

Legal Certainty on the Implementation of Post Mining Land Reclamation of Unlicensed Coal Mining as an Effort to Preserve the Environment in Indonesia


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Abstract

Indonesia, as a country with potential natural resources such as coal, faces major challenges in tackling the negative impacts of unlicensed coal mining, including weak post-mining land reclamation. This research aims to examine government policies to overcome the problem of reclamation of unlicensed coal mines in Indonesia. The research method used qualitative research with a focus on analyzing regulations and cases of unlicensed coal mining. The results show that various government policies related to mine reclamation are regulated in laws and regulations. Still, the reclamation of unlicensed mines or illegal mines is not clearly regulated. However, it can be prosecuted as corruption crimes because it is considered detrimental to the state or becomes the responsibility of the government if the perpetrator is unknown; this adds to the problem of carrying out reclamation considering the large number of coal mining pits so that the government is difficult to carry out reclamation. Not only that, law enforcement against the implementation of unlicensed mining is still not optimal; existing regulations emphasize criminal sanctions and fines more than reclamation responsibilities. These findings indicate the need for government

policies in the coal mining sector that emphasize legal certainty regarding the responsibility of coal mining actors who do not have permits or the government's responsibility in carrying out reclamation needs to be strengthened by adding policies for reclamation of unlicensed mining land and more effective supervision and application of sanctions that emphasize reclamation responsibilities in order to achieve the goal of environmental sustainability.

Keywords

Legal Certainty, Reclamation, Mining.

Introduction

Indonesia is the fifth largest coal producer in the world,¹The state uses mining excavation materials as a way to improve the economic level of the Indonesian people, as stipulated in the provisions of Article 33 paragraph (3) of the 1945 constitutions of the Republic Indonesia (UUD 1945) which states that "The land and water and the natural resources contained therein shall be under the control of the state and shall be used to the greatest extent for the prosperity of the people".The state, in carrying out its function, delegates to state institutions, namely the executive or government.²The central government must continue to maintain control over its affairs to the maximum extent possible for the welfare of all people, not just those living in the region where the mining minerals are found.³Control of mining excavation material by the government, of course, has the authority to control both preventive and repressive.

Natural resources must be carefully managed and used in order to support the development of a sustainable and environmentally sound national economy, as their use and exploitation can disrupt and even

¹ Arum Sutrisni Putri, "Potensi Sumber Daya Alam Batubara," Kompas, retrived from

[kompas.com.https://www.kompas.com/skola/read/2020/05/29/110000269/potensi-sumber-daya-alam-batu-bara](https://www.kompas.com/skola/read/2020/05/29/110000269/potensi-sumber-daya-alam-batu-bara).

² Abdul Halim Barkatullah, *Buku Ajar Hukum Pertambangan*, (Bandung: Nusa Media, 2017), <https://rb.gy/gj6s5z>.

³ Adrian Sutedi, *Hukum Pertambangan* (Jakarta: Sinar Grafika, 2011), <https://rb.gy/pkhqw4>.

harm the environment.⁴Environmental problems in coal mineral mining often occur; coal mining, for example, has a negative impact on the environment and society. Moreover, at the global level, coal is known as the dirtiest fossil fuel; coal's contribution to carbon emissions in the world reaches 50 percent. In Indonesia, environmental problems caused by mining licenses are increasingly uncontrolled ... the rampant opening of mining land does not seem to be accompanied by awareness of the impacts on the environment. The lack of awareness about environmental aspects often characterizes mining activities in this country... how could it not be? We are often presented with the fact that thousands of hectares of KP (mining power) areas across the archipelago are abandoned (damaged) after production by operating mining companies. Ironically, it is not only illegal mining activities (without a permit) that often cause land damage, as if not wanting to be left behind; mining activities with permits do not escape the same thing.⁵If only coal mining has a license, how about mining that does not have a license in carrying out environmental restoration? Of course, the abandonment of ex-mining land is one of the triggers for environmental damage, while environmental restoration in the form of rehabilitation and reclamation is one way for ex-mining land to return to its environment according to its designation or at least not experiencing environmental damage.

Repair or reclamation efforts are very minimal and often experience obstacles. This is what makes sorry and anxiety significant for people who are in the area around the mining location. In general, land improvement initiatives are not optimal once the region has been mined. Emphasis is placed on Government Regulation Number 78 of 2010 on Reclamation and Post mining as well as Law Number 3 of 2020 on Mineral and Coal Mining, also known as the MINERBA Law. In actuality, though, a large number of mining firms have yet to reclaim former mining area,⁶whereas reclamation is one form of prevention of

⁴ Philosophical foundation, Academic Paper of Draft Law on Amendment to Law Number 4 Year 2009 on Mineral and Coal Mining.

⁵ Sociological Foundation, Academic Paper of Draft Law on Amendment to Law Number 4 Year 2009 on Mineral and Coal Mining.

⁶ Abdul Halim Barkatullah and Ifrani, "Penyeimbangan Terhadap Dampak Negatif Kebijakan Pertambangan Batu Bara," *Bina Hukum Lingkungan* 3, no. 1 (2018): 34–48. <https://doi.org/10.24970/jbhl.v3n1.3>.

environmental damage in mining.⁷ In terms of community welfare, it is also no more than the situation before mining, even though people have difficulty adapting to the living environment formed during and after mining.⁸ Not only that, the existence of mining without a license or illegal (PETI) has a detrimental effect on the environment. Mining carried out without a license in violation of regulations is often the cause of harm to the ecosystem, including water and soil pollution and gaping holes of abandoned excavations that sometimes cause fatalities.

Post-mining land reclamation is one of the crucial steps to prevent environmental damage. According to MINERBA Law, reclamation is the process of organizing, restoring, and improving the environment and ecosystem at every step of the mining industry so that it can resume its designated functions. However, unlicensed mining that is sometimes unknown to the official owner or responsible party makes reclamation increasingly difficult to implement. Actually, there are over 2.700 PETI locations throughout Indonesia, according to data from the Ministry of Energy and Mineral Resources. Based on statistics from the third quarter of 2021, there are approximately 2.645 mineral PETI locations and 96 Coal PETI locations. South Sumatra Province's is home to one of the most PETI sites.⁹ One of the issues the Indonesian government is dealing with is unlicensed mining; with the number of PETI as mentioned above, there should be clarity on who is responsible, but in the legislation, there is no clear mention of who is responsible, and the government should also be responsible for implementing reclamation, but there has been no significant realization, so legal certainty,¹⁰ is needed in the legislation to clarify who is responsible for this PETI.

According to GochaNarckyRanggalawet al., "A favorable investment atmosphere has been disrupted, several social conflicts have

⁷ Nurlela. S. and Abrar. P, Farida, "Tanggung Jawab Hukum Reklamasi Lahan Bekas Pertambangan PT. Kaltim Prima Coal. Kabupaten Kutai Timur," 3 No. 2 (2014): 182 (2014).

⁸ Abdul Halim Barkatullah and Ifrani, Op. Cit..

⁹ Kementerian ESDM, "Pertambangan Tanpa Izin Perlu Menjadi Perhatian Bersama". ESDM, retrieved from <https://rb.gy/aa9ptu>.

