

REFORM OF MINING AND ENERGY LAW IN INDONESIA: THE CHALLENGES OF THE TRANSITION TO GREEN ENERGY AND ECOLOGICAL JUSTICE

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Abstract

Economic and legal reforms in Indonesia's mining and energy sectors, introduced through the Mining and Energy Law No. 2 of 2025, establish a progressive framework that supports mineral downstreaming, equal opportunities for state-owned enterprises and SMEs, and alignment with the 2025 National Energy Policy (KEN) to ensure energy security. However, the transition to green energy faces multiple challenges: resistance from the fossil fuel industry, a revision of renewable energy targets from 23% to 17–19%, deforestation caused by nickel mine expansion, and social inequality resulting from the closure of coal-fired power plants, which threatens workers in producing regions. Ecological justice—as a constitutional right to a healthy environment (1945 Constitution, Article 28H)—demands a Just Transition framework akin to the JETP, the integration of ESG principles, and regulatory harmonisation to balance economic, social, and environmental considerations. This systematic legal literature review concludes that holistic reform is necessary for Indonesia to achieve Net Zero Emissions by 2060 in a fair and sustainable manner, with recommendations for harmonising the Mining Law and the Job Creation Law, as well as strengthening the participation of indigenous communities.

Keywords: reform of the Mining Law, green energy transition, ecological justice, mining downstreaming, just energy transition, Indonesia's JETP, KEN 2025.

Introduction

Indonesia, as an archipelagic nation with abundant natural resource reserves, has long relied on the mineral and coal mining sectors as well as fossil fuels to support national economic growth (Prabowo et al., 2025). By 2025, this sector is projected to generate export earnings of hundreds of billions of US dollars through the downstream processing of nickel, coal, and other extractive commodities, serving as the backbone of the State Budget and creating employment for millions of people (Ivanovich & Hidriansjah, 2026). However, this reliance creates a structural dilemma between economic development and environmental sustainability.

Economic legal reforms in the mining sector were marked by the enactment of Law No. 2 of 2025 on the Fourth Amendment to Law No. 4 of 2009 on Mineral and Coal Mining (the Minerba Law) (Republic of Indonesia, 2025a). This law strengthens downstream processing, the granting of priority permits to state-owned enterprises, cooperatives and SMEs, and the fulfilment of Domestic Market Obligations (DMOs), in

response to a Constitutional Court ruling and demands for more transparent governance (Prabowo et al., 2025).

In the energy sector, the National Energy Policy (KEN) and the National Energy Master Plan (RUEN) promote the diversification of energy sources, although the fossil fuel mix still accounts for over 80% of the national electricity supply (Barber et al., 2002). Indonesia's oil reserves are projected to be depleted in 9.5 years and coal reserves in 62.4 years at current production rates, necessitating an urgent transition to renewable sources to ensure energy security (Qoiriyah et al., 2024). Indonesia's international commitments through the Paris Agreement and the Just Energy Transition Partnership (JETP), launched at the 2022 G20 Bali Summit, are the main drivers of reform. By November 2025, the JETP had mobilised USD 3.1 billion for clean energy projects such as Muara Laboh and electrification, with a target of a 31.89% emission reduction on its own or 43% with international support by 2030 (Siddiq et al., 2025).

The challenges of the green energy transition stem from resistance within the fossil fuel industry, with the revision of the renewable energy mix target from 23% to 17–19% by 2025 reflecting the government's hesitation to move away from coal and coal-firing. This is exacerbated by the dependence of regions such as East Kalimantan, where the extractive sector accounts for 40% of provincial revenue through coal royalties. Ecological justice, as a progressive legal principle, demands equitable access to affordable and environmentally friendly energy, as mandated by Article 2 of the Energy Law on equitable efficiency (Nancy & Miharja, 2026). However, extractive practices often cause water and soil pollution, as well as deforestation, harming local communities and indigenous peoples in the vicinity of mining areas (Barber et al., 2002).

