Critical Minerals as the Wiring Diagram of Geopolitical Power

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Critical minerals are no longer a niche subset of the periodic table; they are the wiring diagram of geopolitical power, and Canada is sitting on a toolkit it still hasn't decided how to use.

As Co-Chair of the Critical Minerals Institute (CMI), Jack Lifton has spent decades mapping that wiring diagram, from obscure byproduct metals to the politics that decide where refineries get built. CMI, which I help lead, has created as a "brain trust" for this emerging economy: a global hub that connects companies, capital markets and policymakers, backed by masterclasses, a weekly Critical Minerals Report, and an annual summit that now draws ministers, institutional investors and C-suite executives to Toronto.

When I asked Lifton what he plans to discuss at PDAC 2026 in Toronto, he did not start with lithium or copper, but with the quiet metals hidden in their shadow. "They've asked me to give an introductory talk and then chair a panel on the sourcing of critical minerals for the electronics industry in Canada," he said. But his real focus is on the companion metals that fall out of existing operations: "The metals for electronics, the critical metals, come as companion metals in copper mining, aluminum mining, zinc mining, silver mining. So what they are is, for example, gallium, germanium, tellurium, selenium, cadmium, metals like that, and of course silicon."

This is not a theoretical list. Lifton's point is that the raw

material base for an advanced electronics industry already exists inside Canada's established mining complex. "All of these metals or metalloids can be produced in Canada as byproducts of major mining," he told me. He ticks through the map: Rio Tinto Group (LSE: RIO) (NYSE: RIO) in Quebec processing bauxite into aluminum and, as a result, being able to produce gallium and scandium; Teck Resources Limited (TSX: TECK.A / TECK.B) (NYSE: TECK) mining zinc in Western Canada, with germanium as a companion; high-quality silicon deposits in Manitoba now attracting junior developers; tellurium and selenium emerging as byproducts of copper. "You have the entire suite of critical electronic minerals, which are byproducts," he said. "All could be produced in Canada, and as far as the measures, they will be produced in Canada."

If that sounds like a blueprint for an industrial policy, that is exactly how Lifton frames it. In his view, the missing step is not geology but intent. "Canada should take a hard look at enticing the electronics industry—manufacturing of chips and basic electronic devices like chips—because everything is there," he argued. The PDAC panel he will chair is expected to include representatives from Rio Tinto, Anglo American, and Teck alongside him. "This is interesting to me because normally I don't talk to the majors," he admitted. "These critical minerals for electronics are things that the majors can produce but really don't know a lot about."

That gap—between what can be produced and what is strategically understood—is precisely where CMI has tried to position itself. Recent membership additions such as Quantum Critical Metals Corp. (TSX.V: LEAP | OTCQB: ATOXF | FSE: 86A1) show how the ecosystem is evolving around metals that, until recently, would barely have merited a line item in an annual report. Quantum, a junior explorer with projects focused on gallium, rubidium, cesium, antimony, and germanium in Québec and British Columbia,

joined CMI this fall, citing the Institute's role in "support[ing] the clean energy transition, address[ing] supply chain vulnerabilities and strengthen[ing] national security."

In our statement welcoming Quantum, we described critical minerals as "the currency of geopolitical power, shaping supply-chains from chips to clean energy," and pointed to the company's focus on gallium and cesium as an example of how niche metals are being elevated into strategic assets. Lifton's PDAC remarks will land squarely in that same space: linking obscure byproduct streams to chip fabrication, national security and the question of where value is captured—onshore or overseas.

Yet for all the attention now flowing into these materials, Lifton is blunt about a paradox that has come to define North American policy: Washington's embrace of Australia and its comparative neglect of Canada. "This is a mystery to me," he said when I asked when he thought Americans might start working well with Canadians again. "The United States has engaged with Australia quite deeply. A lot of money has been talked about. The Australian rare earth industry is absolutely booming. I mean, you have Iluka, you have Hastings, you have Arafura, and you have even Northern Minerals." Those companies, he notes, are being financed by both the Australian government and private equity, and they are not stopping at the mine gate. "Australia is in the process of constructing several refining operations associated with the mining companies I just mentioned. And this is more activity in the rare earth space in Australia than there certainly is in Canada."

What troubles Lifton is not Australia's success, but the relative inattention to a neighbor with, on paper, even stronger fundamentals. "Canada has many more rare earth deposits than Australia does," he said. "And Canada has a much deeper manufacturing base than Australia does, and a much deeper

process technology base.” From his vantage point, the lack of symmetry in U.S. engagement cannot be explained by geology, engineering capacity or existing industrial infrastructure. “For some reason I don’t understand, the United States seems to think that between Maine and Quebec is an ocean rather than a river,” he said.

He is careful not to frame this as a policy indictment, but the implication is clear: the United States is leaving options on the table. “For whatever reason, I’m not qualified to say the United States is making a mistake, but it should be giving the same amount of attention to Canadian minerals and the processing of them as it is to Australia,” he said. The question is not academic. CMI’s own calendar illustrates how quickly the agenda is moving: PDAC in March, followed by CMI Summit V—“Command Capital in Critical Minerals: Aligning Government Priorities with Private Equity”—in Toronto on May 13-14, 2026, where government agencies, institutional capital and issuers from Canada, the United States, Australia and beyond will be asked to reconcile industrial strategy with capital flows.

Lifton will arrive at those stages with the same insistence he brought to our conversation: that the building blocks of a North American electronics and rare earths strategy already exist in Canada’s byproduct streams, and that the real test will be whether governments and majors choose to recognize what is in front of them. “These critical minerals for electronics are things that the majors can produce but really don’t know a lot about,” he said, adding that he “certainly hope[s] the Canadian government is paying attention to this,” even if, for now, “I wish I could explain this, but I can’t.”

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