Organizational Management Key to Green Coal Mining: Policy Analysis

by Asep Saepudin

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Asep Saepudin(✉), Iva Rachmawati, Joko Soesilo, Hestutomo R. Kuncoro, Yuseptia Angretnowati, and Heru Heryadi

Universitas Pembangunan Nasional "Veteran" Yogyakarta, Yogyakarta, Indonesia
{asep.saepudin,iva.rachmawati,j_soesilo}@upnyk.ac.id

Abstract. This article discusses the potential of applying green sector practices in the coal mining industry and analyzes the effectiveness of government policies in promoting the green industry. The study utilizes a qualitative research method to analyze various government policies and identifies organizational management as a key factor in implementing green industry values in mining companies. The research highlights the importance of policies such as the green industry award, green industry standards, and circular economy development in promoting the green industry in the mining sector. Overall, the study aims to contribute to the acceleration of the green sector's performance in coal mining companies through effective government policies.

Keywords: coal mining · green sector · government policies · organizational management · policy analysis

1 Introduction

The problem of environmental damage caused by the industrial sector and the limited carrying capacity of resources, especially energy in running the industrial sector, make it necessary to develop an environmentally friendly industry with power as efficiently as possible. Green Industry is one of the rational choices to overcome this problem. Green Industry has become a global phenomenon in developing the industrial sector of countries worldwide, especially for developed countries. The Indonesian Government launched the green industry in 2008 when the Government of Indonesia issued a policy to implement sustainable industrial development. The Government publishes Presidential Regulation Number 28 of 2008 concerning national industrial policy on the long-term national industrial development goals. The regulation states that Indonesia's industrial development applies the concept of sustainable development, which pays attention to economic, environmental, and social aspects.

The characteristics of the green industry include the efficiency of the use of input materials, namely raw materials and auxiliary materials, and the use of alternative materials that are more environmentally friendly, low energy and water intensity, minimization of waste, both liquid and solid waste and reducing emissions due to the use of low-carbon technology [1]. In line with this, Law Number 3 of 2014, concerning the industry

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that Green Industry (green industry) in its production process, prioritizes efforts to efficiency and effectiveness in the use of resources in a sustainable manner so that it can align industrial development with the sustainability of environmental functions and can benefit the community [2].

The industry is one of the sources of environmental damage upstream. Therefore, efforts to overcome environmental damage are not only those downstream or actions to overcome environmental damage but the actions to overcome the source of ecological damage, namely the industrial sector. Sustainably managed industries or green industries can make an essential contribution to addressing long-term environmental issues. Therefore, each country's application of the green sector must be the primary strategy and paradigm in developing its industry. Companies or industries must also include the principles of the green industry in their corporate policies and governance.

For the mining industry, it is considered more damaging to the environment than other natural resource exploitation activities. Mining can change the landscape's shape, damage or remove vegetation, produce tailings, or waste rocks, and deplete groundwater and surface water. If not rehabilitated, the former mining lands will form giant pits and acidic arid soil expanses [3]. However, the mining industry is one of Indonesia's most famous products, especially coal mining. Coal-fired power plants need coal as a raw material for power plants, and coal is still Indonesia's most efficient energy source. The Government relies heavily on coal to keep electricity tariffs affordable to the public.

The mining industry considered it impossible to implement a green economy (green sector) where the form of production, distribution, and consumption is subject to social interests and environmental sustainability. Sustainability in the mining industry is usually declared weak, meaning preserving natural resources is challenging because this industry manages non-renewable natural resources [4]. The challenges of the green mining industry mainly come from the governance of state institutions in producing green mining industry policies. The conflict of interest between the central Government, local governments, and metal mining companies often negatively affects the implementation of the green mining policy [5–7]. Lack of environmental and legal knowledge is another reason for green mining. Weak governance causes conflicts. The green mining industry's lack of renewable energy use is another technical issue. 1. Renewable energy production is still difficult. 2. Investors are scarce because renewable energy is expensive. 3 Companies still consider green energy a sideline [5, 8, 9].

