Coal Power Dynamic: The Double Effect Principle on Indonesian Energy Policy Legitimation

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Abstract

The year 2020 marked a significant moment for Indonesia with the controversial removal of "fly ash and bottom ash" (FABA) as toxic substances from its hazardous waste lists associated with coal burning. The conflicts arising from coal burning encompass socio-ecological, economic, health, and injustice issues. These issues include the destruction of ecosystems, health problems, and economic inequality from business-as-usual impacts. As a major user and producer of coal power plants, Indonesia typically prioritizes cost-efficiency. However, it often overlooks the negative externalities of consumption as undesirable effects. This problem is compounded by policies aimed at promoting coal production, resulting in an annual production of 10-15 million tons of less-managed FABA. This article reviews the "double effect" principle and analyzes government discourses and policies related to environmental protection and management through the "grammar of legitimation". It explores how these policies are connected to the growing negative consequences associated with coal-fired operations. Additionally, it delves into the escalating conflicts surrounding the coal-fired issue, which tend to generate cascading effects due to the government's "excess tolerance." An evaluation of socio-ecological management is imperative to prevent gradual and sudden-onset adverse effects, including climate crisis risks and unsustainable development.

Keywords Coal-fired Power Plant, Double Effect Principle, Environmental Discourses, Grammar of Legitimation

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1. Introduction

Coal – is a dirty and non-renewable material. Despite these two environmental inefficiencies, coal has prominently positioned itself as Indonesia's primary energy source and economic power. It has been a leading coal producer, a significant consumer, and a global exporter, essentially shaping the Indonesian government's energy policy framework. Two of the most significant policies are the removal of "fly ash and bottom ash (FABA)" from the list of hazardous wastes generated by coal burning (FABA policy) (Aqil, 2021) and the latest mineral and mining law. Under these industry-centered regulations, the government provides massive support through streamlined processes for coal businesses, issuing permits to operate with ease and extending them further.

FABA (Fly ash - Bottom ash) are inherently hazardous substances and pose a significant potential threat to human health. These materials are generated from coal-fired power plants, and their unmanaged excess can adversely affect the surrounding environment, including human safety. Prolonged exposure to FABA can lead to various diseases, ranging from respiratory conditions to cancer. The toxic materials within FABA include heavy metals, polycyclic aromatic hydrocarbons, silica, among others (Alterary & Marei, 2021; Hagemeyer et al., 2019; Munawer, 2018; Radić et al., 2018). The increasing number of coal-fired generators in Indonesia exacerbates human and environmental concerns, with FABA being one of the contributing factors.

Despite Indonesia's commitment to protecting the environment and mitigating the impact of climate change (Wijaya et al., 2017), the country continues to rely on coal mining and its power generation as a significant economic resource. This lucrative industry has propelled Indonesia to become the third-largest coal producer in the world (Baskoro et al. 2021; Hudaya & Madiutomo, 2019). Within this context, several conflicts arise, including concerns related to human health, environmental degradation, and the livelihoods of people residing near coal power generators. Nonetheless, Indonesia is expanding its efforts to create more economic opportunities from this less environmentally-friendly energy source.

From an economic perspective, the government argues that using coal will help make Indonesia energy-independent while also turning it into an energy exporter for others (Susanto & Admi, 2021). However, these economic objectives are often at odds with other concerns, particularly social and ecological issues. The 77 coal power plants operating in Indonesia have consistently been sources of tension, with cascading effects such as water pollution, ocean acidification, damage to aquatic ecosystems and wildlife, health problems (particularly coal workers' pneumoconiosis or black lung disease), and economic inequality. In a similar vein, considering the affordability and competitiveness of coal, its abundant resources, and the high energy demand, coal-fired power plants continue to proliferate as a promising sector, attracting considerable business-as-usual

investment. Taking a closer look at Indonesia's energy consumption, President Director Zulkifli Zaini of the Indonesian State Electricity Company (PLN) predicts that Indonesia will require at least 119.19 million tons of coal in 2022 (Munthe, 2021). However, the country remains heavily reliant on coal power despite global efforts to shift towards renewable energy sources (Cornot-Gandolphe, 2017).

