fired power plants, highlighting the urgent need for greater integration of renewable energy sources to support decarbonization efforts.

As of January 2025, Indonesia has 54.7 gigawatts (GW) of operating coal power plants (PLTUs), with 8.6 GW under construction and an additional 4.9 GW in various stages of permitting, according to Global Energy Monitor, which tracks energy investments worldwide.

According to an analysis by Ember, a global energy think tank, Indonesia must increase the share of renewables in its power mix to 65% to phase out coal power by 2040. Additionally, the country would need to retire 3 GW of coal capacity annually while adding 8 GW of renewable energy each year.

With electricity demand projected to grow by approximately 5% annually, the report suggests that Indonesia can meet the estimated 806 TWh of electricity demand by 2040, provided renewables reach a 65% share. Under this scenario: Solar energy would contribute 20%; Wind energy would provide 11%; Other renewables—including nuclear, geothermal, bioenergy, and hydro—would account for 34%.





To achieve its net-zero target, Indonesia must accelerate renewable energy expansion and formulate a just transition policy. Currently, two key funding initiatives are under discussion for implementation:

1. Energy Transition Mechanism (ETM) – Funded by the Climate Investment Fund and channeled through the Asian Development Bank (ADB).
2. Just Energy Transition Partnership (JETP) – A multilateral financing initiative supporting Indonesia’s decarbonization.

### Energy Transition Mechanism (ETM)

In 2021, the Asian Development Bank (ADB) launched ETM, a program designed to help combat climate change by reducing greenhouse gas (GHG) emissions across Asia and the Pacific. The region accounts for more than 50% of the world’s GHG emissions and remains heavily reliant on coal and other fossil fuels.

ETM aims to use concessional and commercial capital to accelerate the retirement or repurposing of fossil fuel power plants and replace them with clean energy alternatives. The initiative initially launched in Indonesia, the Philippines, and Vietnam and has since expanded to Pakistan and Kazakhstan.

In September 2022, the Indonesian government issued **Presidential Regulation (Perpres) No. 112/2022** on the Accelerated Development of Renewable Energy for Electricity Supply. Under this regulation:

- The development of new coal-fired power plants is formally banned, except for those already included in PLN’s electricity development plan (RUPTL).

- The Ministry of Energy must create a roadmap for the early termination of coal-fired power plants operated by PLN and independent power producers (IPPs).
- Fiscal contributions can be issued in the form of blended financing from the State Budget or other financial sources to support early retirement of coal plants.
- The Ministry of Finance must issue an implementing regulation detailing the fiscal support mechanism.

On November 14, 2022, during the G20 Summit in Bali, Indonesia's Ministry of Finance established the ETM Country Platform, a framework designed to mobilize commercial and non-commercial financing to support the national energy transition. On the same day, ADB signed a Memorandum of Understanding (MOU) with PT Cirebon Electric Power (CEP), PT PLN (Persero), and the Indonesian Investment Authority (INA) to initiate discussions on the early retirement of Cirebon-1, a 660-megawatt (MW) coal-fired power plant in West Java. The plant's Power Purchase Agreement (PPA) with PLN was originally set to expire in 2042.

### **Just Energy Transition Partnership (JETP)**

On November 16, 2022, the Government of Indonesia (GoI) and the International Partners Group (IPG) launched the Just Energy Transition Partnership (JETP Indonesia) to finance Indonesia's decarbonization efforts. The IPG consists of:

- Co-leaders: Japan and the United States
- Other partners: Canada, Denmark, the European Union, Germany, France, Norway, Italy, and the United Kingdom

JETP Indonesia was initially backed by US\$20 billion over three to five years, with US\$10 billion from the IPG and an additional US\$10 billion from private financing via the Glasgow Financial Alliance for Net Zero (GFANZ). By May 2023, public sector funding from the IPG increased to US\$11.7 billion, bringing the total JETP financing to US\$21.7 billion—the largest energy transition financing package in the world.

On November 21, 2023, the JETP Secretariat released the Comprehensive Investment and Policy Plan (CIPP), which:

- Set higher renewable energy targets, including annual capacity goals.
- Outlined funding needs for renewable energy generation, grid infrastructure, energy storage, and just transition initiatives.
- Estimated a funding requirement of US\$97 billion until 2030.

However, the CIPP is not legally binding and serves as a recommendation for PLN's electricity supply plan (RUPTL). It is intended to be a "living document" that is regularly updated to reflect market conditions and policy priorities.