However, the mining industry requires an expansion of the meaning of sustainability, where the use of these resources will cause or strengthen other resources needed by the community to develop a better life in the future. MIT sustainability expert John Ehrenfeld calls sustainability flourishing. The concept of depletion cost in environmental economics has opened up space that allows strengthening these other resources in the form of savings that future generations can enjoy [4].

In The Principle of Sustainable Development, the production process can internalize the various impacts of pollution and environmental damage into the cost structure of each unit of product produced so that funds are accumulated for repairs to potential decay and ecological damage due to the production process. Sustainability in the mining sector is possible regarding science and global political agreements. By referring to what was conveyed by Yosep Purnama, Jalal, and Ahmad Safrudin [4], at least two

aspects need to be considered in building a green economy/industry in mining companies, namely tailings management and circular economy development. This paper describes the Indonesian Government's policy to realize a green industry in the mining industry.

2 Literature Review

Several efforts encourage the realization of the green industry in the mining industry, including Green Supply Chain Management (GSCM). GSCM covers mining activities, production/refinery and product distribution. GSCM integrates every function of different companies in the oil and gas industry as it is essential to minimize supply chain costs. To win the competition, mining, oil, and gas companies must pay attention to their internal capabilities and collaborate with external parties, including suppliers and distributors. This collaboration helps companies produce superior products because they have met the final cost, quality, and delivery criteria. GSCM plays an essential role in managing all stages of activities in making products from upstream to downstream. GSCM also integrates ecological concepts with supply chain management concepts to minimize energy and material use and reduce the adverse impact of supply chain activities on the environment.

The implementation of GSCM in the mining industry is highly dependent on factors affecting human behavior. Human behavior is dynamic, and relationships constantly evolve and change [5, 6]. GSCM can reduce the impact of the mining industry, increase production and protect people's welfare in mining areas. The GSCM has the same objectives as companies implementing clean production standards (CP) and environmental management systems (EMS). There are to comply with government regulations [5, 6], attract financial groups, and improve ecological efficiency [10].

The application of GCSM in the mining industry for increased efficiency and competitiveness is not easy because it requires a lot of costs and investments. Jiskani's research [7] shows that there are five priorities in GCSM: first, improving management and government regulations related to the direction of the green industry, establishing laws that favor the green mining industry in responding to technical and operational challenges, and strict control over green industry practices. Second is an effort to develop cognitive aspects, especially building awareness of the importance of an environmentally friendly green sector in the mining industry. Ketiga is financial and economic management. Considering that the high cost is one of the challenges in organizing a green mining industry is essential. Not all investors are interested in sectors with significant expenses, small profits, and long-term. Finally, GCSM prioritizes organizational improvement within the mining company [5].

Improving the quality of organizational management within mining companies is precisely the top priority in the research of Zhou et al. [5]. The reasons for Zhou et al. [5] to improve the performance of mining companies as a prerequisite for the implementation of the green management industry are (1) there are institutional pressures, both formal and informal which significantly affect the cognition of senior management and the orientation of green strategies in mining companies. (2) The cognition of senior management and green strategy orientation positively correlate with green innovation in mining companies. They also have a positive mediating effect on the relationship between

environmental legitimacy and green innovation. (3) The capacity to absorb green strategy can positively moderate the relationship between senior management cognition and green innovation and between green strategic orientation and green innovation. (4) As a control variable, the company's size significantly correlates with green innovation. In addition to Zhou et al. [5], who underlined the influence of senior management of mining companies in the adoption of the green mining industry, Pun [11] and Mudgal et al. [11] also recognize that the support of top management and their commitment has contributed significantly to the success of any environmental management practice. Zhou et al.'s research. [12] shows that the ability to absorb green industry ideas can positively contribute to developing management relationships, innovations, and green strategies in the company, including education and socialization of green industry ideas.

Management factors and decision-making patterns in mining companies that can produce green industries are the first things that affect the direction of the green sector adopted by the company, namely through (1) the development of organizational norms and practices that are in line with the culture of innovation and (2) the development of sustainable practices to collaborate with external stakeholders [13]. Apart from this, external factors such as the Government and third parties (investors) are also able to have an important influence on the adoption of the green industry. The Government can make policies requiring mining companies to adopt green sectors, technology, management, and other green strategies through laws and regulations, like mining investors who can encourage companies to care more about the environment by adopting a sustainable development strategy [14].

