

SINCE 1912
Skillings
Mining Review Magazine

The New

IRON GEOGRAPHY

Simandou is moving ore.
The old iron map is moving with it.

GOLD UNDER PRESSURE

Activism, accountability, consolidation.

BEFORE THE WALL BREAKS

Why geotechnical risk is now a front-page issue..

THE MINE IS NOT THE PRIZE

Rare earth power lies beyond the pit.



SMALL TEAM



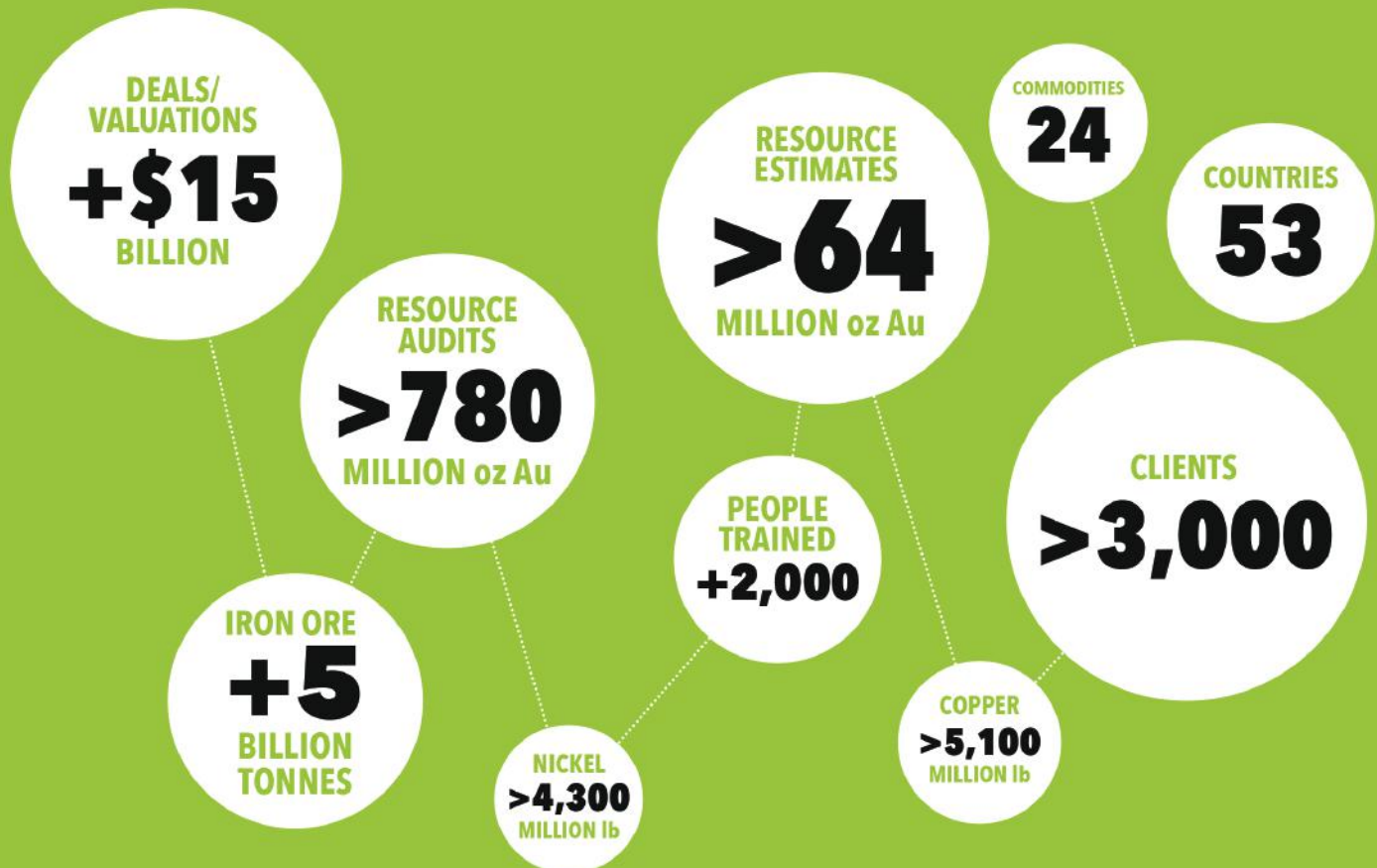
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Skills **MINING** Review

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THE NEW

Iron Geography

Simandou is no longer a distant iron ore threat; with Guinea's mine-to-port corridor moving ore, producers now face the repricing of grade, cost curves, and China's Pilbara dependence that could reshape global supply.