On December 3, 2023, during COP-28, ADB, PLN, PT CEP, and INA signed a nonbinding framework agreement to shorten the PPA for Cirebon-1, allowing the plant to cease operations in December 2035 instead of July 2042—seven years ahead of schedule. However, the transaction, initially expected to be finalized by mid-2024, has faced delays due to several challenges.

#### 1. Financial and Legal Uncertainty

- PLN and CEP failed to reach a new Power Purchase Agreement (PPA) by July 2024.
- The estimated cost of replacing Cirebon-1 with renewable energy has risen to US\$1.3 billion, significantly higher than ADB's initial estimate of US\$300 million—mainly due to subsidies required for higher-cost renewable energy.

#### 2. Regulatory Hurdles

- A key issue is whether the US\$1.3 billion cost can be classified as "allowable costs" under Presidential Regulation 112/2022.
- If recognized as a strategic investment, PLN could avoid financial burdens and ensure the cost is not classified as a state loss.

According to PLN, the main concern is the lack of clear legal protections and a detailed roadmap for retiring coal plants, especially given that power generation costs could rise by nearly 90%. PLN executives worry that signing agreements without legal clarity could expose them to criminal charges in the future.

In June 2024, these concerns were reinforced when a former chief executive of state energy firm Pertamina was sentenced to nine years in prison for signing a long-term gas contract that a corruption court ruled had caused state losses of US\$114 million.

## IV. Key Challenges for Indonesia's Coal Transition

Indonesia faces three significant challenges in its coal transition: regulatory barriers, financing challenges, and coal's continued dominance in the energy sector.

#### 1. Regulatory Barriers

Indonesia has established a legal framework to initiate the phase-out of coal-fired power plants through Presidential Regulation (Perpres) No. 112/2022 on the Accelerated Development of Renewable Energy for Electricity Supply. However, the hierarchical status of a Perpres in Indonesia's legal system may not be strong enough to guarantee the realization of a just energy transition. Given the long-term nature of the transition, more permanent legal instruments—such as laws—are necessary to provide a robust legal foundation for the Just Energy Transition Partnership (JETP).

Furthermore, the Government of Indonesia (GoI) must update and revise several key energy policy documents, including:

- National Energy Policy (KEN) – Recently approved by the House of Representatives.
- National Energy Planning (RUEN).
- PLN's Electricity Supply Business Plan (RUPTL).
- A comprehensive roadmap for the early retirement of coal-fired power plants (PLTUs).

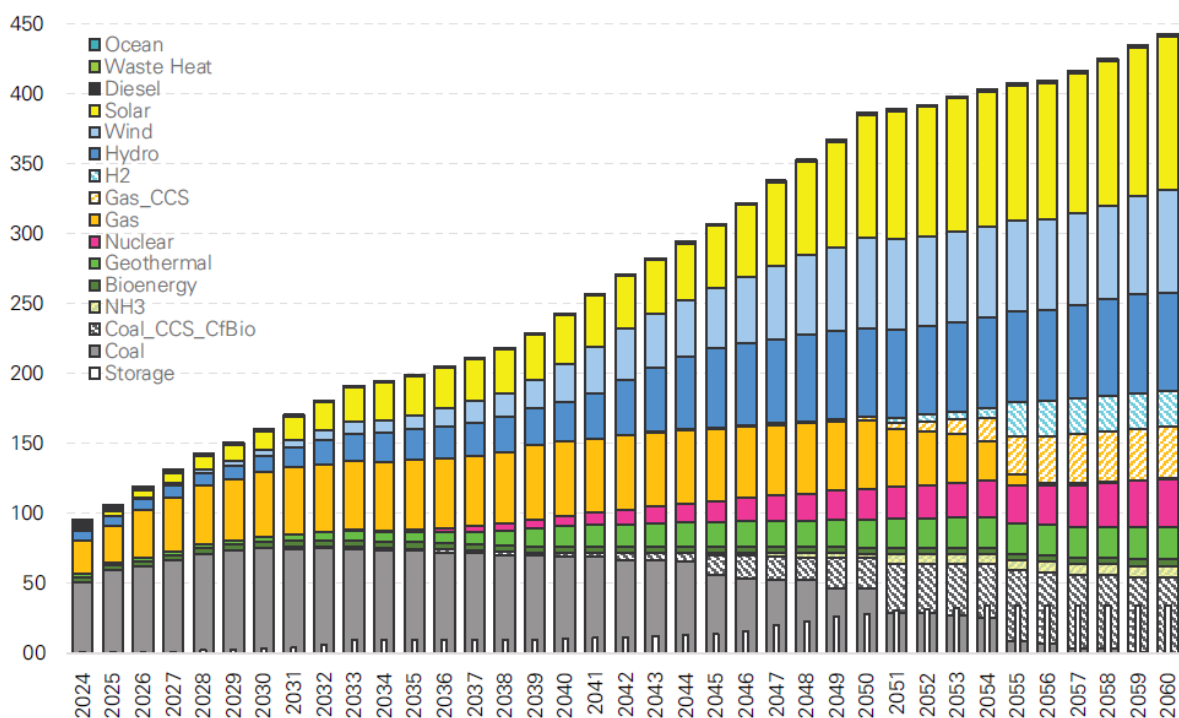
This roadmap should focus on reducing carbon emissions, decreasing coal dependency, and attracting investments in renewable energy. Additionally, the GoI must expedite the passage of the New and Renewable Energy (NRE) Bill to provide a strong legislative framework for the energy transition.

