Why Tungsten Has Jumped to No. 1 on the World's Critical Minerals Hot List

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In an era when supply chains are weaponized and stockpiles have quietly vanished, tungsten has moved from an obscure industrial input to the metal no serious power can afford to ignore. That transformation – from "very unsexy" to what one analyst calls one of the "sexiest" critical minerals in the market – was the focus of the Critical Minerals Institute's Tungsten Masterclass, where the conversation kept circling back to a single point: without tungsten, the modern military-industrial machine quite literally grinds to a halt.

Moderated by Tracy Hughes, Executive Director of the Critical Minerals Institute (CMI), the session brought together two people who have lived through tungsten's long winter and sudden renaissance: Christopher Ecclestone of Hallgarten + Company and Lewis Black, Chairman, President & CEO of Almonty Industries Inc. (NASDAQ: ALM | TSX: AII | ASX: AII | Frankfurt: ALI1). What emerged was not another breathless "critical minerals" pitch, but a sobering narrative about war, policy failure, and the consequences of outsourcing an entire metal supply chain to China.

Ecclestone opened by reminding the audience that tungsten's moment is not an accident but the delayed result of decades of complacency. After the fall of the Iron Curtain, he said, Western governments embraced the so-called peace dividend and "fell asleep at the wheel" – running down stockpiles rather than replenishing them. For years, tungsten quietly did its job in drill bits, cutting tools and machine parts while policymakers

obsessed over other priorities. “For many decades, hardly any tungsten was used at all by the militaries because they weren’t shooting at anyone,” he said. “Now the shooting is definitely on – and talk of even more escalation in different areas is out there.”

In that context, tungsten’s peculiar combination of properties – extraordinarily dense, extremely hard, essential for armor-piercing munitions and high-end tooling – has turned it into a frontline strategic material almost overnight. Ecclestone’s point was stark: both sides in today’s conflicts are burning through tungsten stockpiles at the very moment China, the dominant producer, has decided to close the taps on anything it deems “dual use.” As he put it, channelling the “Soup Nazi” from *Seinfeld*, Beijing has effectively said, “No more tungsten for you.”

The implications go far beyond the battlefield. Tungsten sits invisibly inside knives, drill bits, and machine tools that underpin everything from the auto sector to mining itself. “Whether it’s the auto industry or anything that basically cuts metal, you need tungsten on the blades to prevent them from wearing out,” Ecclestone said. Even diamond drill bits rely on tungsten components. When the Chinese government demands proof that exported material will not be used for military purposes – a near impossible standard for parts that can migrate through global supply chains – the result is a broad-brush squeeze on the entire market.

If Ecclestone laid out the geopolitical canvas, Black filled in the operational detail. Tungsten has always been “sexy” to him, he said, but not because of price speculation. “The reason is not because it should ever be price-driven, but because it’s availability-driven.” The amount of tungsten in an end product is so small that the consumer barely notices the cost; what

matters is whether any reliable non-Chinese supply exists at all.

That question has defined Black's career. Almonty's flagship Sangdong mine in South Korea — once a casualty of China's low-price onslaught — is now being rebuilt in what he describes as a classic 8–10-year democratic permitting cycle. Sangdong shut down in 1993 not because it was uneconomic, but because "for so many years they were the 'king of kings' and their customer base was exclusively the U.S. government," and South Korea chose to pivot into what it called its Fourth Industrial Revolution. With China perceived as a permanent, cheap supplier, tungsten mining was allowed to fade.

China, Black argued, never set out to "blackmail the West." It simply did what Western economies used to do: go vertical, capture the value chain and buy market share. By driving prices down and supporting domestic mines with subsidies, Beijing forced "98–99% of all tungsten mines" elsewhere out of business in a six- or seven-year window, Sangdong included. Now, decades later, as China imposes export controls and subsidy reductions have begun to bite, the bill for that outsourcing is coming due.

What makes this moment different, in Black's view, is that scarcity is no longer a Western problem alone. The vertical price spike that has taken tungsten close to the thousand-dollar mark is "not unique to the West; it's actually higher in China right now," he noted. Chinese buyers are aggressively scouring central Africa for non-Chinese material, often through "unknown companies — which almost certainly means CCP money." At the same time, Beijing's export restrictions serve a dual purpose: exerting leverage and preserving what is, even for China, a finite resource.

