

The Problem of Legal Void and Government Indecisiveness Regarding Environmental Pollution and Damage by Coal Stockpiles

Ahmad Redi

ahmad_redi@borobudur.ac.id

Faculty of Law, Universitas Borobudur, Indonesia

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Abstract

Coal stockpile activities spread across various regions in Indonesia have caused serious environmental problems, especially related to air, water, and soil pollution. Although the impacts are real and ongoing, legal regulations for these activities are still tiniest, even showing a fairly crucial legal vacuum. The absence of specific regulations, binding technical standards, and overlapping authority between government agencies has resulted in weak supervision and law enforcement of coal stockpile business actors. This study uses a normative-empirical legal approach with a qualitative analysis method to examine the forms of legal vacuum in environmental management related to coal stockpiles and their implications for community and ecosystem protection. The research results indicate that comprehensive legal reform is needed, both through the formation of new regulations, strengthening the role of local governments, increasing law enforcement effectiveness, and actively involving the public in environmental supervision. The reform is crucial to realize sustainable and environmentally just mining governance.

I. Introduction

Mining activities, including coal stockpile management, place significant pressure on the environment and thus require strict application of environmental protection principles. (Fachruzzaki, 2024) The protection is crucial to preserving the quality of water, air, and soil to remain habitable for humans and ecosystems. Land clearing for mining often causes deforestation and loss of natural habitat, disrupts the hydrological cycle, and increases the risk of erosion and sedimentation of rivers. (Setiawan, 2018) In addition, without proper water management, acid mine drainage can seep into the soil and rivers, reducing water quality and increasing levels of heavy metals such as Hg, Cd, Pb, Cr, Zn, and Ni in surface and groundwater. (Ardika, 2023) Therefore, comprehensive environmental management—including water quality monitoring, waste management, and post-mining land reclamation—is a critical element in coal mining activities. (Balfas, 2015)

Specifically, coal stockpile activities pose risks that should not be ignored. Coal dust carried by the wind can pollute the surrounding air, potentially causing respiratory problems in the community, and reducing the quality of plants and soil around it (Sukandarrumidi, 2018). Runoff from uncovered stockpiles can carry sediment, heavy metals, and problematic ions such as sulfate into water bodies, causing long-term soil and water pollution. In addition, the leaching of hazardous materials into soil and groundwater can persist long after operations have ended, as toxic materials such as arsenic, mercury, and cadmium accumulate in the ecosystem. (Wahyu, 2019) Thus, aspects such as stockpile closure, dust suppression systems, water runoff control, and environmental quality monitoring are vital strategic steps to prevent environmental pollution and damage.

Mining activities, including coal mining, are one of the sectors that have a major impact on the environment if not managed sustainably (Zulkarnain, 2023). Environmental protection in mining activities is very important because this activity involves the exploitation of natural resources on a large scale, which can cause environmental degradation like deforestation, loss of biodiversity, and significant changes in ecosystems. Therefore, the principle of environmental precaution and responsibility must be an integral part of the entire mining process, from exploration, and production, to post-mining (Lusiana, 2024). Law Number 32 of 2009 regarding Environmental Protection and Management mandates that every business activity that has the potential to cause environmental pollution and/or damage must have an environmental permit, carry out an environmental impact study, and apply sustainable principles to guarantee the community's right to a healthy environment (Marfungah, 2024).

One of the paramount stages in the coal distribution chain is the stockpile activity or coal storage area before distribution. However, this activity also has great potential for pollution and environmental damage. Coal dust carried by the wind can pollute

the air and disrupt the respiratory health of the surrounding community. Apart from that, runoff from stockpiles that are not managed properly can carry coal particles and heavy metals to nearby water bodies, pollute rivers, and disrupt groundwater quality. Soil contamination can also occur due to chemical seepage from stockpile locations, which in the long term damages soil fertility and the surrounding micro-ecosystem (Herry Liyus, 2019). Ironically, these high-impact activities are often not strictly regulated in licensing and technical supervision, thus creating vulnerability to repeated and systemic environmental pollution.

In various coal-producing and distributing areas in Indonesia, coal stockpile practices often take place without adequate supervision and often do not comply with environmental protection principles (Prasetyo, 2021). Many stockpiles operate outside industrial areas that should have been equipped with adequate environmental management facilities. Most of these coal storage locations are located near residential areas, riverbanks, and even coastal areas without considering the environmental carrying capacity and holding capacity. The irregularity in the placement of these stockpiles reflects weak spatial governance and the absence of strict regulations from the government regarding the zoning of stockpile locations. In practice, most business actors only focus on logistics efficiency and production costs without prioritizing the ecological feasibility of the location used (Hartana, 2022).