In this study, we refer to the principle of double effect as an ethical consideration in the context of coal-fired power plant development, considering both its inseparable benefits and detrimental effects. By analyzing the dynamic of coal-fired power plant-related policies in Indonesia, the authors aim to scrutinize the normalization of "externalities laxity" under economic merits while also acknowledging the conflicting impacts on other crucial aspects of life. Furthermore, this paper argues that despite the economic focus, a socio-ecological perspective is essential for managing coal-fired power plants. This work primarily employs an archival study of Indonesia's relevant coal/energy-related laws, regulations, policies, and studies. We have primarily used discourse analysis to assess the energy trends in Indonesia from the official government perspective.

2. Results and Discussion

This section focuses on three key points. It begins by emphasizing Indonesia's coal-fired development and its execution. Next, it highlights the 'nature' principle of the double effect, which is reflected in coal power production activities and their positive and negative impacts. Finally, it analyzes the government's behavior and dynamics in establishing legitimacy for coal power-related activities in Indonesia.

3. The Indonesian Coal-Fired Power Plants: The Practice and Consequence

Despite environmental concerns, coal-fired power plants in Indonesia are receiving increasing attention due to their causal effects on several significant socio-ecological aspects. The growing number of coal power installations reflects Indonesia's heavy reliance on this dirty and non-renewable energy source, which is closely associated with multifaceted problems in the socio-ecological, economic, and short-/long-term domains.

The year 2020 marked a significant shift for the Indonesian government with the introduction of "Peraturan Pemerintah Republik Indonesia Nomor 22 Tahun 2021 Tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup" or Government Regulation of the Republic of Indonesia No. 22 of 2021 concerning the Implementation of Environmental Protection and Management. This policy officially removed FABA from the list of toxic materials. Companies using such materials are now subject to regulations aimed at enhancing their responsibility for secure management and minimizing adverse effects (Prasetiawan, 2021). With these new developments in Indonesia's energy policy, controversy has been

intensifying and persisting in academic discussions, among coal-fired power plant businesses, society, and the government and its bureaucracies.

While government officials claim that the removal of FABA from the toxic list is backed by scientific knowledge and research (Lumbanrau, 2021), this paper contends that a reasonable justification demands thorough and extensive measurements and considerations in the decision-making process. It is crucial to emphasize that despite the potential for energy cost-efficiency through coal consumption in Indonesia, there are critical regions in the country where the presence of coal-fired power plants has led to residents experiencing pressing issues related to the environment and health (Finkelman et al., 2021). Addressing this concern requires considering the alterations within the spatiotemporal context of coal-fired operations.

Greenpeace Indonesia, a civil society and non-governmental organization focusing on environmental concerns, emphasized in a 2015 report based on joint research with Harvard University that data indicates at least an estimated 6,500 thousand people in Indonesia have died as a consequence of coal-fired power plants (Greenpeace Indonesia, 2015). The primary causes of these deaths include intoxication and the threatening effects of exposure to fine particle pollution (PM 2.5), as well as mercury, CO2, NOx, and SO2 emissions from coal-fired power practices. These substances not only contribute to health issues but also play a role in climate change and the climate crisis, exacerbating health, social, and environmental problems.

Indonesia’s policy-making processes tend to involve inter-governmental sectors with limited civil society involvement. This indicates that the policy-making pattern does not entirely address the perceived problem (Blomkamp, 2018). Effective policy development should follow a structured problem-solving process, beginning with identifying actors and issues and formulating sound policies. While seeking a solution is a crucial step, it’s undeniable that civil societies play a critical role in the policy process. Civil society’s importance in Indonesia's energy policy lies in its financial support through grants and aid, benefiting both the government and the larger community.