¹⁰ Since the MINERBA Law is based on the idea of legal certainty, strict agreements and regulations are required in order to establish legal certainty in the managements of coal and mineral mining.

emerged, and local mining revenue has decreased as a result of PETI. Regarding initiatives to circumvent the imposition of criminal penalties”.¹¹ Similarly, in the research results of Novi Yanti Sandra et al., according to her “Criminal law enforcement against PETI activities from case study Number 378/Pid.B-LH/2020 / PM. Ambon, according to Article 161 of the MINERBA Law and Article 55 paragraph (1) of the criminal code, where the convicted party had previously been found guilty of engaging in the same activity, namely mining without a license. The actions committed by the convict did not fulfill the purpose of punishment because they did not have a deterrent effect on the convict, so the convict committed his actions.”¹² Local governments currently have the responsibility of monitoring directing, and managing adverse post-mining effects, such as harm to the environment of the mining area, as well as other authorities assigned by the federal government. The central government currently has complete authority over the management of coal and minerals, including the power to deal with unlicensed mineral mining operations. Local government have a normative role in controlling socially applicable policies. Practically speaking, thought, this function is not yet at its best because the government has not taken community complaints about the detrimental effects of illicit mining seriously.¹³ According to Ahmad Redi, “Given that PETI actions are classified as illegal conduct under Articles 18 and 160 of the MINERBA Law, the law enforcement conundrum surrounding PETI is a critical concern for those who manage mining company activities. In order to guarantee that the maximum enjoyment of the produced number principle is attained, policies are made based on cost and benefit analysis. Non-punitive measures using technology to discourage mining, such as

¹¹ GochaNarckyRanggalawe, InoSusanti, and Kamal Fahmi, “DilemaPenegakanHukumPenyelesaianPertambangan Tanpa IZIN”, *Journal MarwahHukum*, 1 No. 1 (2023): 29-40, <https://doi.org/10.32502/mh.v1i1.5600>.

¹² Novi Tanti Sandra Tutuarima, Deassy Jacomina Anthoneta Hehanussa, and Margie Gladies Sopacua, “Penegakan Hukum Terhadap Kegiatan Pertambangan Tanpa Izin”, *Journal Ilmu HukumTatohi*, 1 No. 12 (2022): 1263-1269, <https://doi.org/10.47268/tatohi.v1i12.882>.

¹³ Benedikta Bianca Darongke, J. Ronal Mawuntu, and Donna O. Setiabudhi, “Dilema Penegakan Hukum Kegiatan Pertambangan Mineral dan Batubara Tanpa Izin”, *Journal Amanna Gappa*, 29 No. 1 (2021), <https://doi.org/10.20956/ag.v29i1.14614>.

mentoring and overseeing small-scale miners to ensure that mining is permitted”.¹⁴ According to Sanawiah and Istani, “transcendental-based work needs to be internalized in every policy maker so that the law can be present to provide protection and protection and empowerment of marginalized communities.”¹⁵ Benikta also added that one of the efforts to overcome it with repressive efforts with administrative sanctions is trying to reprimand, government coercion, and forced money, as well as preventive measures by educating the public about the negative environmental effects of unauthorized mining and encouraging them to pursue other careers like farming and animal rearing.¹⁶ In addition, Yuwono Prianto et al. added that “Since population pressure has decreased, the enforcement of unlicensed mining in Kuningan Regency is more of a compromise and has not had a major influence on environmental functions. Instead, the people must be empowered to move their livelihoods to the tourism and culinary industries.”¹⁷ From some of the research results above, in essence, questioning the response of local governments that are not responsive to community reports related to PETI, and prioritize criminal law enforcement, and the remedies offered include the necessity of law enforcement in the form of criminal and administrative penalties that serve as a disincentive to unlicensed miners, and the need for a non-penal approach by not only

¹⁴ Ahmad Redi, “Dilema Penegakan Hukum Penambangan Mineral dan Batubara Tanpa Izin pada Pertambangan Skala Keci”, *Journal Rechtsvinding Media Pembinaan Hukum Nasional*, 5 No. 3 (2016): 339:420. <https://dx.doi.org/10.33331/rechtsvinding.v5i3.152>.

¹⁵ Sanawiah and Istani share Ahmad Redi’s views, which are essentially the same: they recommend non-punitive law enforcement against PETI with the government offering direction and oversight to enable PETI to establish itself as a respectable enterprise, Sanawiah and Istani, “Penegakan Hukum Pertambangan Tanpa Izin Berbasis Transendental” *Journal Ilmu Hukum Satya Dharma*, 5 No. 1 (2022): 27-39. <https://doi.org/10.33363/sd.v5i1.799>

¹⁶ Benedikta Bianca Darongke, “Penegakan Hukum Terhadap Pertambangan Tanpa Izin Menurut Undang-Undang Nomor 4 Tahun 2009 Tentang Pertambangan Mineral dan Batubara”, *Journal Lex Et Societatis*, 5 No. 10 (2017): 66-71, <https://doi.org/10.35796/les.v5i10.18491>.

¹⁷ Ywono Prianto, Benny Djaja, Rasji, Narumi Bungas Gazali, “Penegakan Hukum Pertambangan Tanpa Izin serta Dampaknya terhadap Konservasi Fungsi Lingkungan Hidup”, *Bina Hukum Lingkungan*, 4 No. 1 (2019):1-20, <http://dx.doi.org/10.24970/bhl.v4i1.80>.

enforcing criminal law but approaching PETI to become legal mining and finding other alternative jobs for PETI miners such as animal husbandry, farming, tourism and culinary.

The author claims that the findings of the aforementioned study demonstrate the significance of the state's attention to PETI, as it affects both environmental harm and state revenue. Because the MINERBA Law regulates more about reclamation responsibility for entrepreneurs who obviously have permits, the author provides legal certainty regarding the environmental recovery of this former PETI mine because it has a very extraordinary impact. For this former PETI mine because it has a very extraordinary impact. For example, government policies are created regarding the responsibility for implementing mining land reclamation by including norms that are responsible for carrying out reclamation of unlicensed land that is unknown to the miner. There are only criminal provisions for illegal miners. Still, they do not emphasize the need for reclamation, so government policies are needed to regulate the legal certainty of reclamation implementation against PETI.

Given the foregoing context, the purpose of this research is to investigate the degree of legal certainty in resolving Indonesia's coal mining reclamation without a license (PETI) issue.

Method

This article uses a qualitative research method with a normative approach to analyze the issue at hand by linking previous cases, relevant laws and regulations, and relevant legal precedents. Information is gathered from several sources, including online media, and supplemented with insights from previous research. Using this approach, this article seeks to offer a thorough and knowledgeable analysis of this topic, as well as provide valuable insights into the challenges and potential solutions related to post-coal mining land reclamation policies in Indonesia. The research focuses on understanding the applicable regulations and their implementation regarding environmental preservation by examining several cases related to unlicensed coal mining. Then, the data obtained is analyzed descriptively to describe and evaluate government regulations and policies on post-mining land reclamation.

Result and Discussion

Even as the world moves toward green energy, coal still plays a significant part in the energy landscape.¹⁸ Coal deposits are abundant in Indonesia, 20 million tons of coal were used for the electricity sector (PLTU), followed by 4.2 million tons for the cement industry and 1.1 million tons for other industries. Because of its benefits, including the reduction of operational expenses brought on by coal's price (energy unity), which is less expensive than other forms of energy, PLTU and the cement sector utilize a lot of coal.¹⁹ despite the strategic value of coal, the coal mining sector has both positive and bad effects. Positive effects include coal mining's influence on constructive (building) and realistic (practical) items. The development of mining roads and ports in remote places, the creation of foreign exchange, the creation of local revenue (PAD), alternate sources for nearby communities, and labor accommodations are all benefits of Indonesia's coal mining sector.²⁰ In addition, the negative impacts of coal mining in Indonesia include some mining companies being accused of not paying attention to environmental sustainability... **Ex-mining areas that are left gaping...** There is till a lack of local government involvement and relationship with mining operations.²¹ The negative impact of mining that is felt, one of which is mentioned above, is the former mining land that is left gaping without any effort to close it back or reclaim it, especially with the existence of PETI, which is one of the large contributors to the existence of unreclaimed former mines. This recurring problem requires the government to take various policies, both in terms of law enforcement and policies that can determine legal certainty in reclaiming ex-mining land, that is, PETI.

