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CRITIQUE OF THE 2025 ENERGY TRANSITION ROADMAP

THE FALLACY OF TECHNO-FINANCIAL LOGIC BEHIND COAL POWER PLANT (PLTU) CLOSURES

2025

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THE FALLACY OF TECHNO-FINANCIAL LOGIC BEHIND COAL POWER PLANT (PLTU) CLOSURES

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About CELIOS

The Center of Economic and Law Studies (CELIOS) is an independent research institution specializing in public policy, equitable economics, and regional capacity building. CELIOS is committed to advocating for regulations that align with environmental governance, Indigenous rights, and the enhancement of regional autonomy.

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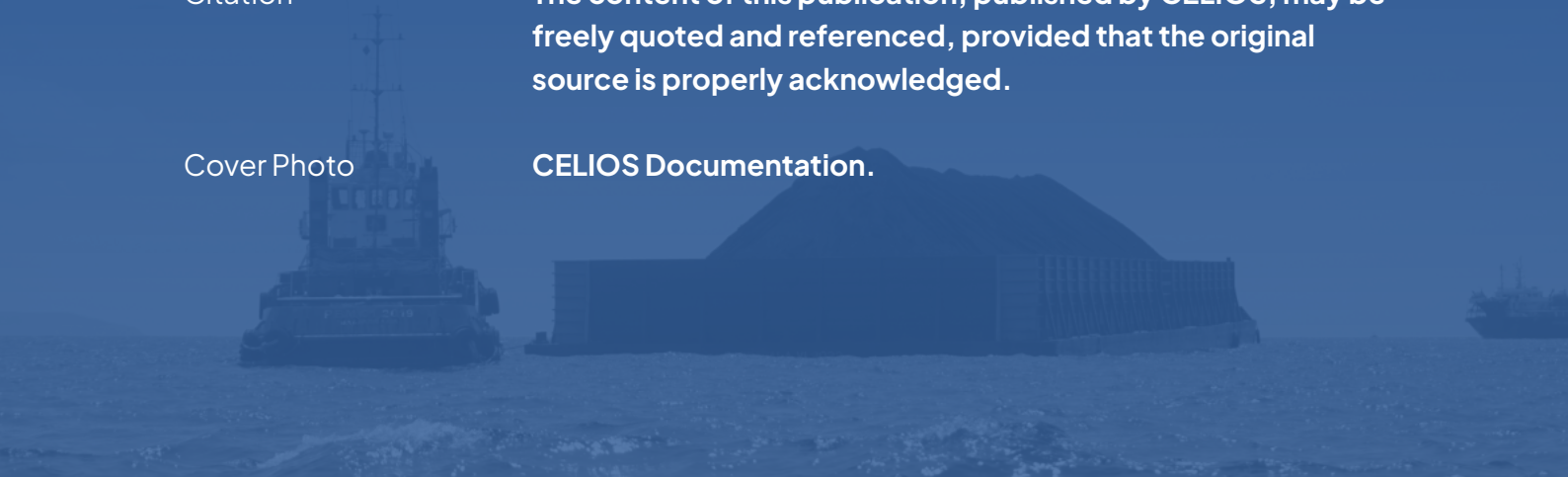

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Findings

Ministerial Regulation of Energy and Mineral Resources (Permen ESDM) No. 10/2025 treats the early retirement of coal power plants (PLTUs) as an option rather than an obligation. The government has full discretion to implement or disregard this measure based on funding availability. This reflects a weak commitment to energy transition and leaves room for continued operation of coal power plants.

Permen ESDM 10/2025 is contradictory: while it claims to promote energy transition, it still allows the continued use of coal power and fossil energy. As a result, the growth of renewable energy in the energy mix remains slow, jeopardizing the achievement of the 2050 Net Zero Emissions target.

The development of the coal power plants retirement roadmap lacks adequate participation and transparency. Without standardized procedures and public engagement, the policy is vulnerable to misdirection and contradicts the principles of openness and meaningful participation mandated by the Law on the Formation of Legislation.

Assigning PLN as the main drafter of the coal power plants retirement study carries a high risk of conflict of interest and policy bias. As the owner of coal power plants and a dominant actor in the power sector, PLN is not well-positioned to lead a study that directly affects its own business interests. Without independent oversight and cross-sectoral participation, the study's findings are likely to maintain the status quo and hinder progress toward energy transition.

