Why is there a domestic American critical minerals crisis?

written by Jack Lifton | June 17, 2024

Why has no one addressed the question: Is there a critical minerals' supply crisis? And, if so, how did this crisis of critical minerals supply come about? The answer, at least to the second question, is probably because it would expose how greed overtook common sense and how credentials, alone, surpassed any requirements for logical thinking about foreseeable consequences based on openly available data, subject matter knowledge, and experience. More about that later.

First, let's look at the origins of the (global?) critical minerals' supply crisis. As with all supply crises, it is a problem of demand exceeding supply. In this case, it is the failure of Western manufacturing to prepare for a rapid rise in demand from China for technology goods and services, and the subsequent (unprecedentedly) rapid build-up, by the Chinese government, of a massive in-country minerals processing capability and capacity to address their own domestic market deficit. This was seen by the Western manufacturing profit-driven managers as an opportunity rather than a competitive threat. But China's rulers were not seeking profit; they were seeking domestic self-sufficiency and security. China's rulers creation of a China that was to be completely independent of the rest of the world for minerals sourcing and processing, as well as manufacturing, was the goal, no matter what the short-term cost.

Since China's GDP and Gross Domestic Demand for Technology Products have grown simultaneously, since 2000, at a faster rate than that of any other nation in history, the Western manufacturing industry can be excused for "initially" missing the long term effects of such growth on the global consumer markets' economy. Western governments and their captive economist class have come so late (in understanding the issues) to the party that their recent wild policy swings that threaten the Free Trade agenda put in place after WWII to prevent another resource-seeking world war can be seen as a pathetic lack of understanding of the foreseeable consequences of bad policy.

The critical minerals' "crisis" is that of the deglobalization of mineral supply chains. In the rapidly vanishing world of global free trade in minerals, they, the minerals, were "refined and processed into end-user-ready forms in the countries where those forms would be used to manufacture consumer and military products. China has created for itself, by aggressive acquisition of ownership or control, almost the entire suite of critical minerals necessary for a self-sufficient high-tech consumer product domestic (as well as export) economy. Simultaneously China built the world's largest by far metal and mineral processing industry and has probably today also become the world's largest consumer of and producer of military products in the world. ***China consumes today more than half of all of the metals and industrial minerals produced in the world! And, China processes more than half of the world's metallic minerals into end-user friendly forms!***

We cannot hope to, nor should we keep pretending that we can completely supplant China for our critical mineral needs both for the military and the civilian markets. We do not have the time, domestic manufacturing expertise, or capital.

The U.S. Department of Defense (DoD) has attempted, for its own needs, to establish a total rare earth permanent magnet supply chain, independent of Chinese participation at any level. This attempt has been done through "investments" in companies with little or no track record in that supply chain. The recipients of that largesse have won by simply saying "We can do it" without passing a techno-economic due diligence, because the DoD does not have the internal capability to do one.

The American private (consumer) manufacturing industry has also, so far, failed in its uncorrelated moves to create a secure and sufficient domestic supply of minerals and their processing necessary to free even a small fraction of its needs from Chinese dominance.

The lack of subject matter expertise and the lack of techno-economic due diligence capability and the inability to find them by both the military and the civilian markets is the problem.