Indonesia predominantly follows a government-oriented approach at both regional and national levels. This state-oriented budgeting process significantly affects policy design related to the central issue and the government's overall budgeting process. In the context of Indonesia’s coal-fired power plant policy and various related issues, coal power encompasses aspects of energy, economics, health, the environment, and society. However, the policy refinement in this context is somewhat limited. The government formally designs policies but engages less in informal procedures. The hierarchical nature of policy-making in Indonesia, driven by factors like power, position, capacity, and relationships, plays a crucial role. In fact, policy-making is more than just planning and legislating, it necessitates public engagement to encompass the entire spectrum of governmental dynamics,

including issue determination and the provision of viable alternatives as solutions. Providing data on health issues, environmental degradation, and economic disparities, all of which are unfolding without concrete public engagement, highlights the shortcomings in policy implementation.

4. The Double Effect Principle Effects and Indonesian Coal Energy

The Double Effect Principle (DEP), coined by Thomas Aquinas, can be understood as the permissibility of unintended externalities resulting from a morally sound course of action (Quinn, 1994). This principle offers both an ethical explanation and justification, but it also presents a paradox. The Double Effect Principle has been developed and is feasibly applied in various disciplines, including medicine, development, and public policy. It can be challenged by considering the proportionality between the intended and unintended consequences of an action.

Despite the withdrawal of several foreign investors in coal power projects (Yuxuan & Renaldi, 2022), including those from Japan, South Korea, and China, Indonesia continues to expand its coal power stations. The country accommodates ongoing projects with policy relaxations, notably the removal of FABA from the list of hazardous substances. Even without a comprehensive cost and benefit analysis, Indonesia's policies appear to be increasingly favoring coal investments, both local and foreign, at the potential expense of social and environmental considerations.

In addition to the estimated number of victims, including premature deaths caused by these power plants, the likelihood of this number increasing due to ongoing project development is a cause for concern.

Table 1: Total installed capacity, Indonesia State Electricity Company based on the type of power plants

No.	Type of Power Plants	Per 2020
1.	Hydropower	5513
2.	Diesel	5388
3.	Gas power	5174
4.	Steam Gas	11993
5.	Microhydro	204
6.	Geothermal energy	1979
7.	Solar	18
8.	**Steam power (coal-fired)**	**32920**
9.	Other sources	296
	Total installed capacity	65236

Source: Authors' representation utilizing data from the Central Bureau of Statistics of Indonesia (2020)[3]

The Double Effect Principle sheds light on the government's behavior when dealing with externalities in policy design, particularly concerning development projects. However, despite the high economic benefits attributed to coal power, data reveals that this sector contributes a mere 5% to the national GDP (Greenpeace Indonesia, 2015). In contrast to the intended effects, many people living within and around coal power station areas complain about their health, environmental, and economic conditions.

Within the health aspect, beyond the recorded deaths, continuous air pollution can lead to exponential and both gradual and sudden health concerns. In the long term, coal power's relentless operation in massive projects is likely to yield harmful results. Notably, coal power has the potential to contribute to water and air pollution by emitting fine particles from hazardous substances into the air. Moreover, the coal-washing process demands a massive volume of water, which may lead to water scarcity or, worse, contamination of water sources.

The extractive and exploitative nature of coal mining activities contributes to the frequent occurrence of landslides and flooding, leading to two major, recurring human-made disasters. Heavy metal sedimentation also causes long-term health and environmental effects. These critical perspectives highlight the socially destructive activities under the umbrella of coal-fired power plant operations, which have severe consequences. It's important to note that when these activities intensify,