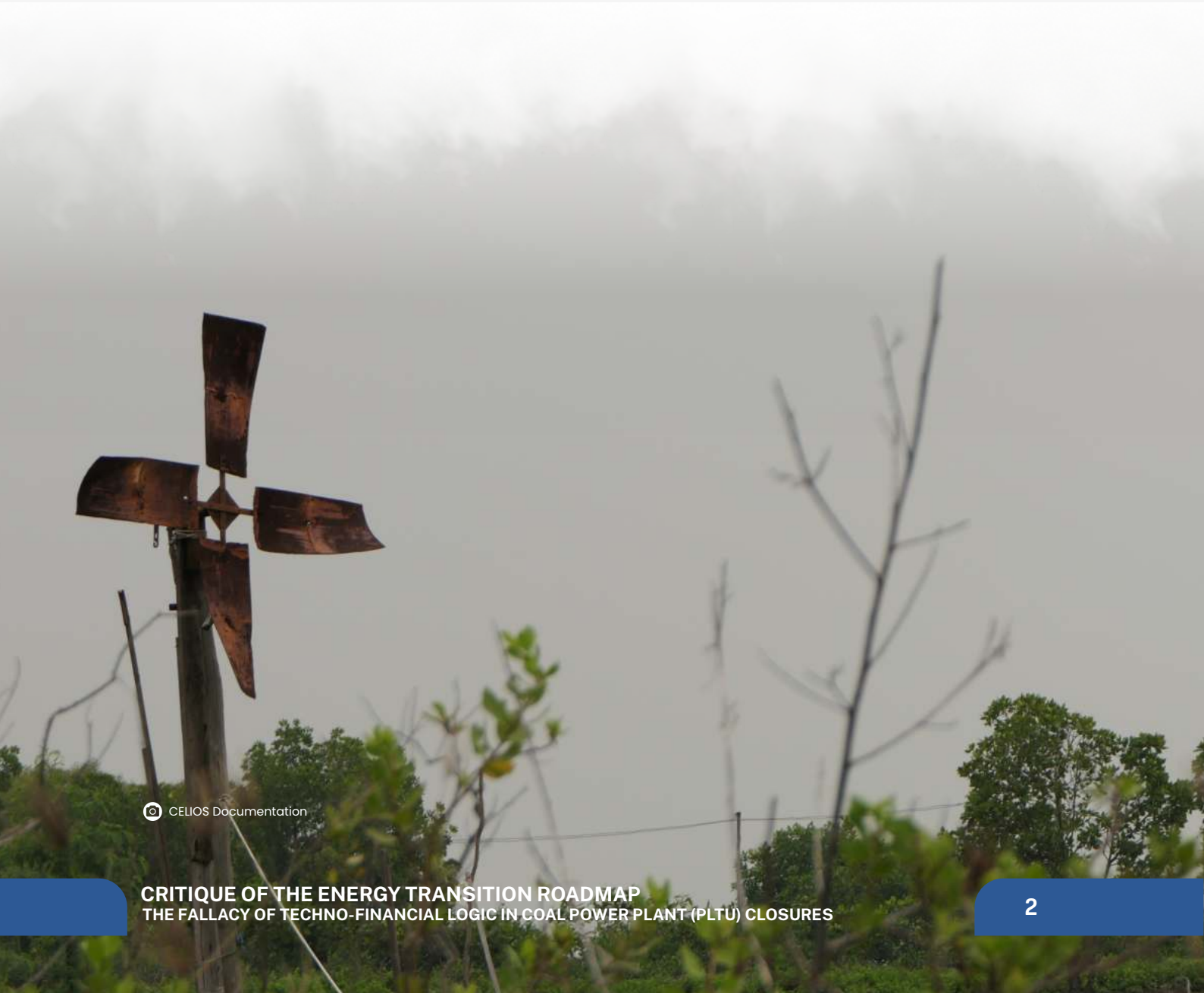
The structure of the energy transition phases outlined in Permen ESDM 10/2025 actually undermines the effort to phase out coal power plants, by making early retirement the last resort. The initial reliance on expensive and unproven technologies such as CCS/CCUS, along with a "natural retirement" approach without clear timelines, slows down decarbonization and provides room for coal power plants continuity.

Ethical and Scientific Errors in AHP Weighting
Placing environmental and health aspects below funding considerations in the Analytic Hierarchy Process (AHP) framework is both a moral and scientific flaw. Given the high mortality rates linked to coal power plant pollution, treating ecological impacts as secondary undermines public well-being and environmental responsibility.

Lack of Expert Clarity Threatens Policy Accuracy
The policy outlined in the regulation is weak, as it relies on expert opinions without clear identification or qualifications, and without transparency. This lack of clarity compromises the credibility and accuracy of the resulting roadmap.

The use of the Analytic Hierarchy Process (AHP) method in the policy for closing coal power plants is clearly inappropriate. By attempting to balance inherently incomparable aspects—such as environmental and economic factors—the policy tends to downplay ecological and public health impacts.