The Mine Is Not the Prize

America can dig rare earths. China still controls the part that turns them into power. Rare earth security now depends on factories, not just mines. Read this to understand why this matters.

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BEFORE THE WALL BREAKS

The most important sound in a modern open-pit mine may no longer be the blast, the haul truck, or the crusher. It may be a movement too small for the eye to see: a few millimetres of displacement in a pit wall, a change in pore pressure inside a tailings facility, a deformation pattern appearing on a radar screen before it becomes a headline.

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When Supply Chains Stop Being Background Noise

This issue opens with a simple shift: the mining stories once treated as distant signals are now arriving at the gate. Simandou is no longer a theoretical threat to the iron ore order. Rare earth security is no longer a conversation about mines alone. Gold, lithium, copper, uranium, AI data centers, and critical minerals diplomacy are all being pulled into the same argument: who controls supply, who carries risk, and who pays when assumptions break.

Across these pages, the pattern is clear. Resource nationalism is hardening. Capital is becoming more selective. Technology demand is forcing old markets to answer new questions. And operational discipline, from pit-wall monitoring to mine-to-port logistics, is becoming as strategic as exploration itself.

For *Skillings Mining Review*, that is the real story of July 2026. Not one commodity, one country, or one headline, but a sector being repriced by pressure. The winners will not simply be those with deposits. They will be those who understand timing, infrastructure, trust, and consequence before the market does. Why this issue reads less like coverage and more like a warning map for what follows next.

Editor,
Skillings Mining Review

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PUBLISHER

CHARLES PITTS

chas.pitts@skillings.net

DIRECTOR OF

SALES & MARKETING

CHRISTINE MARIE

advertising@skillings.net

CREATIVE DIRECTOR

MO SHINE

mo.shine@skillings.net

STAFF WRITERS

**SALINI KRISHNAN
PENNY LANEFORD
SONNY JIMERSON**

MEDIA PRODUCTION

STANISLAV PAVLISHIN

media.team@cfxnetwork.com

PROFILES IN MINING

mining.profiles@skillings.net

GENERAL CONTACT INFORMATION

info@cfxnetwork.com

Payments & Billing:

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Santa Elena Expansion with New Underground Permits

First Majestic Silver has received approval to begin underground development at the Santo Niño and Navidad discoveries, marking another step in expanding the life and production potential of its Santa Elena operation in Mexico.

First Majestic Silver has secured construction permits for two new underground portals at its Santa Elena mine in Mexico and plans to invest an additional US\$12 million this year to advance the Santo Niño and Navidad discoveries toward production.

The permits allow underground development to begin in the second half of 2026. The company plans approximately 800 metres of decline development at Santo Niño and 1,300

metres of underground development at Navidad. Both deposits are expected to become future sources of higher-grade ore for the Santa Elena processing plant and have the potential to significantly extend the mine's operating life.

Building on Exploration Success

Santa Elena, together with the nearby Ermitaño deposit, is a major contributor to First Majestic's silver and gold production. The company

expects total 2026 production across its four producing Mexican mines to reach 13-14.4 million ounces of silver and 127,000-140,000 ounces of gold. The latest milestone follows the successful discovery and development of the Ermitaño deposit, which transformed the Santa Elena operation. A scoping-level study identified dedicated underground access as the preferred development option for both new deposits.

Strong Drilling Results

The company also reported encouraging infill drilling results aimed at upgrading inferred resources and improving mine planning. At Santo Niño, drilling intersected 10.87 metres grading 77 g/t silver and 1.52 g/t gold, while Navidad returned 14.89 metres grading 28 g/t silver and 3.5 g/t gold.



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Rajani Modiyani, one of Chevron's leading experts in the mining sector, answered eight pressing questions from owners and managers in the industry. Scan the QR code for the full Q&A.