¹⁸ Muhammad Burhan Memon et al., "Life Cycle Assessment Model for Small-Scale Coal Mining Operations with Equivalent Coal Output: A Greener Perspective towards Coal Mining," *Environment, Development and Sustainability*, (2024). <https://doi.org/10.1007/s10668-024-05021-6>.

¹⁹ HS Salim, "*Hukum Pertambangan Di Indonesia*", (Jakarta: PT RajaGrafindo, 2005).

²⁰ *ibid.*,.

²¹ *ibid.*,.

A. The direction of Indonesia's coal and mineral mining regulations

In order to accomplish state objectives, Mahfud MD contends that legal politics is “Legal policy or official line (policy) regarding the law that will be enforced either by making new laws or by replacing old laws”.²² Understanding legal politics is crucial because it informs policy decisions about the creation of laws and regulations and is focused on fundamental principles (held beliefs) in order to accomplish state objectives,²³ Such as government policies through legislation in the mining sector.

The study, management, and exploitation of minerals or coal, including general research, exploration, feasibility studies, construction, mining, processing, refining, transportation, and sales, as well as post-mining operations, can be categorized as mining.²⁴ For the principle of sustainability in the context of mining, policymakers address not only the management of limited resource utilization and environmental carrying capacity in extractive businesses but also the human aspects, namely, inclusive economic development, preserving the values of justice and respect for the defense of human rights.²⁵ The implementation of mining is an effort to utilize natural resources sustainably while still paying attention to the environment. Coal and minerals mined in Indonesia are examples of natural riches that God Almighty has bestowed; the location is “certainly” non-renewable, and the formation process takes thousands and even millions of years. Natural resources must be carefully managed and used in order to support the growth of a sustainable and environmentally sound national economy, as their use and exploitation

²² Derita Prapti Rahayu and Faisal, “Politik Hukum Kewenangan Perizinan Pertambangan Pasca Perubahan Undang-Undang Minerba”, *Journal Pandecta*, 16 No. 1 (2021):164-172. <https://dx.doi.org/10.15294/pandecta.v16i1.28013>.

²³ Ibid.,

²⁴ Niken Gustantia Syahaddina, “Upaya Penegakan Hukum Terhadap Pertambangan Batubara Tanpa Izin di Kota Samarinda”, *Journal Risalah Hukum*, 7 No. 2 (2011): 33-53. Retrieved from <https://e-journal.fh.unmul.ac.id/index.php/risalah/article/view/180>

²⁵ DPR, “Kajian Hukum Atas Rancangan Amandemen Undang-Undang No. 4/2009 tentang Mineral dan Batubara”, *Fakultas Hukum Universitas Indonesia*, retrieved from <https://berkas.dpr.go.id/akd/dokumen/K7-RJ-20200515-121607-7204.pdf>

can disrupt and even harm the environment.²⁶ With the concept of sustainable management, a healthy environment is expected to continue to be enjoyed by the next generation.

Indonesia has diverse natural resources, which invite many parties to come to Indonesia to control and seek profits. One of the things that attracts attention is Indonesia's wealth in the mining sector; so many foreign and domestic companies have invested in this field. With so many companies, the role of the state in forming and establishing regulations is needed to maintain rights, increase state profits, and preserve nature.²⁷

Since the nation is founded on the rule of law (*rechstaat*) rather than power (*machstaat*), the nation's and state's existence must be governed by the law. Likewise, a solid legal foundation is necessary for the operation of coal and mineral mining. The MINERBA LAW is the legal foundation that currently governs it. Nonetheless, the Constitutional Court has examined the MINERBA LAW on multiple occasions by persons whose constitutional rights have been infringed by its provisions.²⁸ For example, the Constitutional Court Decision Number 25/PUU-VIII/2010 granted issues related to the determination of criteria for establishing community mining areas and the elimination of the granting of mining business license areas of at least 5000 (five thousand) hectares.²⁹ Regarding the word "after coordinating with the local government," which is controlled in Article 6 paragraph (1) letter e, Article 9 paragraph (2), Article 14 paragraph (1) and paragraph (2), and Article 17 of the MINERBA LAW, the Constitutional Court's ruling Number 10/PUU-X/2012.³⁰ The MINERBA Bill's goal is to control the management and exploitation of coal and minerals in relation to licensing, processing and/or refining, supervision, protection of impacted communities, mining data, sanctions, and changes in

²⁶ Philosophical Foundation, Academic Paper of Draft Law on Amendment to Law Number 4 Year 2009 on Mineral and Coal Mining.

²⁷ Sociological foundation, Academic Paper of Draft Law on Amendment to Law Number 4 Year 2009 on Mineral and Coal Mining.

²⁸ Juridical foundation, Academic Paper of Draft Law on Amendment to Law Number 4 Year 2009 on Mineral and Coal Mining.

²⁹ *Ibid.*,

³⁰ *Ibid.*,

government and provincial government authority and guidance.³¹The issues and legal requirements in mineral and coal management cannot yet be addressed by the current regulations.³²Its implementation is still limited by the Central Government's and Regional Governments' jurisdiction, licensing, safeguarding impacted communities, data and information mining, oversight, and sanctions. Because of this, the use of coal and mineral mining is less efficient and has not been able to produce the best possible added value.³³To become an effective, efficient, and comprehensive legal basis in the implementation of mineral and coal mining, changes must be made to the regulations currently governing these activities under Law Number 4 of 2009 on Mineral and Coal Mining. These regulations are still unable to address developments, issues, and legal requirements in the implementation of minerals and coal.³⁴"Strengthening regulations pertaining to environmental management in mining operations, such as the use of reclamations and post-mining" is one of the topics covered in the 2009 modification of the MINERBA Law.³⁵

The Mining Law provides a legal basis for the renewal and reorganization of mineral and coal mining management and exploitation activities.³⁶It must be acknowledged that the current MINERBA Law has a tendency toward centralization in its political features. This is because district and city governments no longer have the power to decide on mining business licenses due to the MINERBA Law revision (Law

³¹ Ibid.,

³² Ibid.,

³³ Section weighing letter b, Law Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining.

³⁴ Section considering letter c, Law Number 3 of 2020 Concerning the Amendment to Law Number 4 of 2009 Concerning Mineral and Coal Mining.

³⁵ What is meant by reclamation in article 1 paragraph (26) of the MINERBA Law itself is activities conducted throughout the mining business to organize, restore, and improve the quality of the environment and ecosystem so that it can once again function according to its designation. This is part of the general explanation of Law Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining.

³⁶ Suparji and Rafiq Mizi, "Penataan Regulasi Mineral dan Batubara Untuk kesejahteraan Rakyat", *Journal Magister Ilmu Hukum (Hukum dan Kesejahteraan)*, 4 No. 2 (2019): 1-8. <http://dx.doi.org/10.36722/jmih.v4i2.761>.