Criticism from civil society organisations such as WALHI views the revision of the Mining Law as a step backwards, as it disregards the state's role in sustainable management and facilitates collusive governance through the prioritisation of permits without tender (WALHI, 2025). Furthermore, the environmental audits required for the renewal of work contracts do not yet fully ensure accountability (Idrus, 2022a). The legal economy of this sector faces a conflict between fiscal incentives for foreign investment—such as the more than 30 nickel smelters expected to be operational by 2025—and the principles of sustainable development (Rahimallah, 2022). Downstreaming increases added value, but often comes at the expense of ecosystems and the public's right to a healthy environment as guaranteed by Articles 28H and 33 of the 1945 Constitution (Ivanovich & Hidriansjah, 2026).

The transition to green energy requires legal reforms that integrate carbon capture and storage (CCS/CCUS), green investment legislation, and environmental taxation to fund renewable infrastructure (Siddiq et al., 2025). However, social inequalities resulting from the closure of coal-fired power plants have the potential to cause mass unemployment in producing regions, highlighting the importance of a just transition (Qoiriyah et al., 2024). Ecological justice in the Indonesian context involves

recognising indigenous peoples' rights to customary lands and their participation in energy decision-making, as recommended in the principles of a just energy transition (Nancy & Miharja, 2026). This injustice is evident in the deforestation of 55,000 hectares for energy crop plantations for co-firing, which actually hinders the Net Zero Emission target (Barber et al., 2002).

Therefore, reforms to mining and energy legislation must be holistic, with harmonisation between the Mining Law, the Energy Law and the National Energy Policy (KEN) to balance economic, environmental and social interests. This approach is aligned with Sustainable Development Goals (SDGs) 7, 13, and 16, as Indonesia faces the risk of an economic decline of up to 65% in fossil-dependent regions should the transition fail (Qoiriyah et al., 2024).

This article therefore aims to analyse the dynamics of economic law reform in the mining and energy sectors, focusing on the challenges of the green energy transition and the achievement of ecological justice. Through two main discussions, this study presents strategic recommendations for strengthening progressive regulations to achieve sustainable development in Indonesia.

Research Methodology

This study employs a normative legal research approach using a systematic legal literature review method, analysing legislation relating to economic law reform in the mining and energy sectors (Minerba Law No. 2/2025, the Job Creation Law, KEN, RUEN), international policy documents (the Paris Agreement, JETP), as well as secondary literature such as legal journals, research institution reports (WALHI, ICW, ESDM), and official statistical data to comprehensively outline the challenges of the green energy transition and ecological justice (Myeong et al., 2022); (Eliyah & Aslan, 2025).

Results and Discussion

Economic Law Reform in the Mining and Energy Sectors in Indonesia

Economic law reform in Indonesia's mining sector has gained significant momentum following the enactment of Law No. 2 of 2025 on the Fourth Amendment to Law No. 4 of 2009 on Mineral and Coal Mining (the Minerba Law), which was passed on 18 February 2025 by the Indonesian House of Representatives (Prabowo et al., 2025).

This new Mining Law is a direct response to the Constitutional Court's (MK) ruling, which overturned discriminatory provisions such as the requirement for a minimum WIUP area of 5,000 hectares and the 15-year priority for small-scale mining, thereby opening up broader opportunities for participation by small businesses (Rahimallah, 2022). One of the main pillars of the reform is the equitable distribution of economic benefits through the prioritisation of the granting of Mining Business Licence Areas (WIUP) and Special Mining Business Licence Areas (WIUPK) to state-owned enterprises (SOEs), regional-owned enterprises (ROEs), cooperatives, SMEs, and

business entities owned by religious community organisations, without an auction process, to support downstream processing and national energy security (Rahimallah, 2022).