On November 29, 2024, the Ministry of Energy and Mineral Resources (ESDM) issued Decree No. 314.K/TL.01/MEM.L/2024, establishing the National Electricity Master Plan (RUKN) to align with Indonesia's net-zero emissions (NZE) target by 2060. The RUKN 2024-2060, an update from the RUKN 2019-2038, sets the following energy mix targets for 2060:

- 73.6% New and Renewable Energy (NRE).
- 26.4% Fossil energy with Carbon Capture and Storage (CCS) / Carbon Capture, Utilization, and Storage (CCUS).
- Breakdown of NRE by 2060:
  - 24.1% New Energy.
  - 20.7% Variable Renewable Energy.
  - 28.8% Dispatchable Renewable Energy.

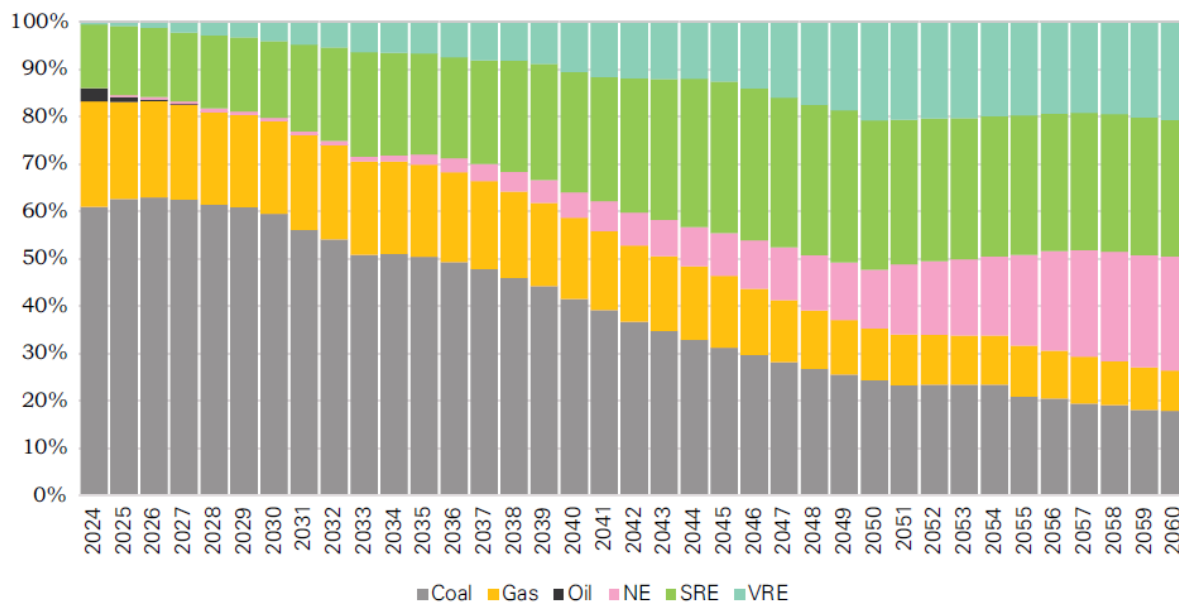
The NRE portion is expected to surpass fossil energy by 2044, when it is projected to reach 52% of the energy mix.

### Projection of Power Generation Capacity 2024-2060 (in GW)



Source: RUKN 2024-2060

### Projection of Energy Mix in Power Generation 2024-2060 (in %)



Source: RUKN 2024-2060; SRE = stable renewable energy; VRE = variable renewable energy

However, RUKN 2024-2060 includes coal phase-down strategies that involve converting most existing coal plants to biomass co-firing with CCS/CCUS and ammonia-fueled power generation.



These strategies, however, appear to contradict Indonesia's decarbonization targets and divert focus away from accelerating renewable energy deployment, which is critical to meeting growing electricity demand by 2040.

