Critical Minerals at a Crossroads: Reclaiming Control of America's Economic Future

written by Melissa (Mel) Sanderson | June 19, 2025

We humans often resist change because as a species, we are leery of the unknown. So unsurprisingly, many question whether most of the changes underway are truly necessary – or beneficial. Especially as regards developing secure end-to-end supply chains for critical minerals, there is not broad societal understanding of the issues at stake. The challenge is real, so too are the risks – and the need for change is urgent.

Why is change so urgent? Because we do not currently control our own economic future.

As recently as ten years ago, no one was talking about critical minerals supply chains. A mostly free trade global economic structure and reasonably sound international relations meant that companies could pretty reliably count on extended and sometimes convoluted supply chains to deliver (often just-in-time) the materials needed both for economic production and national defense. COVID demonstrated the fragility inherent in those arrangements (remember hoarding toilet paper?), striking a blow against just-in-time inventories and leading companies to begin the arduous process of reexamining the logistics of obtaining the inputs they needed, and stockpiling what could be pre-positioned. Subsequent and ongoing realignments of international alliances and agreements, coupled with increased economic and military rivalry between the US and China, has brought into stark relief some unpalatable realities.

For critical minerals, the US has been forced to admit over the

last decade that decisions made over 50 years ago have produced modern economic vulnerabilities. China controls up to 98% of global processing and mining of critical minerals, ranging from lithium, graphite and magnesium (used largely in batteries) to copper, rare earths, tungsten and a host of other elements, all of which play important roles in the technologies upon which we all rely, ranging from smart phones and AI to renewable energy and health care. As China has shown its willingness to 'weaponize' its market hegemony, the US (and the West more broadly) needs urgently to build more primary materials mines, processing facilities, battery factories and magnet manufacturers. Currently, the US is rushing to build processing facilities for rare earths – but has only one producing mine. There are battery makers in the US – but currently just two lithium mines operating at significant scale, with recent approval and funding for two new lithium refineries. There are just three copper smelters, and only two operating at capacity. There are no magnet makers currently in the US. Permanent metal magnets are what make things move and like the rare earths which are in them, the magnets are everywhere from cars to fighter jets. The US has semiconductor and chip manufacturers – the tech components in high-tech equipment – but virtually no basic and intermediate production capabilities.

So change – in the form of new mines, expanded processing and battery/magnet manufacturing – is urgently needed to secure America's economic future and national security.

The Trump Administration has responded to this urgency with alacrity. A series of Executive Orders (EOs) has mandated vastly shorter times for permitting new critical minerals mines; in some cases as short as 28 days, as was the case recently with the approval of a uranium mine in Utah. However, as history has shown, these EOs themselves present challenges and risks to the companies trying to meet America's primary mining growth needs.

Among many other things, EOs are not permanent and do not carry the weight of law. Congress will still need to act to permanently revise the permitting legislation for mining in America. There have been attempts to do so over the last 6 years, most notably the Barrasso-Manchin bipartisan Bill, but so far the antiquated system remains in place with the EOs overlying it and suggesting possibilities for permanent change. It's a challenge for companies to be able to prepare and present the documentation necessary to have their projects approved. Doing so takes money, personnel and time. The government is therefore concentrating on projects which already had applied for federal permitting and therefore have all or most of their documents already in the system. The vast majority of projects, however, especially in the rare earth space, have not yet advanced to that stage.

In a country where the majority of the population has been opposed to mining for decades (contributing to the current imbalance of power between the US and China) there is considerable potential reputational risk to companies approved under the expedited EO system. Environmental concerns, and skepticism that the EOs allow sufficient time for genuine consideration of potential environmental impacts, suggest the potential for current and future legal challenges to projects which, even if not delaying construction could affect the company's social standing and thus market viability.

Even with government permitting support, access to finance – and particularly on a scale necessary to support rapid development of a US-based critical minerals mining industry – remains a defining challenge and one which has not yet been addressed by either the government or private sector. Banks traditionally have not been eager to lend to mining projects due to high risk and long return on investment (ROI) horizons, and, absent some sort of government incentives or guarantees, this seems unlikely

to change despite the national security urgency.

Last but not least – even in a perfect world of rapid permitting and adequate financial support, it simply takes time to build mines, processing facilities and manufacturing plants. Operating all these things also takes knowledge, and that human capital is in short supply in the US. The bottom line is that real meaningful strides toward a US domestic critical minerals supply chain are likely to take anywhere from 4-10 years to market scale.

Crucially, no single country can be completely critical minerals independent. Minerals were distributed by vast and long geological events and not everything is in one place, meaning that international partnerships with trusted allies will continue to remain vitally important to America's security and success.

Given all the above, the biggest risks are that our political leadership will underestimate both the importance of our international friends and the urgent need to maintain relations with frenemy China for the foreseeable future, as we as a nation work urgently to reverse past mistakes and position ourselves for future security and success.