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SOUTH32 TO SELL MOST OF ITS ALUMINIUM ASSETS TO ALCOA CORPORATION

Diversified miner South32 has signed a binding conditional agreement to sell its aluminium value chain assets, including its interest in Worsley Alumina, in Australia, and Hillside Aluminium, in South Africa, to NYSE- and ASX-listed Alcoa Corporation for up to \$5.6-billion. South32's Mozal Aluminium operation, in Mozambique, is, however, excluded from the transaction. The operation remains on care and maintenance, with divestment under "active consideration". The transaction, which is expected to close in the second half of South32's 2027 financial year, is subject to various conditions, including approval by South32's shareholders, approval by the Australian Foreign Investment Review Board and Australian Competition and Consumer Commission.



US RARE EARTHS REFINER DEMONSTRATES HIGH-PURITY RARE EARTHS PRODUCTION

US-based critical minerals refining and recovery company Momentum Technologies has managed to produce some of the purest rare earths ever reported at its demonstration plant in Carrollton, Texas. This breakthrough, following the company's recent achievement of commercial-grade battery material purity from black mass refining, now makes Momentum Technologies one of the only companies in the US that can refine both rare earths and battery metals from mined ore and end-of-life materials - at commercially relevant purities.

FIVE TRIBES SUE OVER CONTROVERSIAL IPOP GOLD MINING PROJECT

Five Norton Sound tribes are asking a federal judge to throw out a key federal permit for a large-scale gold mine proposed in Bonanza Channel, an estuary about 30 miles east of Nome. The mine, proposed by a Nevada company called IPOP LLC, would dredge roughly 2.7 miles along the channel's 28 mile estuary bed. Oral arguments for the case went before a federal judge on June 16 in Anchorage.



SWEDISH GOVERNMENT GRANTS LEASE TO HEAVY RARE-EARTHS PROJECT

A 25-year mining lease for the Swedish deposit is awarded to Greenna Mineral AB, a subsidiary of Leading Edge Materials. The Geological Survey of Sweden has confirmed that Norra Kärr has a particularly high proportion of heavy REEs terbium, dysprosium and yttrium.

BMM PARTNERS WITH UQ TO UNLOCK YTTRIUM OPPORTUNITY

Bayan Mining and Minerals partners with University of Queensland to test its yttrium processing technology. Three-month program designed to validate patented ion-exchange process using Australian rare earths feedstock. Results will support potential pilot-scale development.

INDIA EXPANDS GLOBAL HUNT FOR RARE EARTH SUPPLIES

India is stepping up efforts to secure access to critical rare earth minerals as it seeks to strengthen domestic supply chains and reduce its dependence on imports for materials essential to electric vehicles, clean energy technologies and defence applications.

KENYAN COURT HEARS CHALLENGE TO US RARE EARTHS MINING DEAL

A multi-billion-dollar rare earth minerals agreement between Kenya and the US is facing a legal challenge, with campaigners accusing the Government of negotiating the deal in secrecy. The Centre for Litigation Trust has petitioned the High Court to halt plans to mine Mrima Hill in Kwale County, arguing that the agreement lacks public consultation and Parliamentary approval.



DISUSED MYANMAR JADE MINE COLLAPSE KILLS FIVE, 15 MISSING

Five jade scavengers were killed and around 15 others remain missing after monsoon rains triggered a collapse at a disused mine. Efforts were heavily hampered by a lack of heavy machinery and medical supplies. The accident happened late on Sunday, 28 June in Hpakant township, Kachin State.

Joss Zone Opens Deeper at Beartrack-Arnett

New drilling has expanded the depth of Revival Gold's high-grade Joss zone in Idaho, strengthening the underground resource and raising the possibility that the deposit could advance ahead of the planned Beartrack-Arnett heap leach restart.

Revival Gold has extended the high-grade Joss zone at its Beartrack-Arnett project in Idaho by 240 metres, with recent drilling highlighting the deposit's growing scale and underground development potential.

The standout hole, BT26-254D, intersected 147.2 metres grading 2.37 g/t gold from 808 metres downhole. Higher-grade intervals included 5.9 metres grading 14.89 g/t gold and 4.7 metres grading 9.31 g/t gold. According to the company, the results extend the drilled underground deposit to a depth of 850 metres, increasing its vertical extent by about 70%.