Adding to the concerns, the approval of the KEN draft, which allows coal plants to operate until 2060, has raised further doubts about Indonesia's commitment to achieving its climate goals. While the use of carbon capture technology and co-firing methods has been approved as part of the solution, many experts argue that these measures represent a step backward in achieving a true energy transition.

Indonesia's energy transition progress continues to be undermined by policy inconsistencies and missed targets. The country originally set a goal for renewable energy to constitute 23% of its energy mix by 2025, but as of December 2024, renewables accounted for only 13.9%—falling short of even the revised target of 17–19%.

The issuance of RUKN 2024-2060 will accelerate PT PLN's efforts to finalize its long-awaited new RUPTL, a crucial document for investors in Indonesia's power sector and related industries. The Ministry of Energy and Mineral Resources (ESDM) has confirmed that the new RUPTL 2025-2034 will be released soon. This updated RUPTL is expected to include an additional 71 GW of power generation capacity over the next decade, with approximately 70% of the capacity coming from renewable energy sources.

## **2. Financing Challenges**

PLN has stated that it lacks the budget to retire all coal power plants within 15 years, estimating that shutting down one coal power plant costs between IDR 30-50 trillion (US\$1.8–3.1 billion). The US\$21.7 billion allocated through the Just Energy Transition Partnership (JETP) falls far short of the funds needed for Indonesia's full decarbonization efforts.

For the electricity sector alone, PLN has repeatedly emphasized that the funding required to achieve the Net-Zero Emissions (NZE) target by 2060 is estimated at a minimum of US\$500 billion, which far exceeds the funding capacity of the national budget. In fact, among the projects outlined by PLN under JETP, the total financing needed amounts to US\$150 billion—significantly higher than the available JETP funds.

The Indonesian government has confirmed that no funds from the State Budget (APBN) will be used for the early retirement of coal-fired power plants.

As of December 2024, according to the Institute for Essential Services Reform (IESR)—a Jakarta-based think tank—funding countries within the International Partners Group (IPG) have:

- Disbursed US\$230 million in grants and technical assistance for 44 programs.
- Allocated US\$97 million for 11 programs, which are pending approval.
- Provided US\$1 billion for equity investments and loans for eight approved projects, including US\$126 million from the International Development Finance Corporation (DFC) to finance the Ijen geothermal power plant.
- Reserved an additional US\$5.2–6.1 billion for 19 projects still under approval.
- Provided US\$2 billion in project guarantees from the UK and US governments, which are essential for reducing project risks and lowering loan interest rates.

### **Growing Concerns Over JETP Funding**

Concerns regarding JETP Indonesia's commitments are growing. Minister of Energy and Mineral Resources Bahlil Lahadalia has stated that the early retirement of coal plants will only proceed once a secured funding source is confirmed. He also ruled out relying on the state budget for the transition.

Meanwhile, Hashim Djojohadikusumo—the younger brother of President Prabowo Subianto—has called the JETP a "failure," claiming that the U.S. government has not disbursed a single dollar in JETP aid to Indonesia. His comments follow actions taken by former U.S. President Donald Trump, who signed executive orders withdrawing the U.S. from the Paris Climate Agreement and freezing all foreign assistance.

However, according to Tempo Magazine's research, the U.S. has pledged US\$2 billion for JETP Indonesia, including:

- US\$1 billion in loan guarantees to support Indonesia's access to World Bank financing for energy transition projects.
- A bilateral agreement between the U.S. and the World Bank, signed on November 9, 2024.

However, Indonesia has not yet utilized these loans because the interest rates are higher than government bond rates, making them less financially attractive.

Germany has taken over the co-leadership of the IPG in JETP Indonesia from the U.S., alongside Japan, following a leadership rotation. A German delegation is expected to visit Jakarta in February 2025 to discuss the implementation of JETP projects.

One of the key issues with JETP Indonesia is that the Comprehensive Investment and Policy Plan (CIPP) does not specify restrictions on captive coal plants. While the plan requires Indonesia to limit the development of captive coal-fired power plants, it still allows their construction under

Presidential Regulation 112/2022, as long as they are integrated with industries or designated as part of Indonesia's National Strategic Projects.

In May 2024, the JETP Secretariat officially launched a study on clean energy transitions for captive power use in Indonesia. The findings from this study will be incorporated into the 2024 update of the CIPP, expanding its scope to include:

- Off-grid power sector investments.
- Energy efficiency initiatives.
- Electrification strategies.

The inclusion of captive power plants in the updated CIPP will significantly increase the investment requirements for JETP Indonesia.