Various cases of environmental pollution caused by coal stockpile activities have been recorded in a number of regions. In South Kalimantan, for example, several stockpiles around the Barito River cause sedimentation and water pollution due to runoff that carries coal waste directly into the river. A similar thing also happened in South Sumatra, where residents complained about coal dust from open stockpiles that were not equipped with a cover system or periodic water spraying, causing respiratory health problems. In coastal areas such as East Kalimantan, coal piles close to the sea also contribute to coastal ecosystem pollution due to waste runoff during the rain. Unfortunately, in many cases, the responsibility of business actors has never been strictly enforced and tends to be allowed to continue for years. (Hartana, Sejarah Hukum Pertambangan di Indonesia, 2019)

Coal stockpile business actors have a central role in determining how environmental impacts can be reduced or even worsened. However, current practice patterns show a tendency to ignore environmental obligations, both in terms of providing impact control facilities (such as sedimentation ponds, closed drainage systems, or dust covers) and in reporting and independent monitoring of their activities. Many business actors operate without valid environmental permits or use permits that do not match the location and actual capacity of their activities. (Hamidi, 2024) This discrepancy is exacerbated by weak supervision from related agencies and minimal coordination between the central and regional governments, creating a grey area that is exploited by business actors to avoid environmental obligations. Such practices not only violate the principles of good governance but also threaten the sustainability of

the environment and public health in the long term.

Until now, Indonesia has not had specific and comprehensive regulations that explicitly regulate the management of coal stockpiles, especially in terms of location, licensing, supervision, and environmental management responsibilities. The absence of specific regulations makes coal stockpile activities operate in an unclear legal space, resulting in weak control and minimal legal certainty for business actors and affected communities. Many stockpiles operate without clear environmental permits or even rely solely on permits from technical agencies without cross-sector coordination, which should involve environmental aspects. This gap creates a legal loophole that allows business actors to freely carry out their activities without adequately complying with environmental obligations.

In addition to the absence of clear regulations, there is overlapping and unclear authority between the central government and regional governments, as well as between related sector agencies. For example, in terms of licensing, the ESDM Office in the region can issue operational permits without synchronizing with the Environmental Office, even though both have different responsibilities that are interrelated. Meanwhile, the central government through technical ministries such as the Ministry of Environment and Forestry (KLHK) and the ESDM Ministry have their authority, which often does not run harmoniously with regional policies. (Melisa Nasir, 2023) As a result, there is no single integrated system that regulates the management of coal stockpiles as a whole, and this makes it difficult to enforce the law when violations occur.

The absence of binding national technical standards for the construction and management of coal stockpiles is a significant problem. There are no standard guidelines that regulate the minimum distance of stockpiles from residential areas, dust control systems, runoff management, and periodic environmental monitoring mechanisms. As a result, each business actor tends to set its management standards based on economic considerations, not ecological ones. Some regions may set local regulations, but they do not have strong binding power because they are not regulated by national regulations. It causes the quality of stockpile management to vary greatly and often causes serious pollution without a strong legal basis to take action against it.

On the other hand, the government's indecisiveness in enforcing the law against environmental violations by coal stockpiles is one of the roots of the problem that worsens the situation. Weak routine supervision by authorized agencies means that many environmental violations are never detected or are deliberately ignored. When pollution has occurred and been reported by the community, the actions taken are often only administrative warnings or recommendations for improvement that are not followed by real sanctions (Gunardi Gunardi, 2021). This condition creates the impression that violations of environmental regulations can be tolerated, even allowed to continue without significant legal consequences for business actors. Law

enforcement, which should be a corrective instrument for business actors, is often ineffective and inconsistent. It is not uncommon for cases of environmental pollution by coal stockpiles to end without legal clarity, even when the impact is very detrimental to the surrounding community. Environmental criminal sanctions are almost never used, even though Law Number 32 of 2009 provides space for it. The government often argues that strict law enforcement can disrupt the investment climate or cause local economic turmoil, especially in areas that depend on income from the mining sector. This view shows the imbalance between short-term economic interests and environmental sustainability (Abdillah Dalimunte, 2023).

Weak law enforcement is influenced by several structural factors, including the previously mentioned unclear regulations, limited human and technical resources from supervisory institutions, and potential conflicts of interest between government officials and business actors. Many environmental supervisory officers in the regions lack the facilities, funds, and technical capacity to conduct intensive supervision and sampling of environmental quality. In addition, the close relationship between local governments and mining entrepreneurs who are a source of regional income is a major obstacle to legal action. Without serious efforts to improve regulations, increase supervisory capacity, and build the integrity of law enforcement officers, environmental violations by coal stockpiles will continue to recur without a real solution.