Number 2 of 2020). Establishing regional regulations for coal and mineral management, among other things. Government Regulation Number 96 of 2021 on the Implementation of Mining Business Activities further highlights the MINERBA Law's political nature.³⁷ furthermore, according to Nur Ariatmoko's research, "Law Number 3 of 2020 has not improved locals' economic development but instead creates a large window for environmental harm because it grants the third party or foreign mining investor unrestricted access to resources".³⁸ One of the most obvious legal politics in the administration of coal and mineral mining is the provision of economic protection for the state and its citizens, even in the case of losses. The following issues are among of the most pressing issues for the 2020 MINERBA Law revision:³⁹

- a. Management and licensing authority;
- b. Renewal of operating license;
- c. Downstreaming or increasing added value;
- d. Divestment;
- e. Not based on a spatial planning basis;
- f. Community mining, reclamation, and post-mining.

The changes or additions to the articles in the Fourth Amendment to the MINERBA Law are:⁴⁰

- a. Reaction to the Constitutional Court's ruling, which required certain changes to the law on the definition of space guarantees and contract extensions;
- b. For business actors who have obtained a Mining Business License (IUP), Special Mining Business License (IUPK), or

³⁷ Joice Soraya, Fathul Hamdani, Eduard Awang Maha Putra, and Lalu Muhammad Azwar, "Perizinan Dalam Pengelolaan SDA Pasca Pengesahan Revisi UU Minerba: Perspektif Hukum Administrasi dalam Konteks Welfare State", *Rio Law Journal*, 5 No. 1 (2024): 225-235, <http://dx.doi.org/10.36355/.v1i1.2>.

³⁸ Nur Ariatmoko, "Analisa Politik Hukum Undang-Undang Minerba Sektor Batubara Indonesia", *Journal Strata Law Review*, 1 No. 1 (2023): 53-63, <https://doi.org/10.59631/slr.v1i1.10>.

³⁹ Nur Fadilah Al Idrus, "Dampak Politik Hukum dan Respon Masyarakat atas Pembaharuan Undang-Undang Minerba", *Journal Penegakan Hukum dan Keadilan*, 3 No. 2 (2022): 114-127. <https://doi.org/10.18196/jphk.v3i2.14898>.

⁴⁰ Esdm, "RUU Minerba Resmi Disahkan Menjadi Undang-Undang", *Ministry of Energy and Mineral Resources* (2025), Retrieved From <https://rb.gy/rkz95h>.

People's Mining License (IPR), the predetermined Mining Business License Area (WIUP), Special Mining Business License Area (WIUPK), or People's Mining Area (WPR) serves as the foundation for spatial and regional planning, and that planning remains unchanged;

- c. Prioritizing domestic coal needs before selling abroad (Domestic Market Obligation/DMO);
- d. Metal Mineral or Coal WIUP is given to cooperatives, small and medium enterprises, and business entities owned by religious community organizations that carry out economic functions by giving priority;
- e. Providing funding for universities from a portion of the profits from the management of WIUP and WIUPK by prioritizing BUMN, BUMD, or private business entities in order to increase independence, educational services, and excellence of Higher Education;
- f. In the context of downstreaming and industrialization, the implementation of WIUP/WIUPK Granting by priority to BUMN or Private Enterprises for increasing added value in the country;
- g. To carry out investigations, research, and/or project development activities in the assigned area, the government may appoint state research institutes, regional research institutions, state-owned enterprises, regionally-owned enterprises, and private business companies;
- h. Business licensing services via the Onlie Single Submission (OSS) system for Mineral and Coal Mining;
- i. Environmental audits as a prerequisite for the contract of Work/Coal Mining Concession Work Agreement (PKP2B) extension, which will be extended to IUPK as part of the Contract/Agreement Operations;
- j. Returning land that overlaps part or all of its WIUP to the state;
- k. Increased commitment to community development and empowerment and affirmation of protection related to community and/or indigenous rights; and
- l. Giving the government till the end of six months to complete the law's implementing regulations.

The fourth amendment to the Minerba Law received criticism from various groups, especially academics. These critics criticized two points of the amendment, namely the involvement of religious organizations and universities. These were considered to have the potential to increase the number of mining business licenses and increase community conflicts with religious organizations and universities.

B. Government Policy on Post-Mining Land Reclamation of Unlicensed Coal Mining

Natural resource management affects environmental sustainability; therefore, the Stockholm conference and several other conferences were held to pay more attention to the environment. All activities,⁴¹ including coal mining, must be carried out with attention to environmental sustainability.

Additionally, coal mining is administered according to environmentally sound and sustainable principles, as confirmed by Article 2 of the MINERBA LAW. This indicates that in order to achieve the welfare of the present and the future, coal mining is done in a planned manner, incorporating sociocultural, environmental, and economic aspects into the whole company.⁴²

The paradigm of good and correct mining management in GMP is that the application of appropriate mining techniques includes the determination of reserves, feasibility studies, construction, mining, processing, transportation, mine closure, and post-mining. To optimize utilization, the application of mining techniques must pay attention to and comply with existing laws and standards. Occupational and health, environment, resource conservation, and value-added aspects are important and interrelated aspects of good mining management. Community independence during operation and post-mining activities

⁴¹ S, Suarni, Ilyas, Anshori Wahid, A.M Yunus "Politik Hukum Pemberantasan Kerusakan Hutan Dalam Menangani Kebakaran Hutan," *Jurnal Al-Qadau Peradilan Dan Hukum Keluarga Islam* 8, no. 2 (2021): 19–36. <https://doi.org/10.24252/al-qadau.v8i2.18509>.

⁴² Satmaidi, Edra Muthia, Arini Azka Wulandari, "Konsep Hukum Pengelolaan Tambang Batubara Berkelanjutan Berdasarkan Pendekatan Daerah Aliran Sungai (Das) Di Provinsi Bengkulu," *Bina Hukum Lingkungan* 2, no. 2 (2018): 198–214. <https://doi.org/10.24970/jbhl.v2n2.16>.

is very important, meaning that companies and governments must be able to transform non-renewable resources into renewable resources.⁴³

In some countries in the world, land reclamation is carried out by changing the function of the former land to be more useful, such as 1). A business and logistics center in Pennsylvania in Luzerne County, a 25-hectare former mine, was reclaimed as a logistics center. Companies such as Adidas, Chewy.com, and Patagonia now rent the land and create 3,700 new jobs; 2) underground railroad tour at Portal 31 mine, Kentucky Lynch; 3). Cattle grazing land in Mongolia, transforming the Ereen mine environment into grassland for cattle grazing; 4). Recreational park in Northumberland, implementing reclamation by constructing a landscape sculpture in the shape of a reclining female figure in a 46-acre community park; 5 Solar installation in Virginia, a 13-acre former mine was reclaimed into a solar power facility that provides 3 megawatts of energy.⁴⁴ The widespread use of coal mining in Europe has contaminated the environment by releasing both organic and inorganic pollutants into many media, particularly soil. These pollutants include polycyclic aromatic compounds and potentially hazardous components. Increased coal mining activities across Europe have led to a rise in the concentration of certain elements in soil. Low molecular weight polycyclic aromatic hydrocarbons make up the bulk of the polycyclic aromatic compounds that were discovered. In contrast, the primary sources of soil pollution in European coal mining regions are discovered to be potentially dangerous metals, such as Zn, Pb, Mn, and Cr.⁴⁵ A few European nations have made the decision to gradually phase out coal-fired power stations. The EU Emission Trading System (ETS) already regulates emissions from power plants. In certain nations, like Germany, the phase-out of coal will be accompanied by the removal of emission allowances. We discover that

⁴³ Budi Hartono, *Strategi Kebijakan Reklamasi Lahan Bekas Tambang Yang Berwawasan Lingkungan Di Kabupaten Kolaka Utara* (Hasanuddin University Graduate Thesis Makassar, 2022), <https://rb.gy/h2yfpr>.

