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GREEN MINING IN NIGERIA: LEGAL LANDSCAPE AND RENEWABLE ENERGY CONTRIBUTIONS

Introduction

Nigeria, a country endowed with abundant mineral resources, stands at the crossroads of a critical junction – the mining sector. As the nation grapples with the complexities of harnessing its mineral wealth, there emerges a compelling need to scrutinize the legal dimensions governing mining activities and explore avenues for aligning the sector with the global shift towards renewable energy in a bid to achieve net zero emissions by 2060.

Legal Framework Overview

The Nigerian Minerals and Mining Act of 2007 (Chapter N162 Laws of the Federal Republic of Nigeria 2004 (the Mining Act) and the Minerals and Mining Regulations 2011 are the principal laws that govern the Nigerian mining landscape. However, challenges persist, including bureaucratic bottlenecks, inconsistent enforcement, and gaps in the regulatory framework.

The government has demonstrated a commitment to addressing these issues through initiatives such as the Mining Cadastre Office, designed to streamline licensing procedures. Nevertheless, stakeholders have emphasized the need for ongoing reforms to enhance transparency and efficiency.

Mining activities, while pivotal for economic development, have long been associated with substantial emissions of greenhouse gases (GHGs), exacerbating environmental degradation. Recognizing the critical need for sustainable practices, there is a compelling argument for the establishment of a comprehensive regulatory framework aimed at curbing and ultimately eliminating GHG emissions within the mining sector. This briefing note advocates the adoption of renewable energy solutions as a viable means to address this environmental challenge.

Possible Challenges in the Nigerian Mining Sector Directly Affecting the Attainment of Green Mining.

- **Low Mechanization:** Artisanal and small-scale mining, comprising 70% of activities, lacks advanced tools and faces funding challenges. Mechanization is hindered, affecting efficiency and productivity in the sector which ultimately affects the ability to adopt green mining measures with regards to equipment.
- **Inadequate Funding:** Given the capital-intensive nature of mining, securing sufficient funding is crucial for sector growth. This challenge trickles down to the capacity of investors or mining companies being able to procure and establish necessary equipment and tools for the implementation of green mining practices.
- **Absence of a Legal Framework for Regulation and implementation of green mining practices.**

Sustainable Mining Practices and International Perspective

In recent years, there has been a growing emphasis on sustainable mining practices globally, and Nigeria is no exception. Environmental concerns related to mining activities have prompted a shift towards responsible and eco-friendly approaches. Green mining initiatives prioritize energy efficiency through the adoption of advanced equipment, including electric vehicles, drones for aerial surveys and monitoring helps in efficient data collection, reducing the need for ground exploration and minimizing the disturbance to local ecosystems also use of energy-efficient machinery. Integration of renewable energy sources, such as solar and wind power, further aims to reduce the environmental impact associated with traditional fossil fuel reliance. To mention but a few, the following are possible modes of enhancing efficiency and minimizing environmental consequences in mining:¹

- Shutting down illegal and unregulated mines:

Addressing illegal mining is crucial for global environmental sustainability and adherence to quality standards. Due to the absence of control and regulation, these mines lack environmental, human rights, and quality standards which cause harm to the environment as a whole. An example of the dangers of illegal mining activities can be inferred from the recent

¹ <https://web.mit.edu/12.000/www/m2016/finalwebsite/solutions/greenmining.html>

explosion in Ibadan, Nigeria which was alleged to be as a result of stored explosives by illegal miners in a residential area.²

- Implementing recently discovered green mining technologies:

In the pursuit of sustainable mining, innovative strategies are deployed to minimize environmental impact and enhance resource efficiency. Reprocessing waste materials extracts additional usable metals, addressing the challenge of waste generation. Advanced dust suppression techniques, such as pre-wetting and mist cannons, effectively control airborne particles during mining processes.

- Research and Development of Green Mining Technology.
- Choosing environmentally friendly general mining processes.

Comparisons with international best practices provide valuable insights for Nigeria's mining sector. Countries like Canada, Australia, and Norway have successfully integrated sustainable mining practices into their regulatory frameworks. Lessons learned from these models can inform policy reforms and guide Nigeria towards a more sustainable and globally competitive mining industry.

Australia's commitment to land rehabilitation after mining activities and Canada's stringent environmental impact assessments are exemplary. Norway's sovereign wealth fund, derived largely from its oil and gas industry, demonstrates the potential for creating financial reserves from non-renewable resources for future generations.



² <https://dailypost.ng/2024/01/24/ibadan-explosion-mining-society-seeks-regulations-for-explosives-handling/>

Renewable Energy Potential

Nigeria's mineral wealth extends beyond its economic value; it holds keys to advancing renewable energy goals. Minerals like lithium, cobalt, and rare earth elements are essential components in the production of batteries for electric vehicles and renewable energy storage systems. As the global demand for clean energy rises, Nigeria's mining sector has the potential to play a significant role in supporting the transition.

Exploring and extracting these minerals responsibly could position Nigeria as a key player in the renewable energy supply chain. This dual-purpose mining approach not only meets economic objectives but also contributes to global efforts to combat climate change.

Investment and Innovation

Incentivizing investment in sustainable mining practices requires a delicate balance between profitability and environmental responsibility. Nigeria must create an environment where investors are enticed by the promise of returns while adhering to stringent environmental and social standards. Adoption of free import duties for green mining equipment, reduced royalties, and tax holidays for companies that comply with the adoption of green mining practices.

Innovations within the mining industry are pivotal to achieving this balance. The integration of Artificial Intelligence (AI) for predictive modeling, real-time monitoring, and optimization of mining processes enhances efficiency and reduces resource wastage. Moreover, collaboration between the private sector, government, and research institutions can foster technological breakthroughs that align mining activities with renewable energy objectives.

Conclusion

In navigating the nexus between mining in Nigeria, the legal landscape, and the potential contributions to renewable energy, it is evident that a holistic approach is essential. Reforms in the regulatory framework, technological innovation, responsible corporate practices, and drawing from international best practices are integral to the success of this endeavor.

The global mining sector is proactively adopting sustainable mining measures. Through the incorporation of renewable energy, investment in energy-efficient technologies, and the implementation of robust monitoring systems, mining companies are transforming their approach to energy consumption and environmental impact. These strategies not only result in cost savings and operational efficiency but also underscore the industry's dedication to social and

environmental responsibility. In the pursuit of a greener future, effective energy management remains a crucial factor in shaping the long-term sustainability of the mining sector.

As Nigeria positions itself to harness its mineral wealth, the integration of sustainable mining practices and a focus on renewable energy can transform the mining sector into a catalyst for economic growth and environmental stewardship. The journey towards a greener and more sustainable future requires a collaborative effort from government, industry players, and local communities, each playing a vital role in steering the trajectory of Nigeria's mining sector.