Coal stockpile activities that are not managed responsibly have had a direct impact on environmental damage and public health. Coal dust that is spread in the air without control, as well as runoff that carries pollutants to clean water sources, pose a serious threat to the lives of the surrounding community. Children and the elderly are the most vulnerable groups to respiratory disorders due to dust exposure, while water contamination causes an increase in skin and digestive diseases. Not only humans but aquatic biota and local ecosystems are also threatened by coal waste entering rivers and coastal environments, reducing the quality of biodiversity and disrupting the ecological balance in general.

This ecological impact also gives rise to social impacts that are no less serious. Communities living around coal stockpiles often complain about polluted environmental conditions, but these complaints rarely receive a serious response from authorities or business actors. Noise disturbances, dust covering houses and plants, and disruption of daily activities give rise to deep frustration. In many cases, this injustice triggers social conflict, protests, and even criminalization of residents who voice their rights to a healthy environment. The tension between the community, business actors, and the government is clear evidence that the absence of serious handling of the impacts of stockpiles creates multidimensional problems. (Fikri, 2024)

Furthermore, the ongoing pollution reflects the state's failure to fulfill its obligation to protect the right to a good and healthy environment as stated in the constitution.

This right should be guaranteed by the government through policies that support sustainability and ecological justice. However, weak regulations, minimal supervision, and lack of firm law enforcement have made this right merely a norm on paper. When the community feels the direct negative environmental impacts but does not receive legal protection, the government's credibility in enforcing the law and maintaining social justice is questionable.

Therefore, it is critical to conduct an in-depth study of the legal vacuum and weak law enforcement in the coal stockpile issue. This issue is not only about the environment but also concerns human rights and good governance. This research is expected to provide a basis for encouraging the birth of new, more detailed, and firm regulations, as well as strengthening the monitoring and enforcement mechanisms for business actors who pollute the environment. The hope for the future is the formation of a sustainable and equitable stockpile management system, which prioritizes economic efficiency and protects people's lives and environmental sustainability as a whole.

2. Research Method

This study uses an empirical normative legal research method, namely examining legal issues not only based on written norms in laws and regulations but also supplemented with field facts to see how the law is applied in real terms in the context of coal stockpile management. The approach used includes a legislative approach, namely by examining various relevant regulations such as Law Number 32 of 2009 concerning Environmental Protection and Management, and its derivative regulations, to identify gaps and weaknesses in existing laws. In addition, a case approach is carried out to trace and analyze several real cases of environmental pollution by coal stockpiles in various regions as evaluation material for the effectiveness of applicable laws.

The specifications of this study are descriptive-analytical, namely systematically describing the existing legal conditions and analyzing their implementation and challenges in practice. The data sources used consist of primary data obtained through interviews with relevant sources, such as environmental agency officials, business actors, and affected communities, as well as direct observation at the coal stockpile location. Secondary data is obtained from primary legal materials (legislation), secondary legal materials (literature, legal journals, previous research results), and tertiary legal materials (legal dictionaries, encyclopedias). Data collection techniques are carried out through interviews, field observations, and document studies of regulations and related reports. All data collected is then analyzed qualitatively by examining the relationship between legal norms and empirical reality to obtain a comprehensive picture of legal problems and solutions that can be offered comprehensively.

3. Results and Discussion

Legal Regulations Regarding Coal Stockpile Activities in the Legislation in Effect in Indonesia

In environmental and mining law in Indonesia, the term "coal stockpile" has not been explicitly defined in specific laws and regulations. There is no standard definition of coal stockpile either in Law Number 3 of 2020 concerning Mineral and Coal Mining or in Law Number 32 of 2009 concerning Environmental Protection and Management. In practice, the term "stockpile" is more of a technical-operational term that is understood as a temporary storage place for coal before being distributed to consumers or shipping ports. Several derivative regulations, such as the Regulation of the Minister of Energy and Mineral Resources, and technical documents, such as AMDAL sometimes mention this term, but without providing clear legal boundaries. It shows that although stockpile activities are a critical part of the mining process, the regulations tend to be implicit and do not stand alone as an independently defined legal object. (Long, 2023)

The function of coal stockpiles in the mining distribution chain is as a collection and storage point for mining products before further processes such as transportation, sales, or export. In this context, stockpiles act as logistics and storage facilities that connect the mining area and the final distribution point. Their existence is strategic because it concerns transportation efficiency, supply stability, and coal quality control. However, this function also poses potential environmental risks, especially if the stockpile location is not properly arranged or is located near residential areas and water bodies (Muhammad Reza Fadhil Pratama, 2023). Therefore, coal stockpiles should be objects that legally have their regulations regarding location, technical design, environmental management systems, and monitoring mechanisms to prevent negative effects on the environment and public health.