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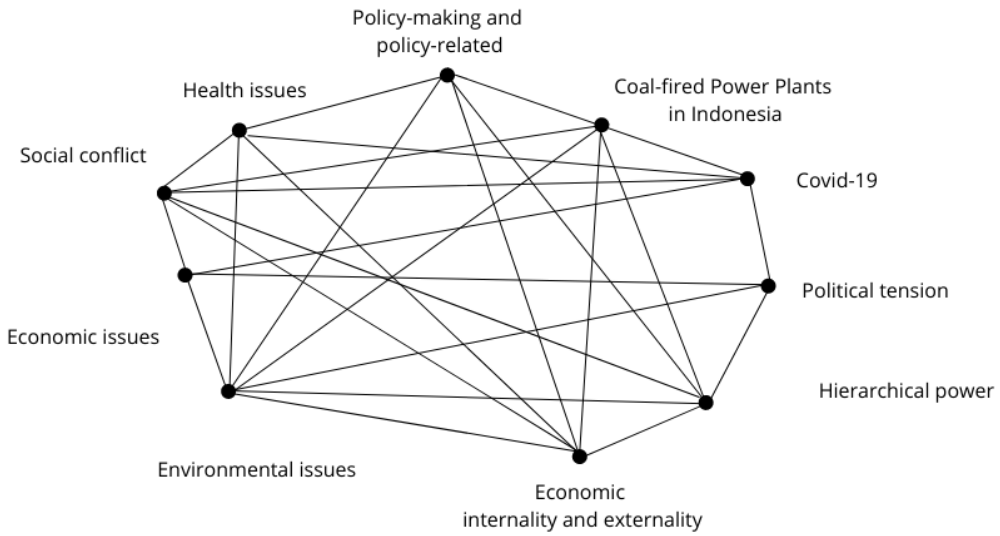
the potential for a broader socio-ecological concern emerges, encompassing issues such as land concession and transformation, land conflicts, social conflicts, child exploitation, and high unemployment rates (Greenpeace Indonesia, 2015).

Figure 1: The inseparable link among the phenomena: Consequences of coal-fired power plants (including COVID-19 pandemic)



Source: Authors (2022)

The node-link diagram above represents the inseparable connection between the issues arising as consequences within the context of coal-powered energy in Indonesia. While there is no explicit statement indicating that Indonesia is applying the DEP, this work has scrutinized it through an examination of policy-making processes and policy products related to coal energy.

From the explanations above, it becomes evident that the cost-benefit analysis of operating and relying on coal power generates more detrimental effects than beneficial ones. Its important to acknowledge that all these points are framed based on good design at the implementation level, but they must also grapple with the fact that there are several obstacles to avoiding unintended consequences.

The necessity to mainstream the practice of (ab)normalizing the double effect is imperative to minimize detrimental calamitous consequences, particularly for society. This can be achieved through the reform of policy-making processes, increased engagement with society as the beneficiaries of applicable policies, and collaborative efforts to ensure that every aspect of policy balances one another.

In the next section, the "grammar of legitimation" framework by Van Leeuwen and Wodak (1999) serves as a potential lens for examining the behavior of the Indonesian government in its pursuit of legitimacy. By focusing on the

following four elements, this study unpacks the justifications for coal power as a national economic target, as a means of achieving energy independence, and examines the neglect of its unintended side effects. The analysis will commence with a) authorization; b) rationalization; c) moral evaluation; and d) mythopoesis.

5. Authorization

At this level, authorization is closely linked to the actors who wield and oversee power. Legitimation is expressed through formal legal customs as embodied in official and regulatory frameworks. In this particular context, actors refer to stakeholders such as the Ministry of Energy and Mineral Resources (ESDM), its related government agencies, coal companies, and investors, among other influential entities (Ordóñez et al., 2021). Formal laws and regulations essentially grant these actors, particularly within government sectors, the authority to optimize and extract coal energy to fulfill the national objectives of meeting energy needs and fostering economic opportunities through investments.

For example, Presidential Regulation No. 68 of 2015 established the Ministry of Energy and Mineral Resources, while Minister of Energy and Mineral Resources Regulation No. 15 of 2021 delineates the Organization and Work Procedures of the Ministry of Energy and Mineral Resources. These regulations emphasize the role of the ministry in 'administering government affairs in the field of energy and mineral resources to assist the President in governing the state.' Their functions include formulating and determining policies and regulations related to oil and gas, electricity, minerals and coal, new energy, renewable energy, energy conservation, and geology. These regulations underscore the formal and legal entitlement that reinforces the authority of these actors to carry out their tasks, particularly in the realm of coal energy.