Supporting Future Development

The Joss deposit currently hosts an inferred underground sulphide resource of 6.75 million tonnes grading 4.05 g/t gold, containing 877,000 ounces of gold. The deposit lies outside the initial Beartrack-Arnett heap leach mine plan but could become a higher-grade underground development option as exploration continues.

During the current campaign, Revival completed approximately 5,500 metres of drilling in five main holes and three wedge holes. All eight drill intersections encountered the

Panther Creek shear zone, which hosts the project's gold mineralisation. Assay results from one main hole and three wedge holes are still pending.

Project Pipeline Advances

While drilling continues at Joss, Revival's near-term priority remains the Mercur gold project in Utah, where the company expects to complete a prefeasibility study early next year. Revival held approximately \$37 million in cash at the end of May, which it says is sufficient to support work toward a construction decision targeted for early 2028.

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EV BATTERIES TURN LITHIUM MINING INTO A MEASURABLE CLIMATE GAIN

A fleet-wide life-cycle assessment shows that lithium-ion batteries can deliver major climate benefits, but only if supply chains, recycling are managed responsibly. Researchers conducted a life cycle assessment of the projected U.S. light-duty electric vehicle fleet to evaluate the environmental benefits and carbon handprint of lithium-ion batteries compared to internal combustion engine vehicles.

KORYX COPPER WINS ANALYST SUPPORT

Analysts at BMO Capital Markets and Red Cloud Securities say Koryx Copper received another round of wide drill intersections at its Haib project in southern Namibia on Monday. Highlights from 15 infill holes totalling 5,351 metres at Haib included hole HMI38. It cut 584 metres from surface grading 0.3% copper, 42 parts per million molybdenum and 0.04 gram gold per tonne.

LIEBHERR PRESENTS NEW LMD 1200 DRAGLINE FOR WET OR DRY MINING

With the new LMD 1200, Liebherr says it is launching a machine specially developed for the extraction of raw materials in demanding mining applications. A variable boom system for dragline operation, easy relocation within the mine and the robust steel construction ensure flexibility and reliability.



ALCOA BUYS SOUTH32 ALUMINUM ASSETS

Alcoa has agreed to buy South32's S32 10.26% increase; green up pointing triangle bauxite, alumina and aluminum assets across Australia, Brazil and South Africa in a cash-and-stock deal valued at up to \$5.6 billion.

CMPDI SHARES RISE 4% AS FIRM SIGNS MOU WITH NTPC MINING

Shares of Central Mine Planning & Design Institute Ltd (CMPDI) rose 4% on July 1 after the company inked MoU with NTPC Mining for three-year collaboration. The MoU does not involve any direct financial commitment. However, services rendered by CMPDI under this arrangement shall be chargeable as per prevailing norms.

FEDERAL APPROVAL FOR THE SPRINGPOLE GOLD

First Mining Gold Corp's Springpole Gold Project -one of Canada's largest undeveloped gold resources in northeast of Red Lake, Ontario received its Federal Environmental Assessment ("EA") approval.

CHILE FACES MINING LABOR SHORTAGE

Chile will need to add nearly 37,000 skilled workers over the next decade to support a planned \$104.549 billion mining investment pipeline, with labor shortages emerging as one of the industry's biggest risks to bringing new projects online. In 2025, Chile's mining sector employed more than 300,000 direct workers.

NIGERIA UNVEILS WORLD-CLASS CRITICAL MINERALS DISCOVERY

Nigeria has discovered a major polymetallic deposit in Kaduna State containing nickel, copper, gold, platinum group metals, and rare earth elements.

The government is accelerating mining sector reforms, requiring local mineral processing, revoking thousands of inactive mining licenses, and attracting major Chinese investment in lithium processing to boost domestic value creation.

FORTUNA LIFTS WEST AFRICA GROWTH WITH \$1B SENEGAL GOLD PROJECT

The study gives Diamba Sud a post-tax net present value (discounted at 5%) of \$1 billion and a mine life of 9.4 years, more than a year longer than in the preliminary economic assessment (PEA) from last year. The study assumed a base case gold price of \$3,500 per oz., up from \$2,750 per oz. in the PEA, following spot prices gains of about 7% since the PEA was released last October.