⁴⁴ Rifki Alfaridzi, "Tujuan Dan Contoh Nyata Reklamasi Lingkungan Di Luar Negeri," Shasolo, retrieved from, <https://shasolo.com/tujuan-dan-contoh-nyata-reklamasi-lingkungan-di-luar-negeri/>.

⁴⁵ Abdulmannan Rouhani et al., "A 6-Year Review Status on Soil Pollution in Coal Mining Areas from Europe," *Environmental Geochemistry and Health* 46, no. 10 (2024): 392. <https://doi.org/10.1007/s10653-024-02179-w>.

the welfare implications across EU member states are significantly influenced by the effects of trading requirements in the ETS market. If the German population values a reduction in CO₂ emissions at 65 euros per ton or higher, then a coal phase-out coupled with the unilateral cancellation of allowance is demonstrated to be welfare-enhancing for Germany.⁴⁶ However, some countries have been criticized for managing their environment, such as India, which has been under fire for a number of environmental-insensitive government initiatives, including:

- a). Highway expansions: One of the most significant contributors to deforestation has been the construction and widening of highways;
- b). Industrial zones and special economic zones (SEZs). As India seeks to attract more foreign direct investment and grow its manufacturing base;
- c). Urbanization India's urban population is growing rapidly, requiring the expansion of cities and towns. In cities like Bengaluru, Chennai, and Mumbai, large forested areas have been converted into real estate for residential and commercial purposes. The National Green Tribunal (NGT) has flagged several projects for clearing green cover without adequate environmental clearances.

4. Mining Projects The extraction of coal, iron ore, and other minerals is another significant driver of deforestation. For instance, in central India, mining projects have cleared vast tracts of forests, affecting biodiversity and displacing indigenous communities. States like Jharkhand, Chhattisgarh, and Odisha have seen extensive deforestation for mining activities. policy loopholes and the environmental cost, the government justifies many of these projects under the banner of "development" and "nation-building." While environmental clearances are required for these projects, many activists argue that the clearance process is often fast-tracked, bypassing critical environmental impact assessments (EIAs). The Forest (Conservation) Act of 1980, which was meant to safeguard forests, has seen several amendments that have made it easier for companies and government agencies to acquire forest land for development purposes. Moreover, compensatory afforestation—a mechanism by which developers are

⁴⁶ Christoph Böhringer and Knut Einar Rosendahl, "Europe beyond Coal – An Economic and Climate Impact Assessment," *Journal of Environmental Economics and Management* 113 (2022): 102658. <https://doi.org/10.1016/j.jeem.2022.102658>.

required to plant new trees to offset deforestation—has been criticized as inadequate. While trees are planted in non-forest areas, they rarely replace the ecological value of the original forests that have been lost. Natural forests are complex ecosystems with rich biodiversity, which cannot be recreated simply by planting saplings.⁴⁷

Even though there were still vocal opponents of climate change legislation, including the American Coalition for Clean Coal Electricity, many businesses, including significant FFI members, started to move their effort away from explicit climate change denialism. This took two opposed forms: first, by endorsing climate change laws that would facilitate a transition that would benefit the relevant industry (“pro-legislation”), and second, by rerouting the growing CCM funds through dubious channels.⁴⁸

The open pit mining method used for coal mining in Indonesia contributes to environmental harm, such as the depletion of soil layers, flora and fauna, and forest vegetation. There is significant worry about quantity of adverse effects that result from coal mining. This is why entrepreneurs must carry out reclamation after mining as a form of preventing environmental damage due to mining. There are not enough environmental laws and regulations, particularly those pertaining to post-mining reclamation requirements, to compel legislators to take action and business actors to submit to and comply with environmental regulations.⁴⁹⁵⁰

According to Jimly Asshiddiqie, environmental interests in practice are often defeated by other sectors or policies both in the

⁴⁷ Surendra Singh, “The Development vs Environment Debate”, *Journal of Enviromental And Science*, (2024), 1–2.

⁴⁸ Mirjam O Nanko and Travis G Coan, “Defeating Cap-and-Trade: How the Fossil Fuel Industry and Climate Change Counter Movement Obstruct U.S. Climate Change Legislation,” *Global Environmental Change* 89 (2024): 102919. <https://doi.org/10.1016/j.gloenvcha.2024.102919>.

⁴⁹ N Miftachur R. Habibi Zakiyyatul Mufidah, “Konsep Ecocracy Sebagai Perlindungan Hukum Lingkungan Terhadap Pelanggaran Reklamasi Paska Penambangan,” *Journal Imposium Hukum Indonesia* 1, no. 1 (2019): 2868–3553.

⁵⁰ Amarru Muftie Holish and Aulia Maharani, “Stengthening Constitutional Complaint Authority: Enhancing Citizens’ Constitutional Right Protection in Indonesia,” *Journal of Law and Legal Reform* 4, no. 3 (2015): 345–64. <https://doi.org/10.15294/jllr.v4i3.68129>.

executive technical room, in political forums, and in legislative institutions such as mining and energy, forestry, plantations, investment, tourism, and so on. Thus, if you see this, it is not surprising that the obligation of post-mining reclamation has a very high number of violations. The position of ecological emergency that Indonesia is currently experiencing urges the government to make the environment a central issue in every policy taken. Jimly argues that it is necessary to raise the degree of norms governing the protection of environmental law in the Constitution, so that all laws can be controlled as they must be subject to the Constitution.⁵¹

The results of the analysis of Ardianto Budi Rahmawan and Kenny Cetera in the Minerba Law article 22 letter d, 169A Paragraph (1) and 169B paragraph (5) do not show that these three articles are not in accordance with the concept of PTD because they do not fulfill the aspects of natural resource benefits for the people, equitable distribution of natural resource benefits for the people, people's participation in determining the benefits of natural resources and respect for the people from generation to generation in utilizing natural resources.⁵²

The MINERBA Law only explains reclamation for those who have IUP, as in article 39, "IUP as in article 36 paragraph (1) at least contains: obligation to carry out Reclamation and Post-Mining". Then, the obligations of IUP holders are explained again in Article 99, namely:

- a. IUP or IUPK holders must prepare and submit a Reclamation plan and/or Post-mining plan.
- b. Post-mining land allocation must be followed while implementing reclamation and post-mining activities.
- c. In the implementation of Reclamation carried out throughout the stages of Mining Business, IUP or IUPK holders shall:
 - 1) Balance the amount of land that needs to be cleared with the amount that has been reclaimed; and

⁵¹ Zakiyyatul Mufidah, "Konsep Ecocracy Sebagai Perlindungan Hukum Lingkungan Terhadap Pelanggaran Reklamasi Paska Penambangan." *Journal Impostum Hukum Indonesia*, 1 No. 1 (2019): 2686-3553. <https://eco-entrepreneur.trunojoyo.ac.id/shi/article/view/6381>

⁵² Ardianto Budi Rahmawan and Kenny Cetera, "Kajian Teori Public Trust Doctrine Dalam Kasus Lingkungan: Studi Kasus UU Minerba Baru," *Jurnal Hukum Lingkungan Indonesia* 7 No. 1 (2020). <https://doi.org/10.38011/jhli.v7i1.178>

- 2) Manage the final ex-mining pit as extensively as possible in compliance with legal and regulatory requirements.
- d. In compliance with statutory regulations, IUP or IUPK holders must transfer recoreved or post-mining land to the legitimate owner via the Minister.