The legal basis for environmental and mining management in Indonesia is based on the state constitution and various interrelated sectoral laws. Constitutionally, Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia (UUD 1945) states that: "Everyone has the right to live in physical and spiritual prosperity, to have a place to live, and to have a good and healthy environment and to receive health services." This provision confirms that the right to a good and healthy environment is part of the human rights that are constitutionally guaranteed. In addition, Article 33 paragraph (3) of the 1945 Constitution confirms that: "The earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people." In mining, this provision is the basis for the state to regulate and supervise the exploitation of natural resources, including coal, for the public interest and environmental sustainability. (M. Zaky Alifuddin Harahap, 2023)

The implementation of these constitutional principles is technically stated in Law

Number 32 of 2009 concerning Environmental Protection and Management (UU PPLH). This law is the main legal umbrella in environmental management in Indonesia. One of the main principles in this law is the preventive and precautionary principle. Article 3 letters a and b state that environmental protection and management aims to protect the territory of the Unitary State of the Republic of Indonesia from environmental pollution and/or damage, as well as to guarantee human safety, health, and life. Articles 22 to 37 regulate in detail the environmental licensing instruments through the AMDAL (Environmental Impact Analysis) document, UKL-UPL, and environmental permits, which are requirements for every business and/or activity that has a major impact on the environment, including coal stockpile activities. Article 69 paragraph (1) states that every person who conducts a business or activity is required to manage waste, control air, water, and land pollution, and implement environmental quality standard provisions. Violations of these provisions are regulated as environmental crimes in Articles 98 to 113, which contain criminal and administrative sanctions. (Rahman, 2022)

Meanwhile, in the mining sector, further regulations regarding mining activities including post-mining activities and environmental management are regulated in Law Number 3 of 2020 concerning Mineral and Coal Mining, which is an amendment to Law Number 4 of 2009. The law emphasizes that every mining activity must pay attention to environmental aspects. Article 2 letter e states that mining activities must be conducted based on sustainable principles. Article 96A paragraph (1) stipulates that holders of mining business permits (IUP) and special mining business permits (IUPK) are required to implement good mining engineering principles, including management and monitoring of the mining environment. This provision is emphasized in Article 99 paragraph (1) which states that holders of IUP or IUPK are required to prepare and implement reclamation and post-mining plans. In this case, although it does not explicitly mention "coal stockpiles," environmental management obligations apply to the entire chain of mining activities, including coal storage and transportation facilities that have the potential for significant impacts on the environment.

Technical regulations related to coal stockpile activities in the Indonesian legal system are actually spread across various derivative regulations, both in the form of Government Regulations and Ministerial Regulations, especially from the Ministry of Energy and Mineral Resources (ESDM) and the Ministry of Environment and Forestry (KLHK). Although they do not explicitly regulate "coal stockpiles" as a separate object, these regulations set technical standards and obligations for business actors in handling waste, emissions, dust, and other environmental impacts relevant to stockpile activities.

One of the key regulations is Government Regulation (PP) Number 22 of 2021 concerning the Implementation of Environmental Protection and Management, which is a derivative of Law Number 11 of 2020 concerning Job Creation. In

Attachment I of PP No. 22/2021, coal stockpiling and storage activities are classified as high-risk activities that require the preparation of an AMDAL document. Article 4 paragraph (1) requires every business and/or activity that has a significant impact on the environment to have an AMDAL document. Furthermore, Article 192 and Article 193 of this PP also regulate the obligation to manage dust emissions, control air pollution, and manage wastewater, all of which are relevant to the potential impacts of stockpile activities.

Regarding waste, Government Regulation Number 22 of 2021 also regulates the management of Hazardous and Toxic Materials (B3) waste. If stockpile activities produce B3 waste, then the management of this waste must comply with the provisions of Article 233–Article 278, which include storage, transportation, processing, and safe disposal of B3 waste. In addition, the Regulation of the Minister of Environment and Forestry (Permen LHK) Number P.10/MENLHK/SETJEN/PLB.3/3/2018 concerning Emission Quality Standards for Non-Moving Sources states that dust arising from industrial activities (including mining and coal storage activities) must be controlled according to the established emission quality standards. Article 3 of this Permen states that business actors are required to install emission monitoring devices and spray or cover stockpiles to control air pollution.