The roadmap for PLTU retirement is still developed in a defensive and subordinate manner to the Omnibus Law on Job Creation, the Energy Law, the National Energy Policy (KEN), the General Plan for National Electricity Development (RUKN), and the Electricity Supply Business Plan (RUPTL). As a result, it fails to serve as a bold, guiding instrument for the energy transition and instead reinforces the status quo of coal dependence.



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CONTEXT OF THE STUDY

When Presidential Regulation (Perpres) No. 112 of 2022 was enacted on September 13, 2022, Article 3 of the regulation on the Acceleration of Renewable Energy Development for Electricity Supply mandated the formulation of a roadmap for the accelerated retirement of coal power plants as part of the energy transition in the power sector. The regulation also stipulates that the roadmap must, at a minimum, include: (a) a plan to reduce greenhouse gas emissions from coal power plants; (b) strategies to accelerate the retirement of coal power plants; and (c) alignment across related policies.

As a follow-up to the mandate in Article 3 of Perpres No. 112/2022, the government issued the Energy Transition Roadmap for the Power Sector through Ministerial Regulation of Energy and Mineral Resources (Permen ESDM) No. 10 of 2025, on April 10, 2025. In its preamble, Permen ESDM No. 10/2025 states that "to reduce dependence on fossil energy, achieve sustainable development targets, and provide guidelines for implementing energy transition in the power sector, it is necessary to establish a roadmap that supports the achievement of net zero greenhouse gas emissions." This rationale reflects the legal and political justification behind the issuance of the regulation.

However, the primary indicators used to guide the retirement process of coal power plants in Permen ESDM No. 10/2025 remain heavily centered on techno-economic considerations. This is evident from the regulation's emphasis on factors such as access to financing, technical lifespan of the power plants, and operational efficiency as the main criteria in determining the timeline and mechanism for coal power plants retirement. These provisions reflect a business-oriented approach, where energy transition decisions are primarily driven by the potential financial losses or gains faced by project owners, rather than the urgent need to reduce carbon emissions or protect the environment.

Meanwhile, environmental and social aspects appear to be treated as symbolic complements—mere tokenism—within this policy. Although environmental and social impacts are mentioned, there are no concrete evaluation mechanisms or clear quantitative indicators to assess the ecological and social burdens of ongoing coal power plants operations. As a result, considerations such as public health, air pollution, and community impacts are subordinated to technical and financial priorities. This indicates that the energy transition policy outlined in the regulation has yet to fully center ecological and social justice in decision-making processes, and instead continues to prioritize project-level economic interests.

ANALYSIS

Weak Legal Binding Power of Coal Power Plants Retirement Provisions

Article 12 of Ministerial Regulation of Energy and Mineral Resources (Permen ESDM) No. 10 of 2025 states: “In the event that funding support is available, the implementation of the Accelerated Retirement of PLTU operations must be preceded by a study on the Accelerated Retirement of coal power plants operations.” The use of the phrase “In the event that funding support is available…” indicates that the authority granted by this regulation is facultative (facultatief bevoegdheid), characterized by the presence of discretion in executing the authority. In administrative law doctrine, such authority allows the government to act but does not impose an obligation to do so.

Under this current normative construction, the implementation of the early retirement roadmap for coal power plants rests largely on the broad discretion of the ESDM to determine whether or not to exercise this authority. The decision to pursue the early retirement of coal power plants is contingent upon specific situational factors such as the availability of funding and other economic considerations. In other words, the government is given the option to implement the early retirement of coal power plants or not implement it at all. As such, the early retirement of coal power plants as outlined in Permen ESDM No. 10 of 2025 is not a mandatory agenda that must be prioritized by the government.

Inconsistencies in Energy Transition Policy

Normatively, the issuance of Permen ESDM No. 10 of 2025 is a mandate derived from Presidential Regulation (Perpres) No. 112 of 2022. Unfortunately, a study conducted by the Center of Economic and Law Studies (CELIOS) in collaboration with the Indonesia Cerah Foundation in 2023 found that the energy transition promoted by the government through Perpres 112 of 2022 has not effectively accelerated the shift to renewable energy as a replacement for fossil fuels. In fact, the regulation still allows for the continued use of coal power plants under loose and unmeasurable criteria.

As a result, it is unsurprising that the development of Indonesia’s renewable energy mix has progressed at a sluggish pace. The average annual increase in the national energy mix from 2021 to 2024 was only around 0.65%ough the government revised its renewable energy mix target from 23% by 2025 to a more modest range of 17% to 20%, the slow growth rate makes even this reduced target difficult to achieve. One of the main reasons for this stagnation is that current regulations on energy transition still allow the continued use of dirty energy, which is perceived to be more economically viable and profitable.