CHINALCO MINING TO ACQUIRE 95% STAKE IN OPUWO PROJECT

hinalco (Xiong'an) Mining, a subsidiary of the Aluminum Corporation of China, has agreed to acquire a 95% stake in the Opuwo Cobalt-Copper Project in Namibia from Celsius Resources for \$15m (101.88m yuan). The Opuwo Project in Namibia is an advanced site focused on exploring for and developing cobalt and copper resources.



COSTA RICA GEOLOGISTS CALL FOR NATIONAL PLAN AS ILLEGAL GOLD MINING

Costa Rica's illegal gold mining problem is no longer confined to the long-running Crucitas debate, the Colegio de Geólogos de Costa Rica warned, calling for a national strategy to track gold, strengthen state controls and respond differently to each mining region.

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A photograph of a large industrial mill liner, showing a curved, metallic surface with a walkway and safety railings. The image is partially obscured by a dark blue overlay containing text.

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AOMC Completes Inaugural Mission in the Cook Islands

American Ocean Minerals has wrapped up its critical Expedition 7, capturing thousands of physical samples to advance deep-sea polymetallic nodule resource definition and environmental baselining.

As the global transition to clean energy accelerates the search for critical minerals, American Ocean Minerals Corporation (AOMC) has successfully completed its first offshore exploration campaign in the Cook Islands. Dubbed Expedition 7, the three-week research mission was designed to support the rigorous environmental baseline studies required for future deep-sea mineral development.

The Anuanua Moana Platform

Operating aboard the MV Anuanua Moana—a 196-foot, purpose-built research vessel acquired by AOMC in 2022—the scientific team executed a highly productive benthic baseline campaign. Serving as a centralized offshore asset, the refurbished vessel enables AOMC to minimize its reliance on third-party charter availability while consistently advancing regulatory work across its Pacific portfolio.

The campaign focused on the Moana 1 Project Area within the EL3 exploration license. This license is officially held by AOMC's subsidiary, Moana Minerals Ltd., under the jurisdiction of the Cook Islands Seabed Minerals Authority.

Sampling and Integrated Science

During the intensive 21-day expedition, the team surveyed 53 priority sites. Researchers successfully deployed and recovered 60 box cores and 62 multicores, ultimately generating 4,059 physical samples for

detailed shore-based laboratory analysis. The expedition employed a comprehensive, integrated scientific approach. By combining sediment physico-chemistry with quantitative macrofaunal, meiofaunal, and molecular environmental DNA (eDNA) data, the team is establishing precise ecological baselines across representative deep-sea habitats.

Additional datasets, including bathymetry and water-column biomass, were also collected to support evidence-based, long-term environmental management.

A Pathway to Commercial Harvesting

The robust data generated during Expedition 7 is a critical prerequisite

for transitioning deep-sea mineral assets from exploration toward potential commercial extraction. The findings will directly contribute to Moana Minerals' ongoing Environmental Impact Statement (EIS), strategically scheduled for the first half of 2027.

Furthermore, the newly acquired physical data will help refine existing polymetallic nodule resource estimates. This supports a Pre-Feasibility Study (PFS) that remains on track for completion in the second half of 2026.

AOMC—which recently announced a definitive merger agreement with Odyssey Marine Exploration to create a US-controlled, \$1 billion deep-sea critical minerals entity—views this mission as a major operational milestone. As AOMC Chairman and former Rio Tinto CEO Tom Albanese noted, the successful campaign reinforces the strategic value of dedicated infrastructure in evaluating marine resources responsibly.

Conclusion

By successfully marrying biological, chemical, physical, and geological sampling, AOMC has laid a rigorous scientific foundation in the Cook Islands. As the company pushes toward pivotal feasibility and environmental milestones over the next 18 months, Expedition 7 stands as a necessary step in responsibly unlocking a secure, alternative supply of vital battery metals.



Generation Mining Nears Full Funding for Marathon Copper Project

Generation Mining has secured most of the financing required for its C\$1-billion Marathon copper-palladium project in northern Ontario, bringing the fully permitted critical minerals development closer to construction. The company has assembled approximately C\$969 million in funding, including a C\$200 million commitment from the Canadian Infrastructure Bank (CIB), C\$424 million in senior debt from a consortium of lenders, and a C\$240 million precious metals streaming agreement with Wheaton Precious Metals.