### **3. Coal Still Plays a Significant Role**

Coal remains a critical component of Indonesia's economy, both as one of the world's largest producers and as a major consumer. As of December 2023, Indonesia's coal resources were estimated at 97.2 billion tons, with 31.7 billion tons of reserves. The role of coal has grown even more dominant, with production steadily increasing in recent years. Indonesia saw a dramatic rise in coal production, from 565.7 million tons in 2020 to over 834.1 million tons in 2024.

Indonesia also remains the world's largest exporter of thermal coal, with 67% of its 2024 output shipped to key markets such as China, India, Japan, Taiwan, and ASEAN countries. The global coal market remains favorable for Indonesia due to several competitive advantages: low-cost open-pit mining methods, which keep production costs down; and geographical proximity to major Asian markets, ensuring highly competitive transportation costs.

The mining sector continues to be one of Indonesia's key economic drivers. In 2024, the sector contributed IDR 140.5 trillion (US\$8.6 billion) to national revenue, although this marked a decline from IDR 172.1 trillion (US\$10.5 billion) in 2023. Despite this revenue drop, investment in the mining sector slightly increased to US\$7.7 billion in 2024, up from US\$7.5 billion in 2023.

Coal remains a crucial economic asset for Indonesia, providing significant income and employment for many Indonesians. In 2024, the total value of Indonesia's coal exports was estimated to reach US\$34.5 billion. Revenue from these exports provides a vital source of foreign currency, which helps co-finance large infrastructure projects. Additionally, about 80% of coal royalties are distributed to regional and provincial governments, in accordance with regulations that allocate: 16% to the provincial government; 32% to the producing regency; 32% to neighboring regencies within the same province.

Indonesia's domestic coal consumption has grown significantly over the past five years, rising from 132 million tons in 2020 to 233 million tons in 2024. The electricity sector accounts for approximately 65% of domestic coal consumption, and this figure is expected to continue increasing with the operation of new captive coal-fired power plants.

Captive power plants, which are off-grid facilities used by industrial complexes—primarily in metal processing industries—are set to drive further growth in coal consumption in the coming years.

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## V. Industry Stakeholders' Reactions to the President's Remarks

President Prabowo Subianto's vision for a 2040 fossil power phase-out has drawn mixed reactions from industry stakeholders. Petromindo interviewed various industry representatives to gauge their responses to the president's remarks.

While many stakeholders support the government's long-term goal of reducing carbon emissions and transitioning to renewable energy, they stress the importance of balancing energy resilience and economic stability during the transition.

### Key Concerns Raised by Industry Stakeholders

- **Impact on Industrial Growth and Energy Supply**  
Many industries, particularly those heavily reliant on coal, worry about how the transition will affect energy security and industrial development.
- **Need for Clear Roadmaps and Strategic Planning**  
Stakeholders emphasized the importance of well-defined roadmaps, strategic planning, and continued investment in clean coal technologies and carbon reduction methods.
- **Support for a Balanced Transition Approach**  
There is broad agreement that Indonesia's energy transition should be gradual, incorporating technological innovation and sustainable development to ensure economic and energy stability.

While experts and environmental activists welcomed the government's commitment to a coal phase-out, they expressed caution regarding the policy's consistency and follow-through. Some warned that the announcement might be yet another example of policy flip-flopping, where ambitious climate goals fail to translate into concrete action.

Despite the positive signal sent by President Prabowo's remarks, experts argue that it must be followed by a clear directive to relevant ministries and PT PLN. They urge the government to

develop detailed and measurable action plans to ensure real progress toward the 2040 phase-out goal.

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**Gita Mahyarani, Acting Executive Director of Indonesia Coal Mining Association (APBI-ICMA)**

Interviewer: Cepi Setiadi – Petromindo Journalist

Date: January 2, 2025

Method : Phone interview

*“The transition to net-zero emissions must take energy resilience into account. It’s essential to ensure there is adequate replacement for coal-fired power plants by the target year.”*

Whatever decision the government makes to accelerate the achievement of the net-zero emissions (NZE) target will undoubtedly take energy resilience into consideration. It is, therefore, crucial to ensure that by the targeted year, a replacement for coal-fired power plants (PLTUs) is available and sufficient to meet the energy needs of all segments of society.

According to the latest Electricity Supply Business Plan (RUPTL) of 2021, there is already a plan to reduce the coal energy mix for PLTUs. By 2029 and 2030, the use of coal is projected to fall below 60%, with 59.8% in 2029 and 59.4% in 2030. However, these figures remain above 50%.