Like the saying “the apple doesn’t fall far from the tree,” the energy transition scheme outlined in Permen ESDM No. 10 of 2025 continues to reflect the government's ambivalent stance toward a genuine energy transition. On one hand, the government expresses its intention to shift from fossil fuels—labeled as dirty energy—to cleaner, renewable energy sources. Yet, at the same time, Article 6 paragraph (2) of the regulation still leaves room for the continued operation of coal power plants. Moreover, Article 2 paragraph (2) points a and c, as well as Articles 4 and 5, also outline schemes for utilizing electricity generated from the extraction of natural resources such as forests and natural gas—sources whose externalities are not significantly different from those of coal power plants.

Lack of Public Participation and Transparency

The enactment of Presidential Regulation No. 112 of 2022 on the Acceleration of Renewable Energy Development for Electricity Supply in September 2022 marked a commitment to promote the energy transition. One of the key mandates of this regulation, as stipulated in Article 3, is the development of a roadmap to accelerate the retirement of coal power plants. However, the formulation process has been plagued by serious issues, particularly the lack of public participation and transparency, which ultimately undermines the quality and legitimacy of the resulting roadmap.

One of the core issues lies in the absence of clear, definitive, and standardized procedures in the roadmap’s formulation process. A 2024 study by CELIOS found that no procedural framework governs the drafting process, either in Presidential Regulation No. 112 of 2022 or in its derivative documents. The regulation does not delegate authority to the ESDM to establish technical procedures, resulting in a process carried out without operational standards that would ensure openness, accountability, and meaningful participation. This lack of procedure increases the risk of policy disorientation, non-transparent formulation, and weak public oversight, all of which may hinder the primary goal of a sustainable energy transition.

The urgency of developing a roadmap based on scientific, inclusive, and comprehensive principles is inseparable from the government’s responsibility to ensure that the energy transition considers legal, environmental, public health, social, and economic dimensions. In this context, the existence of detailed and binding procedural guidelines is essential for maintaining consistency throughout the planning process. Such procedural standards are already in place in other energy sector planning documents, as stipulated in: a) Presidential Regulation No. 1 of 2014 on Guidelines for the Preparation of the National Energy Plan; b) Ministerial Regulation No. 8 of 2021 on Procedures for the Preparation of National and Regional Electricity Plans; c) Ministerial Regulation No. 10 of 2019 on Procedures for the Preparation of Electricity Supply Business Plans.

These regulations underscore the importance of procedural frameworks in energy sector planning to avoid conceptual errors and implementation inconsistencies. Beyond the absence of standardized procedures, the formulation of the roadmap for accelerating coal power plants retirement has also been characterized by a severely limited degree of transparency. Between 2022 and 2025, the public was not granted access to the roadmap draft and was thus denied the opportunity to provide input or critique. A CELIOS survey revealed several key stakeholders the public believes should be involved in the energy transition:

Graph.
Key Actors in Determining Energy Transition Programs

Source: Authors. N = 1,245. Respondents were asked, "In your opinion, who are the most important actors to be involved in determining energy transition programs?" For each option presented—academics, local communities, local governments, environmental CSOs, companies, state-owned enterprises (SOEs), and banks—respondents were asked to rate the importance on a scale from 1 (not important at all) to 5 (very important).

Source: CELIOS, July 2023

The implementation of energy transition requires the active involvement of state institutions, the business sector, and civil society organizations to strengthen the state's capacity to drive change in the energy sector. This study highlights that state-owned enterprises (SOEs), local governments, and civil society groups are strategic actors that must be included in the process. However, from 2022 to 2025, none of the civil society elements, local governments, environmental CSOs, or academics were involved in the drafting of the roadmap document.

The lack of involvement of these key actors in roadmap development is clearly in contradiction with Article 3(a) of Law No. 14 of 2008 on Public Information Disclosure, which affirms the right of citizens to know the planning of public policy-making, public policy programs, and the decision-making processes, including the reasons behind them. Moreover, Law No. 13 of 2022 on the Formation of Legislation also affirms the principle of meaningful participation, whereby the public has the right to be heard, the right to be considered, and the right to receive an explanation.

Risk of Bias in the Coal Power Plants Decommissioning Study Led by PLN

The appointment of PT PLN (Persero) as the primary party responsible for preparing the study on accelerating the decommissioning of coal power plants, as stipulated in Article 12 of the Permen ESDM No. 10 of 2025, raises serious concerns regarding energy transition governance in Indonesia. Although there is a provision allowing PLN to use independent institution studies as supplementary references, this optional aspect does not change the fact that PLN maintains absolute dominance in the study preparation process.

The main issue in selecting PLN as the lead institution lies in the very apparent conflict of interest. PLN is not just an ordinary state-owned enterprise; it is the primary business actor in the national electricity sector, the manager of the largest coal power plants assets, and the party most affected by the accelerated shutdown of coal power plants. Entrusting PLN with the leadership of the study means allowing an entity with financial incentives to preserve coal power plants assets—whether for investment returns, profitability, or balance sheet stability—to define the logic framework and outcome of the acceleration study itself.

