Written Statement

Committee on Natural Resources Republicans Virtual Forum
"Critical Minerals: Addressing Supply Chain Challenges and Rising Demand."

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Distinguished Members of the Committee, thank you for the opportunity to appear before you today at this virtual forum and to present the International Energy Agency's (IEA's) latest analysis on critical minerals.

A brief overview of the IEA

Since the founding of the IEA almost 50 years ago, the United States has been a crucial pillar for the Agency. U.S. leadership and support has come from across the government, including the Senate, the House of Representatives, the White House, the Department of State, the Department of Energy and the National Labs.

Since the IEA's founding in 1974, we have evolved, expanding to become the world's leading authority on global energy issues, providing data, analysis and advice to governments and industry across the full energy spectrum. Today, the IEA has 30 Member countries and partnership with key Association countries, including the world's largest emerging economies. Our IEA family reflects the global nature of energy, accounting for almost 75% of the world's energy consumption.

Why is an energy agency looking at critical minerals?

Ever since the International Energy Agency (IEA) was founded, in the wake of severe disruptions to global oil markets that shook the world economy, its core mission has been to foster secure and affordable energy supplies.

Today, the global energy system is in the midst of a major transition to clean energy. The efforts of an ever-expanding number of countries and companies to reduce their greenhouse gas emissions to net zero call for the massive deployment of a wide range of clean energy technologies, many of which in turn rely on critical minerals such as copper, lithium, nickel, cobalt and rare earth elements.

An evolving energy system calls for an evolving approach to energy security. As clean energy transitions accelerate globally and solar panels, wind turbines and electric cars are deployed on a growing scale, these rapidly growing markets for key minerals could be subject to price volatility, geopolitical influence and even disruptions to supply.

A recently published IEA report on "The Role of Critical Minerals in Clean Energy Transitions" identifies risks to key minerals and metals that – left unaddressed – could make global progress towards a clean energy future slower or more costly, and therefore hamper international efforts to tackle climate change. The IEA is determined to play a leading role in enabling governments around the world to anticipate and navigate possible disruptions and avoid damaging outcomes for our economies and our planet.

This is what energy security looks like in the 21st century. We must pay close attention to all potential vulnerabilities, as the IEA did in our recent series on electricity security for power systems, which covered challenges such as growing shares of variable renewables, climate resilience and cyber security.

Critical minerals present real, but surmountable, challenges

Today's supply and investment plans for many critical minerals fall well short of what is needed to support an accelerated deployment of solar panels, wind turbines and electric vehicles. Many minerals come from a small number of producers. For example, in the cases of lithium, cobalt and rare earth elements, the world's top three producers control well over three-quarters of global output. This high geographical concentration, the long lead times to bring new mineral production on stream, the declining resource quality in some areas, and various environmental and social impacts all raise concerns around reliable and sustainable supplies of minerals to support the energy transition.

These hazards are real, but they are surmountable. The response from policy makers and companies will determine whether critical minerals remain a vital enabler for clean energy transitions or become a bottleneck in the process. In any event, emissions along the mineral supply chain do not negate the clear climate advantages of clean energy technologies.

Recommendations for a new, comprehensive approach to mineral security

Based on this special report, the IEA made six key recommendations to ensure mineral security.

1. **Ensure adequate investment in diversified sources of new supply**. Strong signals from policy makers about the speed of energy transitions and the growth trajectories of key clean energy technologies are critical to bring forward timely investment in new supply. Governments can play a major role in creating conditions conducive to diversified investment in the mineral supply chain.

2. **Promote technology innovation at all points along the value chain**. Stepping up R&D efforts for technology innovation on both the demand and production sides can enable more efficient use of materials, allow material substitution and unlock sizeable new supplies, thereby bringing substantial environmental and security benefits.

3. **Scale up recycling**. Policies can play a pivotal role in preparing for rapid growth of waste volumes by incentivising recycling for products reaching the end of their operating lives, supporting efficient collection and sorting activities and funding R&D into new recycling technologies.

4. **Enhance supply chain resilience and market transparency**. Policy makers need to explore a range of measures to improve the resilience of supply chains for different minerals, develop response capabilities to potential supply disruptions and enhance market transparency. Measures can include regular market assessments and stress tests, as well as voluntary strategic stockpiles in some instances.

5. **Mainstream higher environmental, social and governance standards**. Efforts to incentivise higher environmental and social performance can increase sustainably and responsibly produced volumes and lower the cost of sourcing them. If industry players with strong environmental and social standards are rewarded in the marketplace, this can also bring new suppliers to a more diversified market.

6. **Strengthen international collaboration between producers and consumers**. With its human ingenuity, rich resources and track record of successful innovation and investment, the United States is extremely well placed to play a major role in the supply of critical minerals in the future. At the same time, because no single country will be able to solve these issues alone, strengthened international cooperation is essential. Leveraging the IEA's long-standing leadership in safeguarding energy security, we remain committed to helping governments, producers and consumers tackle these critical challenges.