Additionally, there needs to be a well-thought-out plan for managing future coal resources and reserves, which currently stand at 31.7 billion tons in reserves and 97.2 billion tons in resources. Coal is not only essential for PLTUs but is also required for other industries such as cement, fertilizers, smelters, and more.

In line with this, we hope that clean coal technologies will continue to advance, ensuring that coal can still be utilized with minimal environmental impact through these innovations. The development of clean coal technology is key to balancing the continued use of coal with environmental sustainability.

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**Niko Chandra, Corporate Secretary of PT Bukit Asam Tbk** [one of Indonesia's largest coal mining companies, producing more than 41.3 Mt in 2024]

Interviewer: Tri Subhki R – Petromindo Journalist

Date: January 2, 2025

Method : Phone interview

*“We are committed to supporting the transition to clean energy, gradually, and we are also investing in more efficient and environmentally friendly coal technologies.”*

In this regard, PT Bukit Asam Tbk (PTBA) is committed to supporting the government’s policies that promote the transition to clean energy.

The transition to clean energy is carried out gradually, taking into account various aspects, including supply reliability and affordability. PTBA is also committed to contributing to maintaining national energy resilience by continuously innovating and adapting to environmentally friendly technologies.

Transformation is continuously being carried out by PTBA to become an integrated and sustainable world-class energy company. The company encourages the use of efficient and environmentally friendly technology for coal-fired power plants. For your information, the Sumsel-8 coal-fired power plant owned by PTBA’s affiliated company uses Super Critical technology, resulting in lower emissions. PTBA has also developed the company’s business portfolio by entering the renewable energy development (EBT) business.

We are very concerned about climate change issues and are ready to contribute to achieving the Net Zero Emissions target by 2060.

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**Dileep Srivastava, Director & Corporate Secretary of PT Bumi Resources Tbk** [Coal Mining Company; BUMI operates mines through four companies: Arutmin Indonesia, Kaltim Prima Coal (KPC), Pendopo Energy Batubara and Fajar Bumi Sakti]

Interviewer: Tri Subhki R – Petromindo Journalist

Date: January 2, 2025

Method : Phone interview

*“We appreciate the government’s commitment to renewable energy. A clear roadmap and collaborative efforts are necessary for a smooth transition that maintains energy security.”*

Let’s wait and see.

Regarding the statement on the early retirement of coal-fired power plants, BUMI appreciates the government’s commitment to renewable energy.

As for suggestions, the need for a clear roadmap and collaborative efforts with stakeholders to ensure a smooth transition while maintaining energy security and economic stability could be helpful.

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**Sanny Iskandar, Chairman of the Indonesian Industrial Estates Association (HKI)** [HKI has 112 company members, in 24 provinces, covering total gross area of about 120,371.20 hectares]

Interviewer: Calvin Purba – Petromindo Journalist

Date: December 26, 2024

Method : Phone interview

*“The phase-out of coal-fired plants should be managed carefully to avoid hindering industrial growth. Electricity supply is critical for sectors like data centers and manufacturing.”*

Referring to the gradual phase-out process of Steam Power Plants (PLTU), which primarily use coal as the main fuel, this process is carried out to reduce carbon emissions and support the transition to cleaner and more sustainable energy.

The Indonesian Industrial Estate Association (HKI) welcomes President Prabowo’s strategic plan regarding the termination of all Steam Power Plants (PLTU) by 2040. However, the main focus right now should be the fact that coal-fired power plants still play a significant role in supporting the availability of electricity in Indonesia. Therefore, in its implementation, caution is needed to avoid hindering the growth of the industrial sector, which is highly dependent on the supply of electrical energy. Additionally, with the growing trend of the data center industry, the demand for electricity supply is also increasing.

As a note, Indonesia has previously experienced a phase of electricity supply shortages before the launch of the 30,000 MW program. Therefore, the phase-out of coal-fired power plants should not be implemented before other replacement power plants are ready, as it would cause a shortage of electricity supply that would hinder economic growth.

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**Darmawan Prasodjo, President Director of PT PLN (Persero)**

Interviewer: Nova Farida – Petromindo Journalist

Date: January 14, 2025

Method : Phone interview

*“PLN is fully committed to supporting the energy transition. We have set a roadmap to achieve 75 GW of renewable energy by 2040 and are working on collaboration and investment-friendly ecosystems.”*

PLN President Director, Darmawan Prasodjo, addressed the government's initiative to phase out Steam Power Plants (PLTU) over the next 15 years, aiming to add an additional 75 GW from renewable energy (EBT) sources.