Moreover, PLN holds a dominant, if not monopolistic, position in national electricity management, granting it significant power to influence the direction and pace of the energy transition. In the absence of adequate oversight mechanisms and involvement of independent actors, this dominance risks producing biased policies that maintain the status quo.

PLN's track record in supporting the energy transition also demonstrates stagnation and a lack of progressiveness. Despite the global and national discourse on energy transition, the contribution of renewable energy in PLN's electricity mix remains far from national ambitions. From a governance perspective, such a strategic study should ideally be led by the regulatory authority, namely the Ministry of Energy and Mineral Resources, with a structure that ensures multi-stakeholder involvement: local governments, affected communities, academic institutions, civil society organizations, independent research institutions, and non-PLN private sectors. PLN's role should be limited to providing technical data and operational information, rather than serving as the main policy driver.

Energy Transition Stages That Weaken Coal Power Plants Decommissioning

Within the context of Indonesia's energy transition roadmap, the stages outlined in the document—specifically in point 4 of the annex of Permen ESDM No. 10 of 2025—require alignment with several existing policies, such as the Job Creation Law (UU Cipta Kerja), the Energy Law (UU Energi), the National Energy General Plan (KEN), the Electricity Supply Business Plan (RUPTL), and the National Long-Term Development Plan (RPJPN), all of which govern energy transition. This indirectly makes early retirement of coal power plants a last-resort option and a variable influenced by these pre-existing policies. The presence of these phased steps can be observed in the following figure.

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Table.
Steps Toward Early Retirement of Coal Power Plants According to Permen ESDM Number 10 Year 2025

Process Stage	Description
Implementation of CCS/CCUS and coal power plants Limitation	Implementation of Carbon Capture and Storage (CCS) or Carbon Capture, Utilization, and Storage (CCUS) technology in certain sectors, accompanied by restrictions on new coal power plants development.
Natural Retirement of coal power plants and CCS/CCUS Application	Existing coal power plants are retired naturally while CCS/CCUS is applied in certain sectors to reduce carbon emissions.
Continuation of Natural coal power plants Retirement	Ongoing process of natural coal power plants retirement, with a shift toward cleaner and more sustainable energy sources.
Expansion of coal power plants Retirement	Expansion of coal power plants retirement efforts by replacing them with more environmentally friendly power plants or CCS/CCUS technology to mitigate carbon impacts.

Source: Processed by the author from the Annex of Permen ESDM No. 10/2025

The initial proposal to implement CCS/CCUS technology as part of the energy transition represents a choice that potentially extends the operational lifespan of coal power plants . Although this technology holds promise in reducing CO_2 emissions, its application in Indonesia remains largely confined to research and experimental stages, burdened by prohibitively high costs and unproven efficiency on a broad scale. Consequently, reliance on CCS/CCUS as the primary step in the energy transition paradoxically slows down the phase-out of PLTUs rather than accelerating it.

Furthermore, the 'natural retirement' phase of PLTUs, which depends on CCS/CCUS for certain sectors, indicates that these power plants will continue to operate for an extended period with an indefinite postponement of their decommissioning. This situation not only prolongs the operation of coal power plants beyond the desired timeline within the energy transition framework but also reinforces dependence on fossil fuels.

Moreover, while the subsequent stages of continuing the 'natural retirement' and expanding the retirement of coal power plants signify efforts to prepare for the decommissioning of power plants, these processes remain gradual and hindered by ongoing dependence on coal power plants and existing policies. This incremental approach diminishes the urgency for a more rapid energy transition and creates space for policies that are misaligned with the transition agenda, such as those prioritizing fossil fuel–based economic growth.

Indeed, the development of renewable energy alternatives to replace coal power plants faces delays, as the government and state-owned enterprises like PLN prefer to rely on long-term solutions that are unproven and costly.

Table.
Long-Term Stages of Indonesia's Energy Transition

Energy Transition Stage	Description	Challenges Faced
Implementation of CCS/CCUS and Restriction of coal power plants Development	CCS/CCUS technology remains expensive and has not been widely proven in Indonesia. Restrictions on new coal power plants construction are insufficient to reduce dependence on existing coal power plants.	High costs of CCS/CCUS implementation. Technical and financial limitations in deployment. Restrictions on coal power plants construction are not aggressive enough to effectively reduce emissions.
Natural Retirement of coal power plants with CCS/CCUS Technology	The natural retirement of coal power plants relying on CCS/CCUS tends to be slow and insufficiently rapid in reducing emissions.	Dependence on costly and unproven technology. The transition process is too slow.
Continuation of Natural Retirement of coal power plants	The phased decommissioning process is too gradual to effectively reduce emissions quickly.	No clear deadline for coal power plants shutdown. Continued reliance on fossil fuel-based power generation.
Expansion of coal power plants Retirement	The expansion of coal power plants retirement efforts is too slow and not aggressive enough to address climate change.	Lack of urgency in confronting the worsening climate crisis. Allows continued operation of high-emission coal power plants.