At the end of mining production operation activities in article 123A, including:

- a. IUP or IUPK holders at the production operation stage before shrinking or returning WIUP or WIUPK must carry out Reclamation and Post-mining until they reach a success rate of 100% (one hundred percent).
- b. Former IUP or IUPK holders whose IUP or IUPK expires as referred to in Article 121 paragraph (1) must carry out Reclamation and Post-mining until it reaches a 100% (one hundred percent) success rate and place Reclamation guarantee funds and/or Post-mining guarantee funds.
- c. The Reclamation guarantee fund and/or Post-mining guarantee fund that have been placed will be deemed to belong to the Central Government in compliance with the laws and regulations if the WIUP or WIUPK, as mentioned in paragraph (1), satisfy the requirements for re-exploitation.

Then, when the IUP ends and does not carry out reclamation, Article 161B explains that:

- a. Anyone whose IUP is canceled or expires and fails to perform:
 - 1) Post-mining and/or reclamation; and/or
 - 2) The placement of post-mining and/or reclamation guarantee money is punishable by a maximum punishment of Rp. 100.000.000.00 (one hundred billion) and maximum jail sentence of five (five) years.
- b. Former owners of IUP or IUPK may be liable to further criminal punishments in the form of money payments in connection with the fulfillments of reclamation and/or post-mining obligations, in addition to the criminal penalties mentioned in paragraph (1).

The supervision of MINERBA mining business activities, especially post-mining activities, is regulated in Government Regulation Number 55/2010 on the Guidance and Supervision of the

implementation of MINERBA mining business management. Article 13 authorizes supervision in accordance with the area of authority, namely:

- a. The Minister monitors the implementation of mining business management carried out by the provincial government and regency/city government in accordance with their jurisdiction;
- b. The minister, governor, and regent/mayor, in accordance with their authority, will supervise the implementation of mining business activities carried out by holders of IUP, IUPK, or IUPR.

Under Article 16, the following areas are subject to the supervision mentioned in Article 13 paragraph 2: a) mining technical; b). marketing; c). finance; d). management of mineral and coal data; e). conservation of mineral and coal resources; f). occupational safety and health in mining; g). safety of mining operations; h). environmental management, reclamation, and post-mining; i). use of goods and services.

Based on the mining regulations, the exploitation of coal mines continues to be encouraged in order to meet domestic needs and generate foreign exchange for the country. With the massive exploitation of coal mines, problems arise that negatively impact the mining business. these impacts include pollution and environmental destruction both on a local and global scale, which have the potential to cause various diseases. On a local scale, research results show that former coal mining lands that are not immediately reclaimed result in morphological and landscape damage, such as the structure of the former mining land. The land, which was originally in the form of hills, turned into large caves and lakes whose water overflowed and flooded residential areas. Liquid waste from mining pollutes rivers, resulting in a decrease in the quality of water that is the source of life for the surrounding population. Thick soil and coal dust cause a decrease in air quality, which has the potential to cause various diseases, especially various respiratory diseases.⁵³

Table 1. Some regulations related to post-coal mine land reclamation and rehabilitation in Indonesia

⁵³ Syawal, Fauzi and Abdul Bari Azedand Suzanalisa, “Kebijakan Hukum Pidana Dalam Penanggulangan Dampak Lingkungan Hidup Akibat Pengusahaan Pertambangan Batubara Di Kabupaten Sarolangun,” *Journal Legalitas* 9, no. 1 (2017).

<i>Type of Regulation</i>	<i>Purpose of area</i>	<i>Ministry of forestry</i>	<i>Ministry of Energy and Mineral Resource</i>
<i>Act</i>	The whole area	Law Number 41/1999 on Forestry (now incorporated into the Job Creation Law)	Law Number 4/2009 on Mineral and Coal Mining (now Regulation Number 3/2020 on Mineral and Coal Mining)
<i>Government regulation</i>	The whole area	Regulation (PP) Number 76/2008 of the Government concerning reclamation and forest rehabilitation	Government Reclamation and Post-Mining Regulation Number 78/2010
	The whole area	The second Amendment to Government Regulation Number 24/2010 on Forest Area is outlined in Government Regulation Number 105/2015	
<i>Presidential Decree</i>	The whole area	Presidential Regulation Number 28/2011 on the Use of Protected Forest Areas for Underground Mining	
<i>Ministerial Decree</i>	The whole area		Minister of Energy and Mineral Resources Regulation Number. 7/2014 on the Implementation of Reclamation and Post-mining in Mineral and Coal Mining Business Activities
	Forest area	Minister of Environment and Forestry Regulation Number P.50/Menlhk/Setjen/Kum.1/6 /2016 on Guidelines for Borrowing and Using Forest Areas	
	Forest area	The procedure for identifying the area of disturbance and the area of reclamation and revegetation for the computation of non-tax revenues from the use of forest areas is amended by	

	minister of Forestry Regulation Number P. 84/Menhut- II/2014, which amends Minister of Forestry Regulation Number P.56/Menhut- II/2008
Forest area	Minister of Forestry Regulation No. P.4/Menhut-II/2011 on Forest Reclamation Guidelines
Forest area	Regulation Number P.89/Menlhk/setjen/Kum.1/1 1/2016 of the Minister of Environment and Forestry on Planting Guidelines for holders of borrow-to-use permits for forest areas in the context of watershed restoration
Forest area	Regulation Number p.60/Menhut-II/2009 of the Minister of Forestry on the Guidelines for Effective Forest Restoration

Source: *The Republic of Indonesia's Ministry of Forests and Human Rights, 2017*

Research results from Ardiyanto et al. show that regulations on reclamation and rehabilitation in Indonesia are not fully aligned with the concept of ecological restoration because they only contain some of the criteria and indicators of ecological restoration activities. Both the Ministry of Energy and Mineral Resources and the Ministry of Environment and Forestry have regulated the soil remediation section; however, the Ministry of Energy and Mineral Resources has regulated the biodiversity restoration principle, which is not strictly regulated in the Ministry of Environment and Forestry's regulations. Additionally, while the Ministry of Environment and Forestry has included the use of local plant species in a number of its regulations, the use is not very significant because the value is insignificant and has no bearing on the final outcome

of the assessment of the rehabilitation and reclamation success results.⁵⁴ While minerals are non-renewable and can harm the environment when exploited, unlicensed mining activities violate mining regulations and are essentially unregulated by law. As a result, there are a number of detrimental effects that not only the government but also the general public and future generations.⁵⁵ The PPLH Law makes the government responsible for environmental damage that occurs, including the reclamation of post-coal mining land TEPI, but in reality, only a few are followed up by the government to be reclaimed; in actuality, the former mining area still has a lot of holes that are left open. At a national conference, the speaker clarified that the government is in charge of PETI reclamation and can even pursue criminal charges because it involves damaging state finances if the offenders are identified. Still, many cases of miners have not been found, and the state cannot handle all former mining areas that do not have permits.