In addition to laying down, government policies, green industry governance, and mining company management as a prerequisite for implementing the green mining industry, the selection of technology is another less critical prerequisite. One of the extractive industry's efforts in encouraging green mining is to utilize technology [10, 15–17]. The technology is used both in exploration and processing to post-mining management. The goal is undoubtedly to reduce environmental damage using more environmentally friendly technology.

Nevertheless, it notes that although Benedict et al. [18] the internal environmental management practices of mining companies contribute to achieving environmental and social performance, the same cannot be reported on economic performance. It means that financial performance suffers when mining companies promote the internal environment of management, thereby reducing the profits of mining companies. This challenge once again underscores the importance of GCSM. Jiskani et al. [7] added that if the Government wants mining companies, it needs to be provided low-interest loans and subsidies as well as support from the academic sector to support the development of research and development related to friendly technology and the environment of the mining companies.

Technological innovations contribute to sustainable competitive advantage directly. They are particularly relevant in the mining sector, which faces the challenge of scarcity of access to resources and is in dire need of new solutions to remain sustainable and competitive. Technological innovations help mining companies reduce costs, reduce environmental impact, increase production and improve mineral recovery. Understanding the barriers and supporting factors for technology adoption is essential for the success

of technology implementation efforts and the sustainability of the mining sector [13]. Technology can significantly contribute to the mining industry's waste treatment, and it needs to be done, considering that mining industry waste contributes to severe damage in Indonesia [7, 19].

Chen and Liu [20], in their research on the coal industry in China from 2008, showed that the coal industry in China had contributed to considerable ecological damage mainly due to coal mining waste. However, with the adoption of mining technology and the reduction of waste emissions, eco-efficiency showed an increasing trend, and the peak eco-efficiency value was 1.26 in 2019 from 0.73 in 2008. The same results are also demonstrated by Khrisna et al. [21], that solid waste in the iron and steel industry can be utilized by adopting appropriate technologies. Mining can become cleaner and sustainable development can be organized by effectively using solid waste in the construction industry, especially in geopolymer concrete. Geopolymer concrete, a third-generation construction material, effectively utilizes various industrial solid wastes generated by the steel and mining industries.

Integrating technologies across the mining value chain is critical to identifying the best technology that can be applied to an operation based on the criteria. Dayo-Olupona study et al. [22] investigate technologies that can be adopted for mining projects, develop conceptual frameworks for analytical processes, and validate frameworks using hypothetical case studies. However, the study's results also show the importance of decision-making in the management of mining companies. Thus, technology is not the only answer to practicing innovation and green strategy in mining enterprises. PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluation) (one of the multi-criteria decision-making) used by Dayo-Olupona et al. [22] shows the result that Artificial Intelligence (AI) is the most preferred alternative, which outperforms other comparative technologies. Such research models can help provide the basis for any mining company that adopts technology to build its technology business case, strategy, and roadmap to achieve the desired results.

Mining is one of the most energy-intensive industries worldwide, as it provides an essential source of raw materials for the manufacturing, transportation, construction, and energy sectors. The demand for raw materials is projected to increase as the world's population grows and many low-income countries become middle-income countries. This growth in demand for minerals, coupled with a decrease in mineral ore grades, is likely to increase the energy demand of the mining industry, which is used for activities throughout exploration, extraction, utilization, and processing, as well as refining. Thus, technical issues need to be the primary consideration considering that this industry depends on the level of technology in exploration, processing of mining products, and waste processing of mining products. The push to immediately develop alternative energy needs to be carried out directly [23].

Thus, efforts to encourage the development of the green mining industry by tabling companies can help. Efforts to increase the adoption of the green mining industry can be facilitated through government support through laws and regulations, management improvements within the company, investor support that is also in favor of the green mining industry, and environmentally friendly technology.