Source: Processed by the Author from the Appendix of ESDM Regulation No. 10/2025

Therefore, the current transition stages tend to provide substantial flexibility for coal power plants to continue operating for longer periods, while simultaneously allowing reliance on costly and unproven technologies such as CCS/CCUS to extend their operational lifespan. Instead, Indonesia should prioritize a definitive and accelerated phase-out of coal power plants, avoiding policies that merely create the appearance of transition without substantive progress.

Moreover, the roadmap document explicitly states in its appendix that the National Electricity General Plan (RUKN) defines the acceleration of coal power plants operational retirement as conditional. This conditionality depends on factors such as international support, the basic cost of electricity supply, and the reliability of the power system. If replacement power plants are required, their capacity must exceed the projections currently outlined in the RUKN.

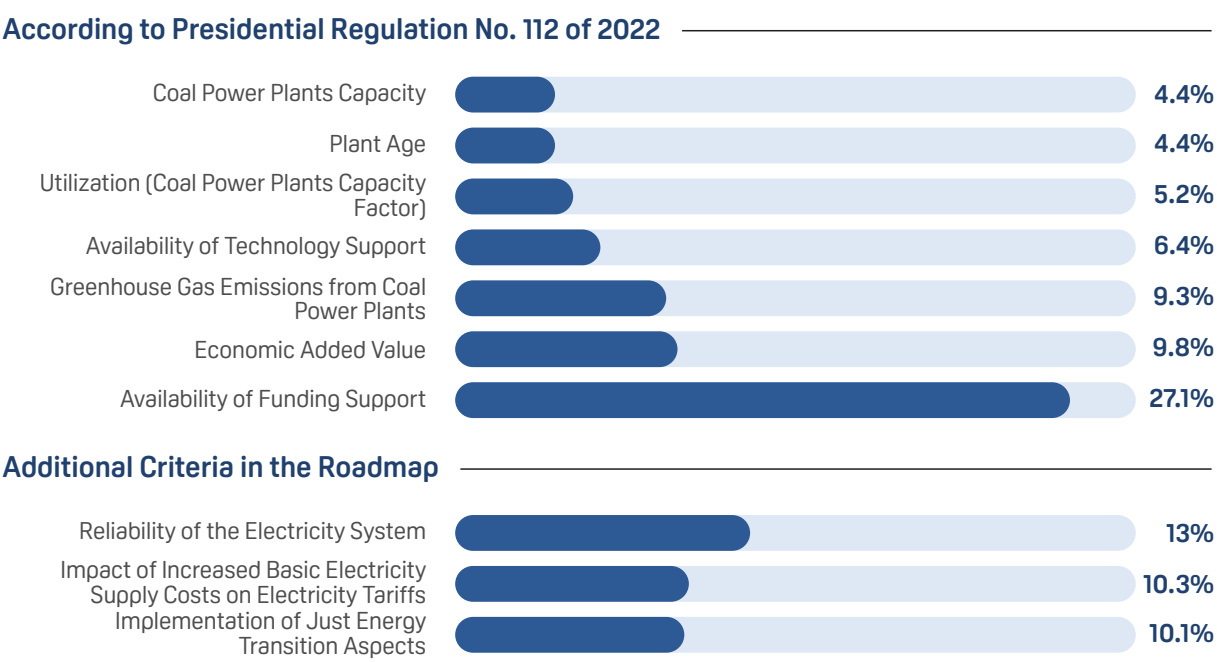
Table.
Long-Term Stages of Indonesia's Energy Transition

Aspect	Description
Nature of Coal Power Plants Closure	Conditional, dependent on the fulfillment of several requirements.
Considered Conditions	- International support (e.g., funding for energy transition) - No increase in the basic cost of electricity supply (BPP) - No disruption to the reliability of the national electricity system
Replacement Power Plant Provision	If replacement plants are necessary, their capacity must exceed the projections stated in the RUKN, adding technical and planning constraints.
Status of Coal Power Plants Closure in the Roadmap	Considered the last resort option, rather than an obligation or primary target.