According to Haywood Securities, Generation Mining may raise the remaining C\$150 million through an equity offering later this year, with construction expected to begin in the first half of next year. The CIB package includes C\$110 million in subordinated construction debt



and a C\$90 million standby facility for potential cost overruns. Additional financing support comes from Export Development Canada, ING Capital, and Société Générale, while the company previously secured C\$145 million in equipment leasing facilities.

The project has also signed copper concentrate offtake agreements with Glencore for half of its planned annual copper production of 42 million pounds, with the remainder allocated to an undisclosed European integrated group

Located near Marathon, Ontario, the mine targets production in 2028. A 2025 feasibility study projects a 13-year mine life, an after-tax NPV of C\$1.07 billion, and an IRR of 28%. Detailed engineering and procurement activities are already underway.

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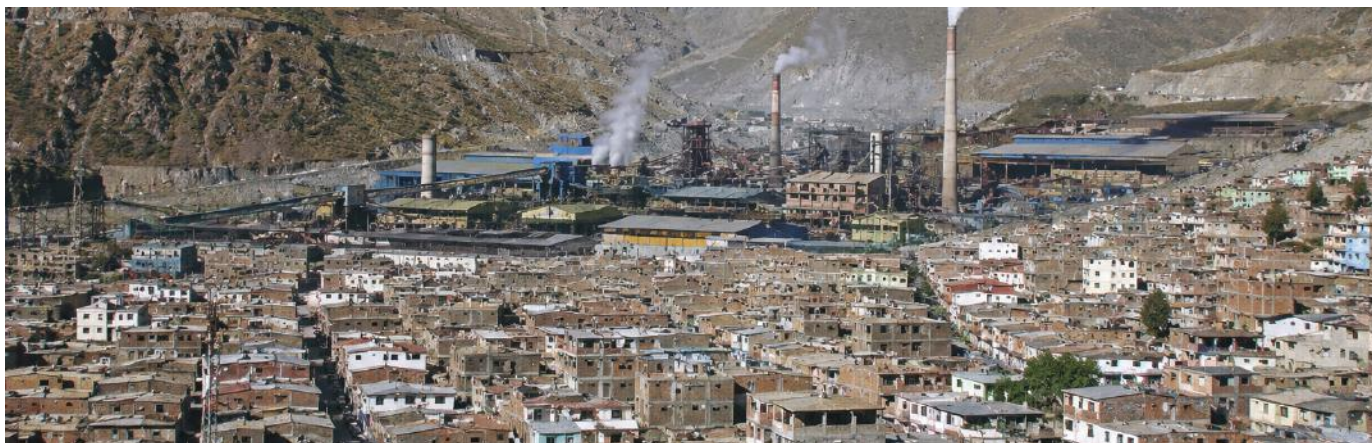
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\$150 Million Settlement

Reached in Long-Running La Oroya Smelter Dispute

Doe Run Resources has agreed to a historic legal resolution, addressing nearly two decades of litigation regarding environmental claims from residents in the Peruvian Andes.



St. Louis-based Doe Run Resources Corp., owned by industrialist Ira Rennert, has reached a \$150 million settlement with more than 1,380 residents of La Oroya, Peru. The agreement was finalized just days before a major environmental trial was scheduled to commence on June 29 in a US federal court.

Decades of Litigation

The dispute originated in 2007 when lawsuits were filed on behalf of local children. Plaintiffs alleged the La Oroya metallurgical complex—which began operating in 1922 and was acquired by Rennert’s companies in 1997—exposed the community to lead, arsenic, cadmium, and sulfur dioxide.

Court filings cited a 2005 Saint Louis University study indicating nine out of ten local children exhibited elevated lead levels capable of causing permanent health ailments.

Corporate Perspective

Doe Run Chief Executive Officer Matthew Wohl stated the settlement allows the firm to move past the 19-year legal issue and focus on future operational investments and new technologies. Wohl emphasized that Doe Run previously invested over \$300 million to improve site conditions, asserting the Peruvian government abdicated its environmental cleanup responsibilities.

