INTERNATIONAL ROUNDABLE OF MINING ASSOCIATIONS

Ulaanbaatar, Mongolia
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Theme: Supply and Demand of Critical Minerals for EVs and Clean Energy Technologies by 2030

Global Supply and Demand Dynamics

By 2030, the global demand for critical minerals such as lithium, cobalt, nickel, graphite, and rare earth elements is projected to soar, driven by the rapid adoption of electric vehicles (EVs) and clean energy technologies. These minerals are essential to produce batteries, wind turbines, and other green technologies crucial for the transition to a low-carbon economy.

1. **Lithium:** Demand for lithium is expected to quadruple by 2030 due to its critical role in lithium-ion batteries for EVs and energy storage systems.
2. **Cobalt and Nickel:** Both minerals are vital for battery production. Cobalt's demand is set to double, while nickel's demand could increase by a factor of 2.5 to 3 times by 2030.
3. **Graphite:** As a key component of battery anodes, the demand for graphite is also anticipated to rise significantly, potentially doubling in the same period.
4. **Rare Earth Elements:** These elements are crucial for manufacturing permanent magnets used in wind turbines and EV motors. Their demand is projected to increase substantially, with some estimates suggesting a doubling by 2030.

Impact of Carbon Emission and Climate Change Policies

Global carbon emission reduction targets and climate change policies are pivotal in shaping the demand for these critical minerals. Key policy drivers include:

1. **Net-Zero Emission Targets:** Countries and corporations worldwide are setting ambitious net-zero emission targets, necessitating a significant increase in clean energy technologies.
2. **EV Adoption Policies:** Government incentives, subsidies, and regulations promoting the adoption of EVs are accelerating the shift from internal combustion engines to electric powertrains, directly impacting mineral demand.
3. **Renewable Energy Expansion**: Policies promoting the expansion of renewable energy sources, particularly wind and solar, are boosting the need for minerals essential for energy storage and generation.

Sustainable Practices and Green Mining:

1. **Renewable Energy Integration:** Utilizing renewable energy sources for mining operations can significantly reduce greenhouse gas emissions. Solar, wind, and hydroelectric power are increasingly being integrated into mining projects.
2. **Eco-Friendly Mining Techniques:** Methods such as in-situ leaching, where minerals are dissolved and extracted with minimal surface disruption, are being explored to reduce environmental footprint.

Technological Innovations:

1. **Advanced Extraction and Processing Technologies**: Innovations such as automation, artificial intelligence, and improved ore processing techniques can enhance efficiency, reduce costs, and minimize environmental impact.
2. **Recycling and Circular Economy:** Developing efficient recycling processes for batteries and other components can reduce the demand for virgin materials and mitigate environmental impacts.

Strategic Partnerships and Investments:

1. **Public-Private Collaborations:** Collaborations between governments, mining companies, and technology providers can drive innovation and infrastructure development. Public funding and incentives can support sustainable mining initiatives.
2. **Vertical Integration:** Some companies are pursuing vertical integration, controlling the supply chain from mineral extraction to battery production, to ensure stability and sustainability.

Market Opportunities:

1. **Growing EV Market:** The rapid expansion of the EV market presents significant opportunities for mining companies that can reliably supply the necessary materials. This demand is expected to drive substantial growth and investment in the sector.
2. **Carbon Credits and Sustainability Certifications:** Mining companies that adopt sustainable practices can benefit from carbon credits and gain competitive advantages through sustainability certifications, appealing to environmentally conscious investors and consumers.

Focus on Asian Markets in 2024

Asia holds a strategic advantage in the critical minerals market due to its established supply chains, significant processing capacity, and substantial investments in mining and refining operations. Key factors include:

1. **Processing Dominance:** Asia dominates the processing of lithium, cobalt, and rare earth elements, giving it significant control over the global supply chain.
2. **Investment in Mining:** Asian countries are investing heavily in both domestic and international mining projects to secure a stable supply of critical minerals.
3. **Technological Advancements:** Advances in extraction and processing technologies in Asia are enhancing efficiency and reducing environmental impacts.

Proposal for a Global Mining Associations Convening in Mongolia

Justification:

1. **Rich Mineral Resources:** Mongolia is rich in mineral resources, including significant deposits of copper, gold, coal, and rare earth elements, making it a strategic location for discussions on critical minerals.
2. **Geopolitical Neutrality:** Mongolia's geopolitical neutrality and its position between major economies like China and Russia provide a unique platform for international collaboration.
3. **Infrastructure Development**: Recent improvements in Mongolia's mining infrastructure and its commitment to sustainable mining practices make it an attractive venue for global mining stakeholders.

Agenda for the International Roundtable:

1. **Assessment of Global Supply and Demand Trends:** Analysis of current and future demand for critical minerals and the capacity to meet this demand.
2. **Sustainable Mining Practices:** Discussions on best practices for sustainable mining to minimize environmental impact and ensure long-term resource availability.
3. **Technological Innovations:** Exploration of advancements in mining and processing technologies that can enhance efficiency and reduce carbon footprints.
4. **Strategic Partnerships and Investments:** Opportunities for forging strategic partnerships and investments to bolster the global supply chain.
5. **Policy and Regulatory Frameworks:** Examination of international policies and regulations that affect the mining and supply of critical minerals.

By convening in Mongolia, mining associations can leverage their respective country's strategic resources and to foster global cooperation, drive technological innovation, and ensure the sustainable supply of critical minerals essential for the green energy transition.