C. Law Enforcement against Unlicensed Mining

One of the nations with the greatest potential for mineral reserves is Indonesia. Numerous mining operations in Indonesia have resulted from this potential. Although it can increase state revenue, this mining activity is not free from adverse impacts. Mining activities that use chemicals and soil dredging activities cause adverse impacts on mining activities, namely environmental pollution and damage to soil structure. In 2020, at least 3,092 mine pits in Indonesia remained unreclaimed according to the Mining Advocacy Network (Jatam).⁵⁶ The large number of PETI cases and unreclaimed former mines makes law enforcement one of the alternatives to reduce unreclaimed former mines. In Indonesia,

⁵⁴ Ardiyanto W. Nugroho and Ishak Yasir, "Kebijakan Penilaian Keberhasilan Reklamasi Lahan Pasca Tambang Batuara di Indonesia", *Journal Analis Kebijakan Kehutanan*, 14 No. 2 (2017): 121-136.

⁵⁵ Melisa Nasir et al., "Relevansi Regulasi Pertambangan Internasional Dengan Penanganan Covid-19 Di Indonesia," *AL-MANHAJ: Jurnal Hukum Dan Pranata Sosial Islam* 5, no. 1 (2023): 229-40. <https://doi.org/10.37680/almanhaj.v5i1.2073>.

⁵⁶ Perkim, "Penanganan Lahan Pasca Tambang Dan Dampaknya Pada Lingkungan," Retrieved from <https://perkim.id/permukiman/penanganan-lahan-pasca-tambang-dan-dampaknya-pada-lingkungan>.

there are 3 sanctions: administrative sanctions, civil sanctions, and criminal sanctions. For this PETI case, the use of criminal sanctions, according to the author, is quite appropriate, but not providing sanctions for reclaiming former mining excavations is one of the shortcomings of this article according to the author.

PETI in Indonesia itself is an act that is categorized as a criminal offense, as regulated in the MINERBA Law, namely:

- a. A person who conducts mining operations without an IUP, IPR, or IUPK faces a maximum penalty of 10 (10) years in prison and a maximum punishment of Rp. 10.000.000.000.00 (ten billion rupiah), according to Article 158 of the MINERBA Law;
- b. Article 160 divides 3 things that can be subject to punishment, namely:
 - 1) Every person who conducts exploration without having an IUP or IUPK, as referred to in Article 37 or Article 74 paragraph (1), shall be punished with a maximum imprisonment of 1 (one) year or a maximum fine of Rp. 200,000,000.00 (two hundred million rupiah).
 - 2) Any person who has an Exploration IUP but conducts production operation activities shall be punished with imprisonment for a maximum of 5 (five) years and a maximum fine of Rp. 10,000,000,000.00 (ten billion rupiah).

This regulation only provides imprisonment and fines. While environmental problems also require intervention to resolve, reclaiming ex-mining land should be a government priority.

It also inextricably linked to the Supreme Court's ruling in the PETI case in 2019 (number 537/K/Pid.Sus-LH/2020), which denied the defendant Dwi Winarno Ardiyasa's requests to be proven guilty of violating Article 158 of the MINERBA Law by being sentenced 3 (three) months in prison and receiving a fine of Rp.1,000,000,000.00 (one billion rupiah) in lieu of one month of confinement. Several other cases more or less give the same decision, in addition to the low sentence period and fines that can be replaced with confinement, making efforts to reclaim ex-mining land even more difficult to implement.

D. Impact of Unlicensed Coal Mining (PETI)

The mining industry is one of the industrial sectors that the government relies on to bring in foreign exchange; besides that, it also provides employment and, for the Regency/City, is a source of Original Regional Opinion (PAD). Mining activity is an activity that includes exploration, exploitation, refining, and transportation of minerals/mining materials. On the other hand, it is prone to environmental destruction, not a few mining activities invite the surrounding community because of environmental damage, especially mining carried out by not fulfilling the provisions of applicable laws and regulations or mining activities without a license.⁵⁷ Vegetation evolution can be greatly impacted by coal mining, but attempts to lessen these effects and reclaim abandoned mines are hampered by the lack of knowledge about its patterns and underlying causes.⁵⁸

The detrimental effects of PETI operations, encompassing those pertaining to the environment, economy, and society⁵⁹:

- a. Sosial impacts: PETI activities, among other things, impede regional development because they violate the RTRW, can lead to social unrest in the community, damage public infrastructure, and possibly result in health issues and community disease as a result of chemical exposure;
- b. Economic impact: PETI also affects the nation's economy because it may result in a decrease in tax and non-tax state revenue (BNBP). Additionally, it will lead to fuel shortages, economic inequalities in the community, and maybe higher prices for necessities;
- c. Environmental impact: PETI will harm the environment, harm the forest if it is located in a forested area, produce environmental catastrophes, reduce the productivity of

⁵⁷ Igun Nahan, "Tinjauan Yuridis Terhadap Pelaksanaan Reklamasi Setelah Ada Usaha Pertambangan Tanpa Izin," *Journal Wasaka Hukum* 7, no. 1 (2019). <https://ojs.stihsa-bjm.ac.id/index.php/wasaka/article/view/7/4>.

⁵⁸ Lijing Fang et al., "Effects of Coal Mining and Climate-Environment Factors on the Evolution of a Typical Eurasian Grassland," *Environmental Research* 244 (2024): 117957. <https://doi.org/10.1016/j.envres.2023.117957>.

⁵⁹ Kementerian ESDM, Loc. Cit.

plantations and agricultural land, and pollute and turbidize river water. Open mining techniques that are no longer in use on former PETI soil typically leave gaps and pools, making the area unusable. Facilities for treating acid mine drainage are not available for all PETI operations. The acidic puddles and water surrounding PETI have the potential to contaminate river water. PETI also stated that there is a chance of increased PAH accumulation in the environment over time, indicating that the environment may pose serious risks to human health and the environment. Coal exposed directly to the surface has the potential to self-ignite, which could result in forest fires on a large scale.⁶⁰

From the discussion above, it can be concluded that government policy towards the implementation of reclamation of unlicensed coal mining still faces various challenges. Law enforcement is weak and only focuses on crimes, not seeking reclamation accountability from illegal miners who are caught. In addition, non-compliance from mining companies and a lack of resources are obstacles to reclaiming ex-mining land.

Abdul Halim asserts that among other things, mining policy should consider: First, progressive mining law raises awareness that environmental preservation and post-mining reclamation are crucial to reversing various adverse effects on the environment and society; second, the government needs to initiate and test new initiatives to make the non-mining sector the dominant viewpoint in the region.⁶¹

Mahardika et al. also said that “Actions that harm the environment need to be criminalized because they rob, deny, or eliminate the rights of current and future generations to enjoy a clean and healthy environment, as well as damage the ecological function and health of the ecosystem in many ways. The resulting environmental pollution and animal deaths.

⁶⁰ Roland Efe Uwadiae, Eugene Itua, and Adebambo Francis Adesokan, “Forensic Identification of Sources and Ecological Risk Assessment of Polycyclic Aromatic Hydrocarbons in an Aquatic Ecosystem,” *Journal of Environmental Science and Technology* 17, no. 1 (2024): 10–19. <https://doi.org/10.3923/jest.2024.10.19>.

⁶¹ Ifrani, “Penyeimbangan Terhadap Dampak Negatif Kebijakan Pertambangan Batu Bara.” *Bina Hukum Lingkungan*, 28 No. 3 (2022): <https://doi.org/10.7226/jtfm.28.3.279>.

When the environment is damaged or polluted so that it is difficult or even impossible to repair, there is a high possibility that future generations will experience the impacts.⁶² Due to the magnitude of the impact on environmental damage, there must be legal certainty regarding the responsibility of reclaiming land without a license, whether from the government or from the actors who will carry out reclamation. Former mines that are not reclaimed are likely to cause environmental damage.