3 Methodology

The study used a qualitative approach to understand the efforts of the Government to present Indonesia's green mining industry. Several documents regarding government regulations related to green mining are the primary references to see how the Government is serious about encouraging these efforts. Meanwhile, documents about green mining management of mining industries are also an essential part of this research to determine the extent to which they comply with environmental compliance standards in mining. In addition, the document on the tendency to consider mining investment is also a reference to see the extent to which investors can encourage green mining practices. This research also used in-depth interviews with sources from PT Adaro and PT Buma.

4 Results and Discussion

4.1 Industrial Sector Policy

The Government has an essential role in realizing green industries, especially mining companies. For the Indonesian Government, the development of green initiatives has been launched since 2008 when the Government of Indonesia issued a policy to implement sustainable industrial development. This policy is stated through Presidential Regulation Number 28 of 2008 concerning national industrial policy on the long-term national industrial development goals. The regulation states that Indonesia's industrial development applies the concept of sustainable development, which pays attention to economic, environmental, and social aspects. In the financial part, industrial development can absorb labor, produce goods needed by the people, generate foreign exchange through exports, and save foreign exchange by reducing imported products. For environmental aspects, industrial development must balance ecosystems, maintain sustainable resources, avoid exploitation of natural resources, and ecological conservation functions for the social part, industrial development that can benefit society, such as improving education, health, and security.

To strengthen this commitment to green industry development, the Indonesian Government has included aspects of the green industry in the National Medium-Term Development Plan (RPJMN) for 2010–2014, RPJMN 2015–2019, and RPJMN 2020–2024. Indonesia has also included the concept of the green industry in Law Number 3 of 2014 concerning Industry. Several steps have begun to be taken to support the transition of indonesia's industrial sector from Business as Usual (BAU) to Green Business. In September 2009, along with 20 other Asian countries, Indonesia signed the Manila Declaration on Green Industry in the Philippines. In this declaration, Indonesia expressed its determination to establish policies and regulatory and institutional frameworks that encourage a shift towards an efficient and low-carbon industry, otherwise known as the green industry.

Indonesia's commitment to the implementation of the green industry is also influenced by several international regimes, including the 1997 Kyoto Protocol, which is an amendment to the United Nations Framework Convention on Climate Change

(UNFCCC) on international approval of efforts to tackle global warming; British Standard No. 7750 which is now in use became ISO 14000; and the Environmental Management, and Auditing Scheme (EMAS) from Germany which was finally adopted by the European Union which is now also used as a reference for the implementation of the Environmental Management System (EMS) in ISO 14001.

In the Era of the Joko Widodo Government, both in the first period of 2015–2019 and the second period of 2020–2024, the Indonesian Government's commitment to implementing sustainable development remains a concern. This is marked by the input of the concept of sustainable development in the 2015–2019 RPJMN and the 2020–2024 RPJMN. As mentioned in the general policy direction of national development in 2015–2019, of the seven available policy directions, 2 of them mention sustainable development, namely: first, the first general policy direction, "Increasing Inclusive and Sustainable Economic Growth," and the second general policy direction, "Improving Sustainable Management and Added Value of Natural Resources (SDA)" Book I RPJMN 2015–2019). The 2020–2024 RPJMN has also mainstreamed the Sustainable Development Goals (SDGs). The targets of the 17 Sustainable Development Goals (SDGs) and their indicators have become an integral part of Indonesia's seven future development agendas.

Green economic growth is also one of the concerns in the growth and development of the industry, where one of the focuses of industrial development, as mandated by Law Number 3 of 2014, is to realize an industry that, in its production process, prioritizes efforts to efficiency and effectiveness in the use of resources in a sustainable manner to be able to align industrial development with the sustainability of environmental functions and can benefit the community. In addition, phase II (2020–2024), Staging industrial development achievements according to the National Industrial Development Master Plan for 2015–2035, emphasizes the achievement of competitive and environmentally sound advantages through strengthening industrial structure and mastery of technology is supported by qualified human resources.