In addition to the Ministry of Environment and Forestry, technical regulations are also issued by the Ministry of Energy and Mineral Resources. Regulation of the Minister of Energy and Mineral Resources Number 26 of 2018 concerning the Implementation of Good Mining Engineering Principles stipulates that all mining activities, including coal storage facilities (stockpiles), must pay attention to environmental aspects. Article 21 paragraph (1) requires business actors to store coal in a safe, stable location that does not cause environmental pollution. Article 22 paragraph (2) states that business actors must provide drainage channels and sedimentation ponds in the stockpile area to prevent runoff that pollutes the environment. Thus, although it does not specifically mention the term "stockpile," the substance of the regulation already technically covers these activities.

At the regional level, several provincial or district/city governments have issued regional regulations (Perda) or regent/mayor regulations regarding spatial planning and environmental permits, including provisions regarding the location and operation of coal stockpiles. For example, the regional spatial planning (RTRW) regulation regulates industrial and non-industrial land zoning, so that stockpile locations cannot be in residential zones or protected areas. In addition, several regions such as East Kalimantan and South Sumatra are known to require separate permits for stockpile operations through integrated regional licensing mechanisms. However, these regulations vary widely and are not uniform nationally, indicating the need for national technical guidelines to avoid overlapping and legal uncertainty at the implementation level.

Business actors who carry out coal stockpiling activities (stockpiles) basically have a legal obligation to ensure that these activities do not cause pollution and/or environmental damage. This obligation begins at the activity planning stage, namely by obtaining environmental documents in the form of an Environmental Impact Analysis (AMDAL) for high-risk activities, or Environmental Management Efforts and Environmental Monitoring Efforts (UKL-UPL) documents for activities with moderate risk, as regulated in Article 22 paragraph (2) and Article 24 paragraph (1) of Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management. This document is an absolute requirement before business actors can obtain an environmental permit or environmental approval, which is integrated into business licensing through the Online Single Submission (OSS) system. Failure to meet this requirement can be the basis for revocation of the permit and termination of operations.

After obtaining an environmental permit, business actors are required to control the environmental impact of stockpile activities. It includes dust control through a routine spraying system, the use of covers, or protective vegetation. Articles 192 and 193 of PP No. 22 of 2021 state that dust emissions from business activities must be managed so as not to exceed ambient air quality standards. In addition, control of runoff is also an obligation, where business actors must build a drainage system, sedimentation ponds, and a separation system for clean water and polluted water. The waste produced, both non-B3 and B3, must be handled by the technical provisions for waste management regulated in Articles 233–278 of the same PP. Failure by business actors to fulfill this obligation can be subject to administrative sanctions, including revocation of the permit.

Besides the direct impact control, business actors are required to carry out periodic environmental monitoring and reporting to the authorized agency. This report must be prepared based on the RKL-RPL (Environmental Management Plan and Environmental Monitoring Plan) and contain information on air, water, and soil quality parameters, as well as the effectiveness of management actions that have been taken. Regulation of the Minister of Environment and Forestry Number 1 of 2021 regulates in detail the mechanism for this environmental reporting and provides a basis for the government to evaluate the environmental performance of business actors. If there is a discrepancy between the implementation and the environmental management plan, administrative sanctions in the form of written warnings, fines, temporary suspension, or revocation of environmental approvals can be imposed.

From an institutional perspective, supervision of stockpile activities involves the role of the central and regional governments. The central government through the Ministry of Environment and Forestry (KLHK) and the Ministry of Energy and Mineral Resources (ESDM) has the authority to set policies, and technical standards, and carry out coaching and supervision. Meanwhile, regional governments -

especially the provincial and district/city environmental services - are responsible for implementing technical field supervision, checking business actors' compliance, and handling public complaints. Articles 70-75 of Law No. 32 of 2009 concerning Environmental Protection and Management state that environmental supervision is a government obligation that is conducted periodically, suddenly, or based on complaints.

Form of Legal Vacuum in Environmental Management Related to Coal Stockpile Activities

The absence of specific regulations that explicitly regulate coal stockpile activities within the national legal framework creates a fairly serious regulatory gap in the context of environmental protection. To date, there has been no clear and uniform legal definition of what is meant by "coal stockpiles" in Indonesian laws and regulations. This activity is often considered part of the distribution or logistics chain in the mining sector but is not explicitly categorized in the classification of business activities that are subject to separate environmental technical regulations. As a result, stockpile activities do not receive a proportional portion of regulation as mining activities themselves. It complicates the process of identifying the legal obligations of business actors engaged in these activities, especially in terms of environmental responsibility.