Darmawan affirmed PLN's commitment to fostering global collaboration and supporting the government's energy transition efforts through strategic cooperation in ideas, technologies, and innovative solutions to address future energy transition challenges.

Under the leadership of President Prabowo Subianto, Indonesia is transitioning from fossil fuel-based energy development to renewable energy, aligning with the goal of stimulating national economic growth while prioritizing renewable energy as the future of global energy.

"We are prepared to design a collaborative and investment-friendly ecosystem that enables all stakeholders to thrive and support one another. The energy transition aims not only to reduce emissions but also to achieve a balance between growth and environmental sustainability. We seek to provide affordable clean energy while supporting economic growth of up to 8% through energy self-sufficiency," stated Darmawan.

To bolster national economic growth, PLN is dedicated to increasing the capacity of renewable energy power plants by 75% of the projected 100 gigawatts (GW) by 2040.

"We have formulated a concrete roadmap and are actively expanding collaboration. By 2040, out of the planned 100 GW of power plant capacity, approximately 75 GW will derive from renewable energy, 5 GW from nuclear, and the remainder from gas," Darmawan explained.

Darmawan also noted that over the past four years, PLN has undergone a transformation, establishing a foundation for innovation and efficiency, digitizing business processes, and successfully creating a safe and reliable electricity operating system.

"PLN has shifted its perspective from reactive to proactive, ensuring stronger financial sustainability. We have transformed our services to be more responsive, satisfactory, and equitable. Processes have transitioned from bureaucratic to business-focused," he added.

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**Dharma Djojonegoro, President Director of PT Adaro Power (AP)** [Independent power producer; AP operates coal-fired power plants (PLTUs) through subsidiaries like PT Makmur Sejahtera Wisesa (2x30 MW), PT Tanjung Power Indonesia (2x100 MW), and PT Bhimasena Power Indonesia (2x1,000 MW)]



Interviewer: Nova Farida – Petromindo Journalist

Date: January 14, 2025

Method : Phone interview

*“We’re committed to using more environmentally friendly technologies and have started renewable energy projects, such as rooftop solar and hydroelectric power plants.”*

We are ready to engage in dialogue to find the best solutions for all parties involved in the early retirement program for coal-fired power plants (PLTU). In operating PLTUs, we utilize more environmentally friendly and efficient technologies, such as circulating fluidized bed (CFB) technology, which operates at low temperatures and reduces sulfur dioxide emissions, as well as Ultra Super Critical (USC) technology and flue gas treatment systems that minimize emissions and dispersion, making them environmentally friendly. Additionally, we have made efforts to decarbonize, including through co-firing initiatives.

Moving forward, we will focus on developing renewable energy projects and actively participating in tenders for various renewable power plants. Some of the renewable energy projects currently underway include a rooftop solar power plant (PLTS) with a capacity of 130 kWp in Kelanis, as well as an additional 468 kWp PLTS with a floating system in Central Kalimantan to meet the electricity needs of PT Adaro Andalan Indonesia Tbk (AADI)’s mining areas. Furthermore, we are working on the Mentarang Induk Hydroelectric Power Plant (PLTA) with a capacity of 1,375 MW in the industrial area of North Kalimantan.

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### **Sudirman Widhy, Chairman of the Association of Indonesian Mining Professionals (PERHAPI)**

Interviewer: Cipi Setiadi – Petromindo Journalist

Date: January 14, 2025

Method : Phone interview

*“The phase-out of coal should be carefully studied to ensure energy needs are met. The development of New and Renewable Energy should be coupled with advancements in carbon emission reduction technologies like Carbon Capture and Storage (CCS).”*

Regarding the government’s plan to phase out coal-fired power plants (PLTUs) within the next 15 years, we at PERHAPI (the Indonesian Mining Experts Association) believe that this decision should be approached with caution and thoroughly studied to assess its impact on meeting national energy demands. This is especially critical given that our country will require substantial energy to support national development in the future.

PERHAPI strongly supports the development of New and Renewable Energy policies so that our country will not remain overly reliant on fossil fuels. However, we recommend that the development of New and Renewable Energy should also be accompanied by advancements in technologies that can reduce carbon emissions from coal utilization as an energy source. It is important to note that Indonesia's national coal reserves and resources remain abundant and are not expected to be depleted within the next 50 years, assuming the current national coal production level of approximately 700 million tons per year remains steady.

Coal resources are a blessing from the Almighty for the Indonesian people, and it is imperative that they be optimally utilized for the welfare of the people, as mandated by the Indonesian Constitution (UUD 1945).