Additionally, Arman Anwar's research uses negotiations to resolve mining problems by involving local governments that can master the technical and application of negotiations that are expected.⁶³ This can also be a consideration in overcoming the problem of reclaiming former coal mining.

Illegal mining often destroys the land and ignores reclamation obligations in accordance with applicable regulations. This prompts the government to take action to mitigate further damage and address the consequences of such actions. Therefore, there is a need for new policies and the role of the government with several steps that the author proposes below:

1. Reclamation is an attempt to restore the use of land that has been harmed by mining. Regarding businesses' duties to perform reclamation, the government itself has released a number of policies, including those from the Ministries of Environment and Forestry and Energy and Mineral Resources. However, PETI is a challenge for the government because it cannot ensure that companies carry out reclamation. A new policy on PETI reclamation responsibility: a. The government must be in charge of reclamation in order to maintain a good and healthy environment if the offender is unknown; b. if the PETI perpetrator is caught, in addition to

⁶² Mahardika and Muhammad Azhary Bayu in Waspiah Waspiah and Ega Rijal, "Law Reform in Corporate Criminilization in Enviromental Damage Cases in Indonesia," *Journal of Law and Legal Reform* 4, no. 4 (2023): 619–47. <https://doi.org/10.15294/jllr.v4i4.74133>.

⁶³ Arman Anwar, "Dinamika Negosiasi Dan Membangun Kepercayaan Pasca Penutupan Tambang EMAS Gunung Botak Di Kabupaten Buru," *Journal Bina Hukum Lingkungan* 1, no. 1 (2016): 19–35.

the criminal sanctions given, it must also impose sanctions in the form of reclaiming former coal mining land.

2. The government in stopping PETI activities can tighten supervision and provide firmer sanctions for companies and individuals who carry out PETI. Environmental recovery can focus on prevention, repair, and recovery.
3. Apply progressive law to achieve expediency and legal certainty in handling cases that do not solely focus on rigid rules.
4. Government supervision must be increased, and sanctions must be imposed on those who do not exercise careful supervision.
5. Cooperation between the public and private sectors. These three sectors working together is crucial in combating PETI; the government can highlight licensing laws and regulations to enforce penalties, the private sector can be involved by working with the government to reclaim post-mining land, and the community has an important role, because sometimes government supervision, the community can participate by reporting when there are suspicious activities or PETI.

Furthermore, Brenda et.al's study on environmental exposure near ports and industrial areas recommended that communities be continuously monitored through biomonitoring in order to identify potential sources of environmental exposure, particularly for populations near industrial production areas.⁶⁴⁶⁵ The authors also

⁶⁴ Brenda Rodrigues Chagas et al., "The First Report of Environmental Exposure to Barium in 10 Localities Close to Industrial Areas and Ports in the Amazon," *International Journal of Environmental Research and Public Health* 22, no. 1 (2025). <https://doi.org/10.3390/ijerph22010109>; Hejian Yin et al., "A Design Approach of Panel Size for the Cooperative Development of Cropland Protection and Coal Mining in a Coal-Cropland Overlapping Area," *Environmental Science and Pollution Research* 31, no. 9 (2024): 14270–83. <https://doi.org/10.1007/s11356-024-32114-6>.

⁶⁵ Brenda Rodrigues et. al, The First Report of Environmental Exposure to Barium in 10 Localities Close to Industrial Areas and Ports in the Amazon, *International Journal of Environmental Research and Public Health*, 22 No. 1 (2024); 109. <https://doi.org/10.3390/ijerph22010109>. In another article from Hejian Yin, et. al, design approach of panel size for the cooperative development of cropland protection and coal mining in a coal-cropland overlapping area, *Environmental*

suggested that water near mining that is used by the surrounding community should be subjected to regular health checks.

Irina pavlova dovbiy dan Natalia Sergeyevna Dovbiy say in their article that “аскрыто наличие существенных противоречий между глобальными игроками мировой экономики по отношению к срокам и формам обеспечения энергопечения энергоперехода и основана важность для придерживаться общемировых тенденций в областиклимата и энергоперехода.”^{66,67} In the climate transition, Russia should also comply with the global trend of sustainable energy and financial transition, at least Indonesia can also consider the global trend on the environment with sustainable energy and financial transition on the environment.

According to the author, the most important thing in overcoming this unlicensed mining problem is to involve all sectors, including the

Science and Pollution Research, 31 (2024): 14270–14283, <https://link.springer.com/article/10.1007/s11356-024-32114-6>. Also suggested consequently, a design strategy based on enhanced particle swarm optimization was presented in this paper. When compared to particle swarm optimization and the enumeration method, the results showed that the method could rapidly determine the ideal panel size. Additionally, the cropland will be safeguarded and the cost will be decreased if the longwall panel is mined in accordance with the size specified by the method. In a region where coal and crops overlap, this study can offer technical assistance for the joint development of agricultural protection and coal mining.

⁶⁶ Irina P.Dovbiy and Natalya S.Dovbiy, “Sustainable Finance in Addressing the Challenges of Energy Transition and Climate Change Mitigation,” *Financial* 16, no. 1 (2024): 109–24. <https://doi.org/10.31107/2075-1990-2024-1-109-124>; Xuelong Li, Zuoyong Cao, and Youlin Xu, “Characteristics and Trends of Coal Mine Safety Development,” *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 47, no. 1 (2025): 2316–34. <https://doi.org/10.1080/15567036.2020.1852339>.

⁶⁷ Irina pavlova dovbiy and Natalia Sergeyevna Dovbiy, Sustainable finance in addressing the challenges of energy transition and climate change mitigation, 2 South Ural State University, Chelyabinsk, Russian Federation. <https://doi.org/10.31107/2075-1990-2024-1-109-124>. and in another article the results of his research in china emphasized that the government should take preventive and supervisory measures in order to strengthen safety production and avoid coal mining accidents, in the Xuelong, Zuoyng Cao and Yulin Xu, 2020, Characteristics and Trends of Coal Mine Safety Development, ournalenerfy source part a: recovery, utilization, and environmental effects. <https://doi.org/10.1080/15567036.2020.1852339>.

government, law enforcement, the private sector, and the community. With good cooperation, carrying out post-mining land reclamation will not be too difficult. Still, again, the obstacle is the lack of supervision and legislation that is too procedural, even in court, making it difficult to determine and find perpetrators of unlicensed mining.

Conclusion

Indonesia, which has the potential of coal natural resources, makes it one of the sources of state revenue. Still, unfortunately, the former coal mining excavation land, especially PETI, is one of the obstacles to reclamation. Examine government regulations on the reclamation of post-mining land from unauthorized coal mining, such as the Minerba Law and various government regulations requiring reclamation by official permit holders. However, law enforcement against illegal mining is still weak. Existing policies often only provide criminal sanctions or fines without prioritizing land reclamation. In addition, the government is responsible for reclaiming PETI in accordance with the PPLH Law, but this has not been maximized. The significant quantity of PETI that have not been reclaimed demonstrates this. This article suggests that the government should emphasize accountability to PETI miners to be responsible for reclaiming ex-mining land. In addition, this article also seeks to improve the effectiveness of government policy on the legal certainty of who is responsible for carrying out PETI reclamation through a statutory and judicial approach. This environmentally-based approach requires a more sustainable approach to the environment and encourages collaboration so that post-mining land reclamation can be effective. Thus, sustainable exploitation of natural resources and environmental sustainability can go hand in hand.

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