These priority policies are set out in Articles 51A, 51B and 75 of the 2025 Mining Law, which enable SMEs to scale up to become suppliers to large industries with the potential for annual turnover in the billions of rupiah, whilst also promoting local economic self-reliance in mining regions (Herdianto & Satory, 2025). Downstreaming has become a key focus of economic policy, with 90% of downstreaming projects up to 2040 originating from the mining sector, such as nickel (reserves of 5.9 billion tonnes) and bauxite, alongside a ban on raw material exports that has increased the value-added of nickel exports tenfold since 2019 (Putra, 2024).

The Domestic Market Obligation (DMO) has been reaffirmed to ensure that domestic coal demand is met before exports, which impacts the coal industry although it may potentially squeeze companies' export margins (Idrus, 2022b). Governance enforcement has been strengthened through environmental audit requirements for the extension of Work Contracts (KK) and PKP2B into IUPKs, as well as the integration of licensing via the Online Single Submission (OSS) system to enhance efficiency and transparency (Rahimallah, 2022). Criticism has emerged from WALHI and ICW, who view this reform as a step backwards because it reduces the state's role as the primary manager and facilitates rent-seeking through the prioritisation of permits without tendering, which has the potential for collusion (Idrus, 2022a).

In the energy sector, reforms are aligned with Government Regulation No. 40 of 2025 on the National Energy Policy (KEN), which replaces the 2014 KEN, targeting a 72% share of renewable energy (EBT) by 2060 through coordination with the RUKN and PLN's RUPTL 2025–2034. KEN 2025 promotes solar energy to 2.8% by 2030 and 32% by 2060, whilst reducing coal from 41.6% to 7.8%, although fossil fuel subsidies continue to pose a major obstacle to the transition. The economic impact of the reforms is evident in increased fiscal revenue from mining, with mineral downstreaming bolstering the state budget through royalties and taxes, as well as job creation in smelters and local supply chains (Rahimallah, 2022).

Institutionalisation involves the Directorate General of Mineral and Coal Resources at the Ministry of Energy and Mineral Resources (ESDM) for oversight, with the extension of production operation periods for integrated mines, supporting energy self-sufficiency and the government's 'Asta Cita' policy (Prabowo et al., 2025). Legal and economic challenges include the conflict between foreign investment incentives and good governance, where the prioritisation of state-owned enterprises (SOEs) must be balanced with transparency to avoid oligopolies (Idrus, 2022a).

Overall, these reforms establish a progressive economic legal framework, although further harmonisation with the Job Creation Law is required to maximise the benefits for the people and ensure a sustainable transition. In short, these new

regulations serve as a solid foundation for downstream processing and energy self-reliance, but they still need to be integrated with the Job Creation Law so that the benefits are truly felt by ordinary people and the transition to green energy can proceed smoothly. In this way, the economic potential of nickel, coal and renewable energy can be maximised whilst safeguarding the environment for future generations.

The Transition to Green Energy and Ecological Justice

The green energy transition in Indonesia is a process of shifting from a dominance of fossil fuels (coal accounting for 41.6% of the energy mix) towards new and renewable energy (NRE) to reach 72% by 2060, in line with the 2025 National Energy Policy (KEN), as highlighted by the Indonesia Energy Transition Outlook (IETO) 2025, which highlights coal dependency as a barrier to a low-carbon (Tampubolon et al., 2022). Key challenges to the transition include a weak policy framework, limited funding, slow technological innovation, and an unfair transition for fossil fuel sector workers, with the new renewable energy mix at just 16% in 2025—far short of the 23% target (Langer, 2024).

The Just Energy Transition Partnership (JETP) provides USD 20 billion to implement the Just Transition Framework with its nine standards, focusing on economic diversification and the protection of vulnerable groups through an updated Comprehensive Investment and Policy Plan (CIPP) (Abram et al., 2022). Ecological justice is a constitutional right to a healthy environment (Article 28H(1) of the 1945 Constitution) and sustainable economic management (Article 33 (4), addressing injustices such as ecocide and the public's right to sue (Damanik et al., 2026) . The expansion of nickel mining has caused the deforestation of 5,700 hectares in the Central Halmahera River Basin (2021–2023), polluted rivers such as the Sagea and caused flash floods, depriving indigenous communities of their rights to clean water and the biodiversity of Wallacea (Barber et al., 2002) .