The use of coal as an energy source can still be made environmentally friendly if accompanied by the adoption of carbon emission reduction technologies, such as Carbon Capture and Storage (CCS). At present, several countries have developed and implemented CCS technology to reduce carbon emissions from fossil fuel combustion. It is hoped that the government will collaborate with and involve these countries in the development of CCS technology to ensure that coal can continue to be used as a national energy source until its reserves are fully depleted. By doing so, this affordable energy resource can be optimally utilized to support national development and the future prosperity of Indonesia.

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**Fabby Tumiwa, Executive Director of the Institute for Essential Services Reform (IESR)** [Indonesian energy think tank]

IESR considers the statement to stop the operation of coal-fired power plants in 2040 and achieve 100 percent renewable energy within the same period as a positive signal of President Prabowo's ambition to accelerate the energy transition in Indonesia and support the limitation of earth warming by 1.5 degrees Celsius according to the Paris Agreement.

The president's ambition to realize the green energy self-sufficiency plan needs to be continued with leadership and firm orders to relevant ministers and PLN to develop targets, detailed road maps, measurable plans supported by aligned policies and regulations to achieve these targets.

Source: Institute for Essential Services Reform (IESR)

Date: November 21, 2024

NewsTitle: Indonesia's Prabowo plans to retire all fossil fuel plants in 15 years, but experts are skeptical.

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**Bhima Yudhistira, executive director of the Indonesia-based Center of Economic and Law Studies (CELIOS)** [Indonesian energy think tank]

“If the government is serious about speeding up the energy transition, efforts to shut down coal-fired power plants and prevent new permits for the construction of coal-fired power plants must be clear so that partners, investors and financial institution can see the pipeline and progress.”

Source: The Associated Press

Date: November 22, 2024

NewsTitle: Indonesia’s Prabowo plans to retire all fossil fuel plants in 15 years, but experts are skeptical.

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**Lauri Myllyvirta, Lead Analyst at the Centre for Research on Energy and Clean Air (CREA)**

[Independent international research organization]

“Indonesia’s newly announced commitment to retiring all of the country’s coal-fired and other fossil fuel power plants within 15 years is a truly admirable goal. However, we strongly advise the Prabowo government to make sure its plan is aligned with the on-grid investment plan set in the JETP CIPP, an approach that would net a greater total of clean energy investments than adhering to the 75 GW target alone. We also ask that the government continue to work on removing the barriers that have heretofore stymied the take-off of low-cost clean power sources in Indonesia, in order to assure that the goals laid out in the plan are fully realized within the proposed timeframe.”

Source: Centre for Research on Energy and Clean Air (CREA)

Date: November 26, 2024

NewsTitle: President Prabowo’s fossil power phase out vision requires more robust clean energy targets and investment.

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## VI. Conclusion

President Prabowo Subianto, who has been in office for less than four months, has actively demonstrated his commitment to sustainable development. During his overseas engagements, Prabowo has positioned Indonesia as an active global player, seeking to enhance global collaboration amid increasingly complex geopolitical dynamics.

While Prabowo has expressed enthusiasm for achieving energy independence and reaching net-zero emissions before 2060, his vision has not yet been fully translated into concrete plans and actions as of today.

Coal-fired power plants remain the backbone of Indonesia's electricity system, providing reliable baseload energy. From an energy security perspective, coal remains critical, making the coal phase-out far more complex than it may seem. Setting phase-out targets without carefully considering energy security and other associated challenges could prove unrealistic.

To achieve Indonesia's net-zero emissions target, the country must address three major challenges in its coal transition:

1. Regulatory Barriers – The need for a stronger legal foundation and clearer policies to ensure a just energy transition.
2. Financing Challenges – The current funding gap remains a major hurdle, with available financial support falling short of the total investment required.
3. Coal's Continued Dominance – Indonesia's economic reliance on coal and its role in energy security make a rapid phase-out difficult.

Indonesia's success in achieving its net-zero emission goals will depend on its ability to overcome these challenges and accelerate its energy transition. Otherwise, its climate ambitions risk remaining rhetorical rather than actionable.

おことわり：本レポートの内容は、必ずしも独立行政法人エネルギー・金属鉱物資源機構としての見解を示すものではありません。正確な情報をお届けするよう最大限の努力を行ってはおりますが、本レポートの内容に誤りのある可能性もあります。本レポートに基づきとられた行動の帰結につき、独立行政法人エネルギー・金属鉱物資源機構及びレポート執筆者は何らの責めを負いかねます。なお、本資料を引用等する場合には、あらかじめ独立行政法人エネルギー・金属鉱物資源機構から許可を受けてください。