During the era of President Joko Widodo's administration, he has issued several important laws and regulations that support the implementation of the green industry, namely: Law (UU) Number 3 of 2014 concerning Industry, Law Number 6 of 2016 concerning Ratification of the Paris Agreement, Law of the Republic of Indonesia Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining, Law Number 11 of 2020 concerning Job Creation, Government Regulation (PP) Number 41 of 2015 concerning The Development of Industrial Resources, Government Regulation of the Republic of Indonesia Number 8 of 2018 concerning the Fifth Amendment to Government Regulation Number 23 of 2010 concerning the Implementation of Mineral and Coal Mining Business Activities, Government Regulation Number 29 of 2018 concerning Industrial Empowerment, Presidential Regulation (Perpres) Number 28 of 2021 concerning the Implementation of the Industrial Sector, and Presidential Regulation Number 59 of 2017 concerning the Implementation of the Achievement of the Sustainable Development Goals.

4.2 Green Industry Policy

Based on Law 3/2014, the Green Industry is an industry that, in its production process, prioritizes efforts to efficiency and effectiveness in the use of resources in a sustainable manner to be able to align industrial development with the sustainability of environmental functions and can benefit the community. In PP 41/2015, it is emphasized that Industrial Companies and Industrial Estate Companies are required to utilize natural resources efficiently, environmentally friendly, and sustainable, and the use of natural resources in an environmentally friendly and sustainable manner is carried out through waste reduction, reuse, reprocessing, and recovery. Likewise, PP 29/2018 explains that the Green Industry Standard contains at least provisions regarding Raw Materials, auxiliary materials, and energy; production processes; products; business management; and waste management. In PP 28/2021, the Government emphasized the existence of related controls and supervisions: resource efficiency, energy management, water management, and the Implementation of Green Industry Standards. These various provisions have been in line with the principles of the green industry.

The Government has developed two strategies for realizing a green industry, namely the Greening of Existing Industries, namely Developing existing Industries towards Green Industries, and the Creation of New Green Industries, namely Building new Industries with the Principles of Green Industry. To develop the strategy, the Government implemented several efforts: rewarding companies that have implemented green industries, implementing green industry standards, and creating a circular economy [24].

As for the industry, the Government expects to implement the green industry through several company efforts, namely: building joint commitments and formulating company policies for the development of the Green Industry, implementing green industry development policies, implementing environmentally friendly management systems, and developing business networks to obtain raw materials, auxiliary materials, and environmentally friendly technologies.

The Indonesian Government has set the parameters of the green industry as a standard that must be applied by enterprises certified in the green industry. The parameters are The use of recyclable, reusable, and biodegradable raw materials; Creating a more efficient and effective supply chain business and model; Designing sustainable products; Using environmentally friendly energy; and developing industrial people and Social Responsibility. As of 2020, the Government of Indonesia, through the Ministry of Industry, has established 28 green industry standards [24]. Nevertheless, of the 28 green industry standards the Government has set, only nine standards have been achieved with a total of 37 companies. Meanwhile, the mining industry does not yet have a green industry standard. The Government has also established 15 green certification bodies based on the Minister of Industry Number 24 of 2021 concerning the Green Industry Certification Institute (LSIH). LSIH consists of 4 clusters: 10 Balai Besar institutions, 1 Baristand Industri institution, 1 Industrial Certification Center institution, and two external parties, PT Sucopindo ICS and PT Integritas Global Sertifikat.

To strengthen efforts to realize a green industry, the Government has provided facilities for companies implementing green initiatives, as stated in PP 29/2018 concerning industrial empowerment. In article 41, the Central and Regional Governments can provide facilities to Industrial Companies that carry out efforts to realize Green Industry.

Furthermore, Article 42 (1) states that the facilities, as referred to in Article 41, are in the form of fiscal facilities and non-physical facilities. Non-fiscal facilities include Training on improving the knowledge and skills of industrial human resources; Delegation of production rights to a technology whose patent license is held by the central Government or local Government; Development of security of industrial operational activities; Provision of assistance in the promotion of production products; and other non-fiscal facilities regulated in the Regulation of the Minister of Industry. Article 43 states that the central government and local governments prioritize using products with a Green Industry Certificate.

4.3 Green Mining Policy

Based on the efforts made by the Government in realizing a green industry through green industry awards, the application of green industry standards, and the development of a circular economy, it requires the support of green industry policies for the coal mining industry.