Source: Compiled by the author from the appendix of Permen ESDM No. 10 of 2025

Critical Analysis of the Use of AHP Method in the Energy Transition Roadmap for the Electricity Sector

Table.
Criteria and Methodology Used for Selecting Coal Power Plants



Source: (Appendix, Ministry of Energy and Mineral Resources Regulation No. 10 of 2025)

The use of the Analytical Hierarchy Process (AHP) to compare and assign weights across various economic, environmental, and social criteria is highly inappropriate, as it implies these aspects are equivalent and can be compromised. As demonstrated in a 2023 study conducted by CREA and IESR, air pollutant emissions from coal power plants in Indonesia in 2022 were responsible for approximately 10,500 deaths due to air pollution, and generated health-related costs amounting to US$ 7.4 billion (or Rp 67.6–170.3 trillion). This study further estimated that a faster phase-out of coal usage could prevent up to 182,000 cumulative deaths from air pollution and save up to US$130 billion (or Rp 1,200–2,900 trillion) in health costs over the period from 2024 until the end of operational life of all coal power plants.

For vulnerable communities, research indicates that prioritizing the closure of coal power plants located near these populations can significantly improve air quality and public health outcomes. Therefore, the acceleration of coal power plants closures should be pursued primarily for environmental reasons and considered non-negotiable—meaning that this aspect cannot be compared or assigned a lower weight relative to other pragmatic considerations.

This stance aligns with Indonesia's commitments articulated in the Global Coal to Clean Energy Transition Declaration at the 2021 COP26 Summit. The commitment aims to accelerate the transition away from unabated coal power generation to meet the shared goals of the Paris Agreement, while ensuring benefits for workers and communities, and guaranteeing access to affordable, reliable, sustainable, and modern energy. The declaration outlines four key points: (1) accelerate the use of clean energy and energy efficiency domestically; (2) fast-track technology development and policy measures to end coal usage; (3) halt permits, construction, and government support for new unabated coal power projects; and (4) strengthen financial, technical, and social support for workers and affected communities to ensure a just and inclusive energy transition.

However, within the Ministry of Energy and Mineral Resources Regulation, ecological aspects such as greenhouse gas emissions are weighted at only 9.3%, while energy transition considerations receive 10.1%—both significantly lower than financial criteria. This indicates a marginalization of environmental concerns in the policy framework for coal power plants closures. Thus, the quantitative approach that equates human life and environmental sustainability with economic or technical factors is not only morally unethical but also scientifically inaccurate.

The implications of this flawed weighting system through AHP are profound. Erroneous weighting, where financing is deemed more important than ecological concerns, risks obscuring efforts toward early PLTU retirement. This likely results in the government prioritizing coal power plants closures based on financing availability rather than on which plants cause the greatest environmental damage and public health risks in their vicinity.

In the short term, this situation will give rise to several scenarios. First, the coal power plants that cause the greatest environmental damage will continue to operate if funding is unavailable. Second, PLTUs that have historically failed to advance energy transition efforts due to poor management and their location in less strategic areas risk being neglected in the closure scheme. Third, coal power plants closures may stagnate as the government could argue that financing is lacking—since funding is given the highest weighting. This, in turn, may generate a narrative suggesting that the government is ready to act but is hindered by limited international donor support. In reality, both technically and non-technically, accelerating the closure of coal power plants is the government's own responsibility as a measure to protect public health and the environment, rather than relying on third parties willing to provide funding.

A. Lack of Clarity on Expert Competence, Identity, and Ethical Violations in Research

The regulation is based on expert assessments but fails to clearly specify who these experts are, their educational backgrounds, experience, or institutional affiliations. This lack of transparency clearly violates the principles of sound academic research, thereby calling into question the validity of the study's findings. Furthermore, the regulation does not disclose the number of experts involved nor explain the process of data triangulation. If the study is influenced by conflicts of interest, its results are likely to be biased, potentially leading to flawed conclusions that could have severe repercussions on the quality of Indonesia's energy transition policy.

B. Limitations of AHP in Guiding Policy Direction When Proper Indexing Is Absent

The study underlying the regulation employs a Likert scale ranging from 1 to 5. However, there is a lack of clarity regarding the basis for assigning scores to each indicator. For instance, assessments of the importance of energy transition are highly susceptible to bias if each expert interprets the scale differently. Panelists might assign different values—such as 3, 4, or 5—to the significance of energy transition based on their subjective views. Consequently, the conclusions drawn from such inconsistent scoring are likely to be flawed.

C. AHP Is Inappropriate for PLTU Closure Because Environmental Aspects Must Be the Primary Prerequisite

The government should adopt a sequential filtering approach. For example, several studies highlighted by Peter Henderson et al. suggest that decision-making systems based on elimination can effectively identify potential adverse impacts. Applying a stepwise elimination principle to the closure of coal power plants involves filtering units based on specific criteria in sequence, as demonstrated in research studies. First, Achmed Edianto described collecting historical data, identifying factors influencing retirement age, developing a random forest regression model, and applying this model to individual coal power plants units. Second, N. Mayfield prioritized coal power plant closures based on health impacts and social equity considerations.