As a Rechtsstaat (a state governed by the rule of law), the Indonesian government can promulgate rules and regulations within the bounds of the law (Lev, 1978), specifically concerning coal energy and mining activities, by enshrining these agendas into law and policies. The government has full authority and the right to design and redesign the set of regulations, whether they are codified or uncodified. This reflects the Indonesian government's commitment to ensure continuous coal power production and a thriving market by utilizing its authority to control coal power development. Furthermore, having a state-owned electricity company underscores the government's central role and capacity to monopolize electricity production throughout various regions in Indonesia. The Indonesian state-owned electricity company plays a vital role in shaping the practicality of energy policy, and its direction can also be influenced by the international market (Paryono et al., 2017). Therefore, despite the dilemmas posed by coal power energy, particularly with socio-ecological ramifications, Indonesia legitimizes its coal power expansion and development in the name of economic objectives.

6. Rationalization

Legitimation through rationalization involves the logical conceptual framework used as a reference to validate and justify legitimate actions, often by relying on scientific-based knowledge. In justifying the operation of coal-fired power plants, the Indonesian government aligns with the objective of achieving substantial material benefits and contributing to the economic welfare of constituents and society at large.

However, as coal energy production comes with significant costs, including social and ecological impacts, and may lead to community conflicts and environmental degradation, the government strives to make coal projects sound legal and generally acceptable through various rationalizations. One notable point of contention is the exclusion of FABA (fly ash and bottom ash) from the hazardous waste list resulting from coal mining activities.

The so-called "scientific-based" justification, as articulated by Rosa Vivien Ratnawati, Director General of Waste and B3 Waste Management (PLSB), appears illogical, as leaving out FABA as hazardous waste seems inconsistent with its classification as one of the coal combustion residuals (CCRs), which has the potential to pose threats to humans and the environment. A research report by Physicians for Social Responsibility (PSR) (n.d.) further explores this issue:

> *"…coal ash typically contains heavy metals including arsenic, lead, mercury, cadmium, chromium, and selenium, as well as aluminum, antimony, barium, beryllium, boron, chlorine, cobalt, manganese, molybdenum, nickel, thallium, vanadium, and zinc. How dangerous is coal ash to humans? The Environmental Protection Agency (EPA) has found that living next to a coal ash disposal site can increase your risk of cancer or other diseases. If you live near an unlined wet ash pond (surface impoundment) and you get your drinking water from a well, you may have as much as a 1 in 50 chance of getting cancer from drinking arsenic-contaminated water. If eaten, drunk, or inhaled, these toxicants can cause cancer and nervous system impacts such as cognitive deficits, developmental delays, and behavioral problems. They can also cause heart damage, lung disease, respiratory distress, kidney disease, reproductive problems, gastrointestinal illness, birth defects, and impaired bone growth in children."*

With the facts presented above, the scientific rationale for excluding FABA as a hazardous substance highlights a lack of transparency in information disclosure, as the intersection between economic, health, and environmental concerns becomes increasingly evident. Nevertheless, given the government's authority and power, it is likely to adhere to its rationale to maintain legitimacy.

7. Moral Evaluation

This level can be referred to as the "power of value." Moral evaluation involves weighing various critical considerations and intentions to support the merit of a specific action. In this case, the abundance of coal as a natural resource and its potential for power generation and development projects can be seen as having significant merit in enhancing the socio-economic well-being of society. As an example, consider the following excerpt that provides a moral evaluation of the use of coal:

> *"Minerals and coal located within the territory of the Unitary State of the Republic of Indonesia are non-renewable natural resources and wealth, considered as gifts from the Almighty God. These resources play a vital role in sustaining the livelihoods of many people and are under the control of the state to facilitate sustainable national development, ultimately aiming to ensure the welfare and prosperity of the people in a just manner."*[4]

The statement mentioned above is a consideration outlined in the Republic of Indonesia Law No. 3 of 2020, which amends Law No. 4 of 2009 on Mineral and Coal Mining. This statement signifies the government's effort to manage coal as a national energy source and support economic development simultaneously.