Green Industry Awards

The Government has held a green industry award since 2010 based on the Regulation of the Minister of Industry of the Republic of Indonesia Number 18/M-IND/PER/3/2016 concerning the Green Industry Award and the Regulation of the Head of the Standardization Agency and Industrial Services Policy Number 146 of 2021 concerning Guidelines for Assessing Green Industry Awards. The objectives of the Green Industry Award are implemented to: strengthen institutional capacity through the promotion of the green industry, and provide motivation to industrial companies to apply the principles of the green industry.

Meanwhile, the assessment aspects include the Production Process (70%), Waste Management/Greenhouse Gas Emissions (20%), and Company Management (10%). The production process includes efficiency programs, input materials, energy, water, process technology, and human resources. Waste Management/Greenhouse Gas Emissions includes programs to reduce greenhouse gas emissions and meet environmental quality standards and waste management facilities. Company Management, including operational standards, charity or donations, awards, and employee health. Based on the green industry award guidelines, the assessment criteria have covered aspects of organizational management quality that are important in developing green industries. During the period 2010–2019, there were 895 industrial companies received the Green Industry Award. Energy Savings in the implementation of the Green Industry in 2019 reached Rp. 3.5 trillion, and Water Savings were equivalent to Rp. 228.9 billion [24].

However, the mining industry and other industries that produce non-renewable natural resources require another assessment aspect, namely the post-mining land management aspect. The substance contained in the Government Regulation of the Republic of Indonesia Number 78 of 2010 concerning Reclamation and Post-mining should be an essential assessment in assessing green industry awards.

Application of Green Industry Standards

The world focus on global warming makes coal use difficult today. Most nations, including Indonesia, adhered to the Paris Accord on global warming. Countries are meeting the

deal by decreasing coal use and switching to greener energy. Global needs are reducing coal use, including in Asia. Develop and use coal in line with the carbon emission reduction goal to solve coal use issues. Thus, optimizing national coal resources and reserves can increase energy security and independence by (1) maintaining domestic coal use; (2) converting coal to substitute imports of other energy and industrial raw materials; (3) extracting coal content for industrial and agricultural needs; and (4) applying environmentally friendly coal utilization technology [25]. A roadmap for the development and use of measurable and implementable coal is necessary to achieve the four points above through the national coal development and utilization program that combines upstream and downstream sectors.

Green mining guides sustainable mining growth. Green mining aims to minimize environmental and social impacts and optimize local benefits throughout operations. Green mining promotes materials and energy efficiency to reduce the environmental impact of mineral-based product life cycles and ensures future mineral resource supply [14]. Sustainable development demands that our mineral resource use does not jeopardize future generations' needs. 3. Fairly share rewards. Mining should benefit all stakeholders and boost regional growth. In Regulation of the Minister of Industry No. 05/M-IND/PER/1/2011, the green industry is defined as an ecologically sound industry that aligns growth with environmental sustainability, prioritizes efficiency and efficacy of natural resource use, and benefits the community.

As previously mentioned, the coal mining industry does not yet have the green industry standards set by the Ministry of Industry. Therefore, the Government needs to set green industry standards in the coal mining industry by including the principles or values of implementing the green industry. However, what needs to be considered in preparing green industry standards for coal mining companies is the classification of coal mining companies based on the size or size of the company. This needs to be considered because the green industry in the mining sector requires a significant investment with the support of technology and environmentally oriented human resources.

PT Adaro also appreciated the government's efforts to create national standards for mining industry implementation and laws and regulations, which encouraged them to focus more on green mining. The Ministry of Energy and Mineral Resources and the Ministry of Environment and Forestry encouraged Adaro officials, according to interviews.

> "So, if you look at the background, maybe we can divide it into two: External Factors and Internal Factors. The external factor is quite massive from the Government itself, especially if we in the mining industry are seen as an extractive industry, which is always viewed negatively, whether it changes nature or not, especially if the method is open-pit mining. If the Ministry of HR and the Ministry of Environment and Forestry head operations, the government is concerned. Each ministry uses environmental management standards, and good mining engineering rules, including environmental protection, will be evaluated. With such external conditions, green investors and others must react internally. Thus, internal environmental protection and community development plans are needed" (PT Adaro Representative. Zoom Interview. June 24, 2022).

