Jack-in-the-Stox: Scandium—Are We Financing the Right Supply Chain?

written by Jack Lifton | August 12, 2026

*In this ongoing **"Jack-in-the-Stox"** Q&A series, Jack Lifton examines the companies, technologies, and geopolitical realities shaping the global critical minerals economy. Each week, Lifton offers direct commentary and analysis on the questions, claims, and strategic developments driving today's rapidly evolving critical minerals sector. Please note that Jack Lifton is not a licensed investment advisor. The views expressed in this column are his own and are provided for informational purposes only. Nothing in this column should be construed as investment advice or as a recommendation to buy or sell any security.*

Washington's recent commitment to support scandium production has been widely applauded as another step toward rebuilding Western critical minerals supply chains. It deserves applause. But it also deserves scrutiny. The question is not whether scandium is a critical material. It is. The question is whether we are investing in the right economics.

Scandium occupies a unique place among the critical materials. In tiny quantities, it transforms aluminum alloys, making them stronger, lighter, and more weldable. It has applications in aerospace, defense, advanced transportation, and solid oxide fuel cells. If the United States intends to restore advanced manufacturing, it will need a dependable supply of scandium. The issue is where that supply should come from.

In more than sixty years of studying mineral deposits and their

economics, I have never encountered what I would call a true primary scandium orebody. Scandium concentrations are typically measured in tens or, at most, a few hundred parts per million. Those grades are simply too low to justify mining for scandium alone. That is why I believe the expression “primary scandium mine” is misleading. Scandium has almost always made economic sense as a by-product.

Just as gallium is recovered while producing aluminum, germanium while processing zinc, and rhenium during molybdenum production, scandium is most logically recovered from ores being mined and processed for metals that carry the economic burden of the operation. That is not merely my opinion. It is how industrial metallurgy has historically created value. Yet recent U.S. government support has drawn public attention to **Sunrise Energy Metals Limited**’s (ASX: SRL | OTCQX: SREMF) Syerston project in Australia, frequently described as a future primary producer of scandium. Australia is one of America’s closest allies, and there is nothing inherently wrong with supporting Australian projects that strengthen allied supply chains. My concern lies elsewhere.

I question whether any known scandium project should be viewed as a primary scandium operation. Syerston is, in reality, a polymetallic laterite project whose economics will depend upon its entire basket of products. If it succeeds, and I hope it does, it will almost certainly succeed because several metals together generate acceptable economics, not because scandium alone can support a mine. Investors should understand that distinction.

North America Already Produces

Scandium

One aspect of the recent announcements surprised me. North America already has commercial scandium production. At **Rio Tinto Limited**'s (LSE: RIO | ASX: RIO | NYSE: RIO) metallurgical complex in Sorel-Tracy, Quebec, scandium oxide is recovered from the processing streams generated during titanium dioxide production. This is precisely the model that I believe represents the future of scandium economics. The titanium business covers the costs of mining, beneficiation, and chemical processing. The scandium is recovered from material that would otherwise contain unrealized value. Rio Tinto certainly does not require financial assistance from Washington. But Washington should recognize that this operation already exists. If the objective is to secure a North American scandium supply chain, Rio Tinto's Quebec production should be regarded as a strategic continental asset. It demonstrates that scandium can already be produced economically when recovered as a by-product.

NioCorp May Be the Most Interesting Story

The project that I find most intriguing, however, lies much closer to home. **NioCorp Developments Ltd.**'s (NASDAQ: NB) Elk Creek project in Nebraska has traditionally been viewed as a future producer of niobium and titanium, with additional potential for scandium and rare earths. Now, metallurgy may be changing the story. I have been made aware of a conference paper by L3 Process Development, a Canadian process engineering company, on a new approach to the economically efficient recovery of scandium and rare earth elements from NioCorp's process stream. This new approach was confirmed as the basis for NioCorp's demonstration scale facility at L3 Process

Development. If that process performs commercially as expected, and if Elk Creek reaches its planned operating capacity, the project could reportedly produce on the order of 100 tons of scandium annually.

Think about what that means. The scandium is not driving the mine. The niobium and titanium are. Scandium becomes an additional source of revenue created through intelligent process engineering rather than through higher ore grades. That is exactly the type of industrial thinking America should encourage. It is also a reminder that breakthroughs in metallurgy can be more valuable than discoveries in geology. The ore has not changed. The process has.

Quebec's Second Opportunity

Quebec also hosts another project worthy of investor attention. **Scandium Canada Ltd.**'s (TSXV: SCD) Crater Lake project remains an exploration and development property rather than an operating mine. Whether it ultimately reaches commercial production remains to be demonstrated. But if governments are prepared to invest billions of dollars to establish secure scandium supplies, projects such as Crater Lake deserve careful technical and economic evaluation. At the very least, they deserve to be part of the strategic discussion.

Follow the Process, Not the Ore Grade

Too many investors begin with a simple question: "Where is the richest scandium deposit?" I believe that is the wrong question. The better question is: "Where can scandium be recovered at the lowest incremental cost?" Those are very different questions. History suggests that the winners in scandium will not necessarily own the highest grade deposits. They will own the

best metallurgy.

The ability to recover scandium economically from existing mining operations is likely to prove far more valuable than attempting to build an entire mining industry around an element that occurs only in trace quantities.

Jack’s Bottom Line

The Trump Administration deserves credit for recognizing that scandium is strategically important. But strategic investment should always begin with industrial economics. If the goal is to build a resilient North American scandium supply chain, then policymakers should recognize the production already taking place at Rio Tinto’s Sorel-Tracy facility. They should carefully evaluate the emerging opportunity at NioCorp, where improved process technology could make scandium recovery a significant by-product of niobium and titanium production. And they should not overlook development stage projects such as Scandium Canada’s Crater Lake property, which could eventually strengthen continental supply.

The objective should not be to finance “scandium mines.” The objective should be to finance the most economical production of scandium. There is a difference. It is the difference between funding a geological idea and building an industrial capability. Perhaps that leads us to another observation worthy of becoming a Lifton Law:

Lifton’s Law of Scandium Economics: *Scandium is unlikely ever to become an economically important primary mining product. Its future lies in intelligent metallurgy that recovers it as a valuable by-product from the production of other metals.*

As I have often written, investors should follow where value is

added. In scandium, that value will almost certainly be added in the process plant, not in the orebody.