For example, the government could determine whether a coal power plant qualifies for closure by assessing its environmental impact using several key quantified indicators (thresholds), such as greenhouse gas emissions, pollutant intensity, land use intensity, and the plant's operational age. If a coal power plant exceeds the environmental impact thresholds, it would automatically qualify for early retirement. Following the environmental criteria, subsequent thresholds could be applied, such as social factors (for instance, whether the coal power plant is located in a remote area, the availability of replacement options in that region, and the associated economic impacts), followed by other relevant aspects.

Waiting for Funding Availability to Shut Down Coal Power Plants: A Paradigm Error

The development of the Energy Transition Roadmap for the Electricity Sector remains far from expectations and lacks ambition. The funding availability component in the AHP, which carries a weight of 27.1%, gives rise to several problems, namely:

1. Has the government adequately considered that operating coal power plants are already imposing substantial economic and financial losses on the state? Without waiting for the availability of new funding, some coal power plants could be shut down immediately to mitigate these financial burdens. For example, coal power plants that contribute to oversupply on the Java-Bali power grid.

2. Environmental costs—including air pollution, greenhouse gas emissions, and public health expenses—appear to be deprioritized, as reflected by their lower weighting compared to funding availability. Is there truly no option to decommission coal from coal power plants by accounting for the costs already borne by the public and the environment, rather than waiting for new funding sources?

3. Regarding funding availability, since the employed model is loan-based, the government will bear a direct or indirect financial burden. In addition to persistently high interest rates, the government's existing debt limits fiscal space.

4. Moreover, the Ministry of Energy and Mineral Resources, within the Energy Transition Roadmap, has opened the door to "false solutions" such as co-firing and retrofitting coal plants, which in reality delay the retirement of coal power plants. Are investors more inclined to finance these ineffective solutions rather than the actual decommissioning of coal plants? For instance, the Asia Zero Emission Community (AZEC) initiative from Japan does not explicitly include a coal power plants retirement scheme in its cooperation with the Indonesian government.

5. To date, international funding sources—including loan mechanisms under the Just Energy Transition Partnership–Energy Transition Mechanism (JETP-ETM)—have been slow to execute the early retirement of the Cirebon-1 Coal Power Plants. Bureaucratic delays, slow regulatory processes, and the government's narrative that coal power plants retirement harms state finances exacerbate the situation. Given the current global macroeconomic climate, is it realistic to expect international funding to prioritize financing coal power plants retirement over alternative options?

6 The government's efforts to secure funding tend to be passive and lack creativity. Options such as utilizing debt swaps for coal-asset retirement or debt swaps for energy transition have never been part of negotiations with creditors. In fact, the definition of funding availability outlined in the roadmap does not necessarily imply fresh money, the state budget (APBN), or new loans, but can also be achieved through reducing the existing debt burden of the government and PLN.

7 Funding availability consistently becomes a barrier as the coal-based sector continues to receive substantial incentives and government support, such as the Domestic Market Obligation (DMO) for coal and the postponement of carbon tax implementation. These factors make renewable energy projects and the retirement of coal power plants financially unattractive to investors.

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RECOMMENDATIONS

This study recommends that the Government, specifically the Ministry of Energy and Mineral Resources, undertake a thorough review and revision of Permen ESDM No. 10 of 2025 concerning the Road Map for the Energy Transition in the Electricity Sector, incorporating the following provisions:

1. Broaden the involvement of key stakeholders in the revision of Permen ESDM No. 10 of 2025.
2. Remove the phrase “In the event of available funding support…” as stated in Article 12, Paragraph (1), which grants the Government discretionary authority to implement early retirement of coal power plants.
3. The coal power plants retirement assessment should be led by independent research institutions or universities, rather than PLN, to avoid conflicts of interest.
4. The phased structure outlined in Permen ESDM 10/2025 needs revision, with early retirement of coal power plants positioned as the primary step—not the last option—to accelerate decarbonization.
5. Correct the use of the AHP method in energy policy by prioritizing environmental and health aspects, which should not be equated with economic or technical considerations.
6. Avoid reliance on expensive and unproven technologies such as CCS/CCUS. Instead, focus on renewable energy solutions.
7. The government should position the coal power plants phase-out roadmap as a strategic guiding document, rather than a secondary one following laws such as the Job Creation Law, Energy Law, National Energy Policy (KEN), National Electricity General Plan (RUKN), and Electricity Supply Business Plan (RUPTL), which currently do not push for a progressive energy transition.
8. Implement clear deadlines for the early retirement of coal power plants, aiming to accelerate the transition to clean energy and significantly reduce environmental impacts.

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