Besides the absence of a definition, the absence of regulatory norms that specifically regulate the location, operational permits, and capacity limits of coal stockpiles also worsens the situation. For example, there are no standard provisions that stipulate that stockpiles must be at a certain minimum distance from residential areas, water sources, or protected areas. There are also no quantitative limits that regulate the volume of coal that may be stockpiled in one location so that the risk of pollution can be minimized. This ambiguity results in stockpiles being erected anywhere, often without considering the carrying capacity and holding capacity of the surrounding environment. In practice, many business actors only rely on AMDAL or UKL-UPL documents that are general in nature and highly dependent on the interpretation of environmental consultants, which in turn does not guarantee the fulfillment of the precautionary principle in environmental protection.

Furthermore, the absence of binding environmental technical standards for coal stockpile activities is also a crucial issue. There are no national standards that specifically regulate technical parameters such as dust emission control, runoff management, solid and liquid waste processing, and other pollution prevention systems in the context of stockpiles. It causes business actors to have the freedom to interpret environmental management actions, without any benchmarks that can be used by supervisory officers. The technical guidelines issued by the Ministry of Environment and Forestry (KLHK) and the Ministry of Energy and Mineral Resources

(ESDM) are often not synchronized or even overlap, considering that each ministry views this activity from its sectoral perspective.

The disharmony of these technical guidelines confuses implementation in the field. For example, the Ministry of Environment and Forestry focuses more on controlling environmental pollution and supervising RKL-RPL reporting, while the Ministry of Energy and Mineral Resources places more emphasis on the technical aspects of mining operations and coal distribution. In this vacuum, coal stockpiles escape attention because they are considered to be in a gray area. Even supporting infrastructure such as dust spraying systems, coal covers, sedimentation ponds, and buffer zones or green lanes are not expressly required by applicable regulations. Business actors who want to save operational costs tend to ignore these aspects without clear legal consequences.

The problem becomes more complex when there is overlapping and unclear authority between institutions in supervising and enforcing the law on coal stockpile activities. The Ministry of Environment and Forestry has a mandate for national environmental supervision, while the Ministry of Energy and Mineral Resources has authority over the management of the mining sector. On the other hand, local governments have authority over location permits and pollution control within their respective areas. However, in practice, there is no clarity regarding who is most responsible for supervising and taking action against violations of stockpile activities, especially if the location is outside the mining area or has the status of non-industrial land. As a result, the supervision process tends to shift responsibility, while pollution continues.

The lack of synchronization between central government and regional government regulations also increases the inequality in the implementation of supervision. Some regions do not even have regional regulations (Perda) or technical policies regarding the location and permits of coal stockpiles so the existence of stockpiles is often not officially recorded. Without legal clarity, regional governments have difficulty imposing sanctions or carrying out control, even for illegal stockpiles. In conditions like this, the lack of firmness in law enforcement becomes a recurring inevitability, reflecting the weakness of the legal structure in responding to the challenges of environmental pollution due to coal stockpile activities.

The absence of specific and operational regional regulations regarding coal stockpile activities is one of the main causes of weak environmental control and supervision at the local level. Many local governments do not yet have regional regulations (Perda) or regional head regulations (Perkada) that strictly regulate spatial planning and licensing of stockpile activities, including provisions on permitted location zoning or environmental licensing procedures that are in accordance with the carrying capacity and capacity of the local environment. In situations like this, stockpile activities tend to develop sporadically without careful planning, often located close to residential areas, riverbanks, or disaster-prone areas. As a result, the negative impacts on air,

water, and soil quality become very real but difficult to control legally.

The lack of clear technical guidelines for environmental services in the regions also exacerbates this condition. Without standard technical and operational standards from the central government, regional apparatuses have difficulty carrying out effective supervision functions over coal stockpiles. For example, the absence of technical indicators regarding tolerable dust levels, maximum storage capacity, or mandatory drainage systems means that supervisory officers do not have a strong basis for declaring a stockpile to violate environmental regulations. In addition, the lack of integration between the Environmental Service, the ESDM Service, and licensing agencies in the regions also raises coordination issues, which ultimately results in the bluntness of the implementation of administrative sanctions or efforts to control stockpiles that cause pollution.

The impact of the absence of regulations and technical guidelines is very much felt in the rampant illegal stockpiles or stockpiles that operate not in accordance with the environmental permits that should be. Without a firm legal basis, it is difficult for local governments to carry out forced closures, freeze permits, or other legal actions against business actors who do not comply with the rules. In some cases, even though environmental pollution has been visibly proven and is disturbing the community, the authorities can only give administrative warnings or request improvements without adequate legal coercion. It gives the impression that the law is not present effectively to protect the environment and the interests of the affected communities.