In addition to the written regulation, the current situation in Indonesia aligns with the same objective, albeit in a somewhat more chaotic manner. According to a government evaluation issued in January 2022, Indonesia is facing a coal capacity crisis. This deficit has prompted the attention of key figures, including the Minister of State-Owned Enterprises (BUMN), Minister of Energy and Mineral Resources (ESDM), Minister of Trade, Minister of Transportation, Attorney General's Office, and Financial and Development Supervisory Agency (BPKP), leading to plans for monthly evaluations of the Domestic Market Obligation (DMO) for domestic coal supply (Guitarra, 2022). Additionally, the government continues to export coal to stabilize the national economy after fulfilling domestic needs.

Furthermore, coal power is expected to contribute significantly to Indonesia's GDP due to its economic potential. However, this fervor for coal is not without its consequences, both short-term and long-term. The government's current focus is on reorganizing coal export-import activities, as outlined in the Letter of the Directorate General of Mineral and Coal Number B-1605/MB.05/DJB.B/2021, issued on December 31, 2021 (Putri, 2022). This follows the increasing use of coal power to meet the national electricity demand for household consumption and industrial sectors (see Table 1).

Unfortunately, these evaluations have given rise to bitter dissensions. For instance, the collision between economic interests and socio-environmental

[4] Unofficial translation

concerns, as exemplified by the Omnibus Law that came into force in 2020 (along with other policies and regulations related to coal power (see Appendix), has sparked significant tension within society, drawing the ire of environmental activists and their supporters.

The simplification of the environmental impact assessment process for businesses has raised concerns and cast doubts on the government's commitment to environmental protection. According to the annual performance report by the Indonesian Ministry of Energy and Mineral Resources, coal remains a reliable source for national energy security. In 2020, there were 882 active coal companies, and the total production for that year amounted to 560,741,905 tons (Directorate General of Mineral and Coal, Ministry of Energy and Mineral Resources of the Republic of Indonesia, 2020). This indicates that a significant number of coal producers are operating without much regulatory burden, while the intersection between the economic benefits generated by coal power and health issues in the context of the pandemic continues to have severe effects.

8. Mythopoesis

While socio-ecological issues persist due to coal mining operations, the enthusiasm for long-term coal power projects remains one of the top national priorities for the Indonesian government. Mythopoesis is the stage where the gained legitimation leads to a narrative based on the achieved goals and future projections.

Despite the global transition toward renewable and clean energy, Indonesian coal-fired power plants have a long history that can be traced back to a progressive journey in coal energy management, beginning in the 1960s (Asian Development Bank, 2020). During that period, the government officially opened up the mineral and coal mining sectors to foreign investment. Years later, in 1981, the state-owned mining company entered into its first Coal Cooperation Agreements with contractors. With the heyday of coal mining activities in 1999-2001, the central government decentralized its power to the local level and restricted coal mining in forest areas. As a country heavily reliant on coal power, Indonesia established the Domestic Market Obligation (DMO) in 2009 to prioritize meeting national needs over export activities, accompanied by the shift from Coal Contracts of Work to the licensing system (Hadityo, 2022; Karyza, 2022; Melati et al., 2022). Furthermore, the Indonesian government introduced a set of regulations for reclamation and mine closure in 2010 (Finucane et al., 2011). In 2012, mayors and regents were temporarily tasked with suspending new license issuance, a responsibility that was officially revoked by the central government in 2014. In 2015, the introduction of Clean and Clear served as an audit mechanism for reviewing all mining activity licenses.

Despite these regulatory developments, Indonesia continues to significantly extract coal for national electricity (Nangoy & Suroyo, 2021; Simon, 2023) and

aims to make contributions to the national GDP through exports and foreign investment (Hamdi & Adhiguna, 2021; Yuniar, 2021). As elucidated earlier, coal power is designed to generate economic benefits but generates detrimental effects as part of an interlinked causal chain. With substantial reference, this paper employs the DEP as a critical framework to examine relevant policies in Indonesia. Thomas Aquinas was the first to introduce and define DEP as a principle in decision-making where the process and projects are designed with good intentions, yet the foreseeable harmful effects are produced and come along with it (Uniacke, 2013). When considering this principle, the undeniable harmful effects can be categorized as 'normal,' as part of the ethical factors of the intended project.