The social impacts of the transition are evident in East Kalimantan, where the closure of coal-fired power stations risks the loss of hundreds of thousands of jobs, forcing cultural and economic adaptation without adequate just transition programmes (Ringkasan et al., 2024). The principles of a just transition emphasise socio-ecological restructuring, the integration of justice into participatory energy planning, and the reallocation of fossil fuel subsidies to renewable energy to avoid social unrest in coal-producing regions (Aryanto, 2023) .

The implementation of ESG (Environmental, Social, Governance) in energy regulation faces a gap between the Environmental Law and international standards, posing a risk of financial penalties and legal action for non-compliant companies (Siddiq et al., 2025) . The funding challenge for the transition amounts to Rp350 trillion via the JETP, but continued fossil fuel subsidies are undermining renewable energy, whilst the national solar power programme needs to be accelerated to achieve industrial self-

reliance (Siddiq et al., 2025). Ecological justice demands broad standing for environmental organisations and the recognition of the rights of nature, plus Anti-SLAPP legislation to protect environmental defenders from criminalisation (Damanik et al., 2026).

The 2025 Review reveals high ambitions but misguided action: prioritising the technical and economic aspects of coal-fired power plants over the environment, with the April 2025 Energy Transition Roadmap ignoring emissions and premature deaths caused by pollution. Progressive legal strategies include a definitive phase-out schedule for coal-fired power plants, the reallocation of subsidies to renewable energy, and regulatory harmonisation for an inclusive green economy (Putri et al., 2023).

In the Nusantara National Capital City (IKN), the transition requires 1,550 MW of electricity, with 200 MW by 2030; this presents an opportunity for economic diversification but carries the risk of inequality if local communities are not involved (Budiarto et al., 2019). Strengthening competent human resources, technological research, and access to affordable energy are key, with government-regulator collaboration to ensure renewable energy reaches all segments of society (Hidayati et al., 2024).

Overall, the transition to green energy and ecological justice requires holistic legal reform to balance three key pillars: the economy through green investment, the social sphere through a just transition for fossil fuel workers, and the environment through emissions reduction and ecosystem conservation. In short, it is like building a sturdy, eco-friendly home—one that is energy-efficient yet ensures the well-being of its inhabitants and the greenness of its grounds. This approach is in line with Sustainable Development Goals (SDGs) 7 (affordable clean energy), 13 (climate action), as well as the constitutional right to a sustainable life for future generations as mandated by the 1945 Constitution, Article 28H and Article 33(4).

Conclusion

Economic and legal reforms in the mining and energy sectors, through the Mining and Energy Law No. 2 of 2025, have established a progressive framework that supports downstream processing, equal opportunities for state-owned enterprises and SMEs, and alignment with the 2025 National Energy Policy for national energy security. However, the main challenges lie in resistance from the fossil fuel industry, social inequality resulting from the closure of coal-fired power stations, and deforestation caused by mining expansion, which threatens sustainability. Overall, these reforms have succeeded in increasing economic value-added but remain vulnerable to collusive governance and regulatory inconsistencies.

The transition to green energy via the JETP and the just transition framework promises a 43% reduction in emissions by 2030, but is hampered by downwardly revised renewable energy targets (17–19%), ongoing fossil fuel subsidies, and a lack of

indigenous peoples' participation in environmental justice. The conflict between economic development (nickel downstream processing) and environmental conservation demands a holistic approach that integrates ESG, carbon trading, and environmental litigation rights to prevent ecocide.

In short, this reform is like a ship that is already sailing at full speed but needs a new compass to avoid sinking in the storm of climate change. Indonesia must accelerate the harmonisation of the Mining Law, the Job Creation Law and the Energy and Mineral Resources Law so that the transition to green energy is not only ambitious but also ecologically just, realising SDGs 7 and 13 and ensuring sustainable well-being for the people and future generations.

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