The implications of this legal vacuum are very serious for the process of enforcing environmental law in Indonesia. A weak, multi-interpretable, or even non-existent legal basis is the main obstacle in taking repressive action against violations by coal stockpile actors. The absence of a legal instrument that regulates the mechanism for direct operational closure of stockpiles that pollute the environment or endanger the community, causes violations to continue to occur repeatedly. In addition, the affected community is in a weak position when it comes to fighting for the right to a good and healthy environment. Without a clear legal umbrella, legal advocacy from the community, NGOs, and academics finds it difficult to achieve concrete results due to limited legitimacy and regulatory loopholes that do not support it. This situation reflects the need for legal reform and strengthening of regulations at both the central and regional levels to ensure legal certainty and ecological justice.

Legal Updates on Coal Stockpile Activities Causing Pollution and Environmental Damage

The urgency of legal reform in coal stockpile management is very urgent considering the high intensity of pollution and environmental damage that occurs due to this activity, which until now has not been adequately regulated in the national legal system. Protection of the environment as a constitutional mandate has not been fully

reflected in the applicable policies and legal norms related to stockpiles. In practice, the lack of clarity in regulations causes business actors to carry out activities without clear technical standards and environmental ethics. Legal certainty for affected communities and business actors is neglected so that coal mining governance becomes unaccountable. Amid increasing social conflicts, public complaints, and ecological damage, the state is required to respond immediately through systematic and operational legal reform.

The failure of the existing legal approach to addressing the negative impacts of coal stockpiles can be seen from the weak supervision, minimal sanctions, and the absence of legal instruments that can take firm action against environmental violations. The administrative approach that is reactive and limited to permit documents, such as AMDAL and UKL-UPL, is not enough to anticipate dynamic and ongoing pollution. When business actors are only required to fulfill administrative documents without serious supervision and risk assessment, pollution becomes an inevitable inevitability. It is exacerbated by the legal vacuum at the regional level, which makes law enforcement weak and tends to be symbolic. Therefore, legal reform is a fundamental solution to improve this structural weakness.

In addition to technical and normative aspects, it is critical to encourage harmonization between economic development policies and environmental protection. Coal mining and distribution activities are indeed part of the national energy strategy, but their implementation must not sacrifice the community's right to a healthy environment. Therefore, the legal system must be designed to balance economic interests with environmental sustainability. Legal reforms to stockpile activities must ensure that the growth of the energy sector does not damage the quality of life of the community and the integrity of the ecosystem. Integration between environmental law and mining law needs to be prioritized so that there is no dualism or conflict of norms that complicate supervision and implementation in the field.

In the direction and principles of legal reform, it is necessary to emphasize that principles such as sustainable development, the precautionary principle, and the polluter pay principle must be used as the basis for formulating new norms related to coal stockpiles. These principles ensure that environmental management is not only reactive to damage that has occurred but also preventive in preventing environmental risks in the future. In addition, the principle of strict liability needs to be applied to coal stockpile business actors who cause pollution so that the burden of proof is not entirely borne by the affected community. This approach will strengthen the position of the community in fighting for environmental justice and guarantee the accountability of industry players.

Legal reform must also lead to the formation of special regulations regarding coal stockpile activities that have so far been spread across various sectoral regulations and are not synchronized. The government needs to formulate a separate regulation,

or at least a special chapter in the Law or Government Regulation that specifically regulates all aspects of stockpile activities. These regulations must include provisions regarding location permit requirements, maximum storage capacity limits, environmental risk analysis obligations, and safe area zoning for these activities. Explicit provisions will provide legal certainty for business actors, facilitate supervision, and strengthen protection for the community.

Equally important is the determination of minimum technical standards that must be met by each stockpile, both in terms of dust control, runoff management, waste management, and the construction of supporting facilities such as stockpile covers, sedimentation ponds, and buffer zones. These standards must be binding and become part of the operational permit. In addition, it is also necessary to regulate the periodic monitoring system, transparent environmental data reporting, and independent environmental audits. All of this aims to create a legal system that is not only firm and responsive but also adaptive to the complexity of environmental problems faced by Indonesia in the era of industrialization and massive exploitation of natural resources.

Strengthening the authority and capacity of local governments is one of the key steps in improving sustainable and equitable coal stockpile governance. Within the framework of regional autonomy, the delegation of authority from the central government to the regions should not only be administrative in nature, but must also be clear operationally, especially in terms of licensing, supervision, and enforcement of stockpile activities. Local governments must be given a firm legal mandate to regulate and manage these activities by local conditions, including determining locations that are by environmental carrying capacity and designing technical policies that can prevent pollution. This delegation also needs to be equipped with an adequate budget, personnel, and legal authority so that local governments are not only administrative implementers but also the main actors in controlling the environmental impact of stockpiles.