Against that backdrop, projects like Sangdong take on outsized

importance. In its current design, Black said, the mine could supply around 40% of non-Chinese tungsten output, with the potential to add additional phases if the market requires it. But he was blunt about the challenge of rebuilding a supply chain from such a thin base. Global tungsten production is on the order of 84,000 to 98,000 tonnes a year, roughly half of which is consumed in China. U.S. consumption alone sits around 10,000 to 11,000 tonnes of tungsten oxide annually — for defense, industry and, increasingly, advanced technologies.

The obstacles are not just geological or financial; they are human. “Tungsten is extremely difficult to mine and process because it has the same density as gold and is as brittle as porcelain,” Black said. That combination has defeated many would-be producers. “Most of the projects, essentially all of them that we haven’t owned in the last 15 years, have bled out because they couldn’t process it efficiently.” For him, any serious tungsten project needs three things: grade, longevity and human capital. Without that trifecta, “you have no fighting chance.”

Policy, too, comes in for sharp criticism. Ecclestone noted that it was not former President Trump but President Biden who brought in tariffs on tungsten — a belated “aha” moment meant to restrict Chinese flows and jump-start domestic production. It wasn’t nearly enough. For decades, Congress preferred “a bridge to nowhere in my constituency” over unglamorous stockpiles of critical metals. “They were very unsexy,” he said, recalling how even the U.S. helium stockpile was liquidated. Only recently have “alarm bells” rung loudly enough to unlock funding.

At the same time, Black pointed out that tungsten itself is exempt from certain U.S. tariffs, a recognition of just how dependent American industry remains on imports. Almonty, with operations in South Korea, Portugal, Spain and Montana, has

deliberately planted itself in jurisdictions with “good, solid legal systems” and strong relationships with Washington. Yet even that positioning does not solve the broader problems of permitting gridlock and local resistance. “Think in the last year how many mines in the U.S. have received all their permits to start work – or even in Europe,” he said. “It’s just not happening. This is going to be a long-term program.”

Meanwhile, demand pressures are compounding. The obvious drivers – defense, AI hardware, nuclear fusion research – are joined by what Black called “another gorilla in the room”: automotive. As interest rates fall and car markets recover from the post-COVID doldrums, the sector that traditionally accounts for around 40% of Western tungsten consumption will reassert itself. Investors excited by tungsten’s near-vertical price move may be tempted to extrapolate forever, but both Black and Ecclestone urged a more disciplined view: plan around a sustainable band, perhaps $450 to $550, and treat today’s levels as a stress test, not a baseline.

Corrections will come, they agreed, but are unlikely to erase the structural shift. A $100–$200 pullback would “clean out the fakers,” as Ecclestone put it, permanently thwarting the mega-projects that have sat on drawing boards for a decade waiting for capital. Brownfield restarts, not greenfield dreams, are where the real action is – a rare instance in mining where developers and producers far outnumber true explorers because “there’s hardly anything easy to get your hands on.”

For Hughes and the Critical Minerals Institute, the masterclass underscored why tungsten now sits at the very top of the critical minerals hot list: it is scarce in the West, scarce in China, indispensable to national security, and brutally unforgiving to dilettantes. As Black summed up his own position – as CEO and the second-largest investor in Almonty – this is no

place for short-term tourists. “I’m not interested in pumping a stock; I want viable long-term assets,” he said, arguing for price transparency and some form of floor pricing across the G7 so that serious operators can invest with confidence and build a resilient supply chain.

The metal that once languished in obscurity has become a test of whether governments, industries and capital markets can learn from past mistakes — and whether, this time, they are willing to pay for security before the shelves are empty.

About the Critical Minerals Institute (CMI):
The Critical Minerals Institute (CMI) is a global brain trust for the critical minerals economy, serving as a hub that connects companies, capital markets, and policymakers. Through CMI Masterclasses, the weekly *Critical Minerals Report (CMR)*, bespoke research, and board-level advisory services, CMI delivers actionable intelligence spanning exploration finance, supply chains, and geopolitics.

CMI also convenes the flagship **Annual Critical Minerals Institute Summit**, a global gathering of government leaders, institutional investors, and industry executives. The next event, **CMI Summit V**, themed **“The New Critical Minerals Economy,”** will take place **May 13–14, 2026**, in Toronto, Canada.
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