PT Buma's representative added that customers implicitly encouraged them to comply with green mining laws.

> "This BUMA is worried about compliance with regulations, both government and customer, so it becomes a reference when talking about it. How is our application related to environmental laws? This is our current worry. Second, as a contractor to the client, we promise to meet some of his government requirements" (PT Buma. zoom interview. July 13, 2022).

Circular Economy Development

The development of a circular economy is essential in realizing a green industry. But what needs to be considered is the need to expand the understanding of the circular economy in the mining industry. This is because the mining industry manages non-renewable natural resources and changes the landscape while producing post-production waste. Therefore, the development of a circular economy in the mining industry is directed at the post-mining product that changes the function of post-mining land and can provide added value to the surrounding community. Post-mining land reclamation is a plan every mining industry must have to ensure that post-mining can be used for different functions, such as tourist or other parts, according to land characteristics and conditions in the area.

Law of the Republic of Indonesia Number 3 of 2020 concerning Changes to Law Number 4 of 2009 concerning Mineral and Coal Mining recommends green mining in Indonesia. From glorifying company licenses to reclamation, the Law has regulated mining companies' conduct. Every mining firm needs permits for mining, transportation, and sales. This allows investors to monitor the company's mining operations. The Law also requires companies to reclaim land to better the environment and empower communities [26].

Article 6 states that this Act emphasizes government intervention in mining firms. In the article, the Central Government has the authority to determine policy plans and direction of national Minerals and Coal, establish regulations, legislation, and national guideline standards, conduct Mining Investigations and Research in all Mining Jurisdictions, issue Business Regulations, provide guidance and supervision on the implementation of Mineral and Coal Mining Business activities, and supervise post-mining activities.

Law No. 3 of 2020 addressed licensing instruments, exploitation areas and production activities, and reclamation and post-mining. The IUP regulates coal mining firm licensing. The Provincial Government controls IUP under the Local Government Law. The 2020 Omnibus Law and Mineral and Coal Law electronically control central mining company licenses. One IUP per mineral or coal sort and pit type. IUP should be one page. Uniform join rules simplify first-part control.

The order controls the use of exploitation areas and production activities to regulate development companies. Good mining business practices include (a) environmental management, mineral and coal conservation, and mining methods by field, and (b) appointing a field manager. Mining company governance prioritizes domestic products, local labor, and local spending on mining goods and services [27].

Each mining firm must manage coal mining sustainability through reclamation and post-mining activities. Throughout the mining process, reclamation organizes, restores, and improves the environment and ecosystem to recover its function. Post-threshold activities are planned, systematic, and ongoing activities to recover natural and social functions in the mining area [28].

Law Number 4 of 1982, Law Number 23 of 1997, and Law Number 32 of 2009 address environmental violators, including mining firms. The Act defines environmental pollution, including industrial pollution and the danger of humans to polluters. The 2009 UU PPLH's Article 112 lists officials who fail to oversee the Law's actions as violators of ecological collapse. Any authorized official who deliberately fails to supervise the person in charge of the business and activities to comply with regulations, environmental legislation, and permits as referred to in Article 71 and Article 72, resulting in pollution and environmental damage and human deaths, will be sanctioned.

5 Conclusion

In general, based on the policies published to support the development of the green industry, the Indonesian Government has a clear direction. It has been following the principles and values of the green industry. However, to expand the achievements of the green industry in the mining industry, it is necessary to develop policies or efforts made that support the development of the green industry. Referring to the three strategic actions set by the Government, three essential things must also be considered in developing green industries in mining companies. These three things are, first, the development of the assessment aspect of the green industry award, where the element of post-mining land management must be included in the assessment aspect. Second, the Government and other relevant stakeholders need to develop green industry standards for coal mining companies. Third, in developing a circular economy, the Government needs to expand the meaning of the circular economy in the mining industry and become the strategic plan of every mining company. The strategic effort orientation is expected to change the view on the mining industry, considered the most significant contributor to environmental damage, to become a contributor in increasing value for surrounding communities and the Government through the use of post-mining land.

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