To realize this, the preparation of Regional Regulations (Perda) and Regional Head Regulations (Perkada) is a very important step. These local regulations must be based on environmental carrying capacity and capacity, and consider aspects of spatial planning, social needs, and ecological risks in their respective regions. Regional regulations must be able to provide technical norms regarding stockpile management, such as safe distances from settlements, pollution control infrastructure standards, location permit mechanisms, and environmental monitoring procedures. With clear regulations at the regional level, the implementation of stockpile management will no longer depend on free interpretations by business actors or simply following general AMDAL documents. Local regulations must also allow for public involvement in the licensing and environmental monitoring process.

However, the delegation of authority will only be effective if it is accompanied by an

increase in the capacity of environmental monitoring apparatus in the regions. Currently, many environmental agencies in the region experience limitations in human resources, monitoring technology, and technical capabilities to evaluate and monitor stockpile activities comprehensively. Therefore, there needs to be a continuous training program, procurement of modern monitoring tools, and increased coordination across agencies such as environmental agencies, licensing agencies, and mining agencies. The synergy between these institutions is important to prevent gaps in supervision, accelerate responses to public complaints, and ensure that any violations can be identified and acted upon by applicable authorities.

In terms of environmental law enforcement, legal reforms must encourage increased effectiveness of supervision mechanisms, both routine and incidental, for coal stockpiles. Supervision should not only rely on reports from business actors but must be based on periodic field inspections and independent environmental audits. In addition, sanctions imposed for violations must be expanded and strengthened, including administrative sanctions such as fines and stern warnings, civil sanctions in compensation to affected communities, and criminal sanctions for business actors who are negligent or intentionally pollute the environment. This assertiveness must be stated in technical regulations so that it has coercive power and does not give rise to multiple interpretations in its implementation.

It is important to provide legal instruments that allow for the freezing of permits, forced closure of stockpile locations, or structured environmental recovery if serious violations are found. This authority can be given to regional governments through central or local regulations, with transparent and accountable procedures so that it is not misused. On the other hand, regulations must also include the obligation of business actors to provide environmental reserve funds or environmental insurance that can be used to overcome pollution if management failure occurs. With such a system, the legal approach is not only repressive but also oriented toward concrete environmental improvement and recovery.

Public involvement and transparency in the monitoring process are important elements in creating participatory and accountable governance. Communities, especially those living around stockpile locations, must be given adequate space to be involved in monitoring industrial activities and reporting violations that occur. The right to environmental information, as regulated in laws and regulations, must be guaranteed through an open reporting system and access to environmental documents such as AMDAL, environmental permits, and audit results. The digital-based technologies such as citizen reporting applications, online dashboards for tracking air and water quality, and announcements of sanctions for business actors, can strengthen public involvement. This openness will encourage legal awareness, accelerate early detection of pollution, and build constructive social control over industry players.

4. Conclusion

The conclusion of this discussion shows that coal stockpile activities in Indonesia are still carried out within an inadequate legal framework, and even tend to be in a regulatory gray area. The legal vacuum occurs both in the form of the absence of specific regulations that regulate coal stockpiles in detail and in the form of the absence of binding environmental technical standards. This ambiguity is exacerbated by overlapping authorities between government agencies, as well as weak supervision and law enforcement capacity at the central and regional levels. As a result, uncontrolled stockpile practices have caused air, water, and soil pollution, as well as having a direct impact on public health and ecosystem damage. Environmental injustice also arises because affected communities lose their rights to a healthy environment, while business actors often escape appropriate sanctions. In this condition, the state is considered negligent in fulfilling the constitutional mandate to protect the environment and its citizens.

Based on this, concrete steps are needed to carry out comprehensive and operational legal reforms to coal stockpile activities. The central government needs to formulate special regulations that regulate definitions, location permits, maximum capacity, technical standards for environmental management, and legal responsibilities of business actors in a firm and measurable manner. On the other hand, local governments must also be given clear authority and strengthened through the preparation of Regional Regulations (Perda) based on local environmental conditions. Strengthening institutional capacity, community involvement in supervision, and the application of environmental law principles such as prudence and polluter pay must be the main foundation. In addition, the law enforcement system must be strengthened with a permit freezing mechanism, structured environmental recovery, and access to justice for affected communities. Thus, coal stockpile governance in Indonesia can run more fairly, and sustainably, and guarantee environmental protection and the constitutional rights of citizens.

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