9. Conclusions and Recommendations

The applicable policies are responsible for ensuring that specific addressed issues benefit the common good. All processes must be aligned, from problematization to implementation and evaluation stages. The case of coal-fired power plants in Indonesia demands a comprehensive analysis of the costs and benefits while emphasizing public engagement in the legitimization process of coal-fired power plants. This is crucial because the party benefiting from and being affected by coal power operations is the larger community. Rather than solely an economic-oriented discourse, the coal power project must consider people's needs, sustainable projection in short-term and long-term run. Reflecting on the changing circumstances is key to understanding the interconnected issues between coal power, humans, and the environment within the broader context of health and economic concerns.

The grammar of legitimization indicates the systematic way the Indonesian government justifies its course of action in developing and expanding coal power plants, despite their significant consequences and the paradox of clean energy transition efforts. This aligns with the Double Effect Principle (DEP), which illustrates the Indonesian government's act to normalize the externalities of coal power production, even though questions persist regarding its scale. Furthermore, this research leaves room for further analytical development, particularly in examining exogenous factors such as foreign investment and foreign influence on the transition to renewable energy.

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Appendix: List of current applicable Indonesian Laws concerning Coal energy-related (as of 2023)

No.	Laws and Regulations	Enforcement
1	Article 20, Article 21, and Article 33 paragraph (2) and paragraph (3) of the 1945 Constitution of the Republic of Indonesia	1945
2	Law Number 1 of 1967 concerning Foreign Investment	1967
3	Law Number 11 of 1967 on Mining	1967
4	General Policy on Energy	1980
5	Government Regulation Number 75 of 2001 concerning Delegation of Mining Concession to Local Government	2001
6	Law Number 30 of 2007 concerning Energy	2007
7	Law Number 4 of 2009 concerning Mineral and Coal Mining	2009
8	MEMR Circular Letter Number 03 of 2009 on Mineral and Coal Mining Permit	2009
9	MEMR Regulation Number 34 of 2009 concerning the Domestic Market Obligation	2009
10	Government Regulation Number 22 of 2010 concerning Mining Areas	2010
11	Government Regulation Number 23 of 2010 concerning Implementation of Mineral and Coal Mining Business Activities	2010
12	Government Regulation Number 55 of 2010 concerning Mineral and Coal Mining Direction and Supervision	2010
13	Government Regulation Number 78 of 2010 concerning Reclamation and Mine Closure	2010
14	MEMR Circular Letter Number 08 of 2012 concerning Suspension of Issuance of New IUP until the Stipulation of Mining Area (WP)	2012
15	Government Regulation Number 9 of 2012 concerning Types and Tariffs of Non-tax State Revenue Applicable in the	2012

No.	Laws and Regulations	Enforcement
	Ministry of Energy and Mineral Resources	
16	MEMR Regulation Number 37 of 2013 concerning Determination of Mining Areas	2013
17	MEMR Regulation Number 7 of 2014 concerning Mine Reclamation & Closure	2014
18	Government Regulation Number 79 of 2014 concerning National Energy Policy	2014
19	Coordination and Supervision Mechanism for Mineral and Coal mining	2014
20	MEMR Regulation Number 25 of 2015 concerning Authority Delegation for Mining License Issuance	2015
21	Presidential Regulation Number 22 of 2017 concerning the General Plan for National Energy *(Rencana Umum Energi Nasional/RUEN)*	2017
22	MEMR Regulation Number 34 of 2017 concerning licensing process	2017
23	MEMR Regulation Number 12 of 2017 concerning Utilization of Renewable Energy Resources for Provision of Electricity	2017
24	Law Number 3 of 2020 concerning amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining	2020
25	Law Number 11 of 2020 concerning Omnibus Law	2020