FAST FACTS: THE LA OROYA LEGAL ACCORD

Settlement Amount:	\$150 million
Plaintiffs Covered:	>1,380 residents
Unresolved Claims:	~3,000
Facility Acquired:	1997 by Doe Run
Current Operator:	Metallurgical Business Peru SAA (since 2023)

The smelter operated under Rennert’s New York-based parent

company, Renco Group, until seeking bankruptcy protection in 2009. The facility later reopened in 2023 under the independent, worker-owned Metallurgical Business Peru SAA.

Pending Claims

While substantial, the settlement resolves roughly one-third of the total cases, yielding an estimated \$109,000 per covered plaintiff. Plaintiffs’ attorneys confirm that nearly 3,000 claims remain unresolved without active trial dates. Crucially, the agreement avoids a jury trial where plaintiffs intended to highlight the 92-year-old Rennert’s estimated \$6.6 billion net worth, a tactic defense counsel argued would unfairly inflame the jury.

The settlement distributes an estimated \$109,000 to each covered plaintiff but leaves nearly 3,000 additional claims pending without scheduled trial dates.



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is achieved through strict controls applied throughout the production process. With a consistent quality focus, the company implements an ISO 9001:2015 Certified Quality Management System and leverages high technologies and expert staff.

As a result of the Group's strategic investments in research & development, HalcOR is recognized as one of the leading copper producers globally, setting new standards in copper processing. The company maintains a consistent focus on quality and

environmental protection and a strong commitment to the principles of sustainable development. In this context, all production facilities in the Group's plants leverage advanced technologies to bring in the market innovative products that are energy efficient and environmentally friendly.

For more information, please visit our website www.halcOR.com

Strong US Jobs Ignite Rate Fears and Test Gold's Floor

The gold market experienced its most significant single-day contraction of 2026, driven by a macroeconomic reality check that sent shockwaves through the commodities complex. Following a robust May nonfarm payrolls report from the U.S. Bureau of Labor Statistics, spot gold plunged nearly 3%, tumbling to approximately \$4,330 per ounce by midday in New York.

The Fed has been looking for a reason to keep its foot on the brake to ensure inflation is fully extinguished, and the May jobs report gave them precisely that.

For the first half of the year, bullion had comfortably consolidated near historic highs. However, the resilient U.S. labor market has effectively reset expectations for Federal Reserve policy in the fourth quarter.

According to the CME FedWatch Tool, the prospect of a 25-basis-point rate hike at the December FOMC meeting jumped from a toss-up to a 68% probability, fundamentally spiking the opportunity cost of holding non-yielding assets.

The resulting sell-off marks a rapid deterioration of the “structural decoupling” thesis. At the start of 2026, many analysts predicted gold would breach \$5,000 regardless of U.S. interest rate policy, driven by structural fiscal concerns. Instead, the



The December Rate Reset

How the May employment report shifted expectations for Federal Reserve policy and gold pricing.

METRIC	PRE-JOBS REPORT	POST-JOBS REPORT	IMPACT
Spot Gold (Xau/Usd)	\$4,460/Oz	\$4,460/Oz	2.94% Drop
Us Gold Futures	\$4,483/Oz	\$4,357.60/Oz	-2.81% Drop
December Rate Hike Odds	50%	68%	Hawkish Shift
Us Dollar Index (Dxy)	105.10	105.85	+0.72% Gain

cyclical gravity of a strong dollar and the threat of high yields have proven impossible to ignore.

For the global mining sector, this sudden price contraction creates immediate capital friction. As gold retreats toward the \$4,300 mark, the margin of safety begins to thin for producers—particularly those navigating jurisdictions plagued by energy and labor inflation. Even exploration companies reporting high-grade strikes may find their valuations

decoupled from spot prices as investors prioritize strict quality in a volatile macro environment. Technically, gold is now testing a critical psychological floor between \$4,310 and \$4,330.

If selling pressure persists, the industry must brace for a test of the 200-day moving average at \$4,250—a level that could trigger a broader reassessment of project viability heading into 2027.

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Process feedback from the FloLevel Array allows the DCS to control aeration flow rate, adjustment of dart valve, optimisation of solids concentration, and adjustment of frother flow rate for the flotation circuit.

The New Iron *Geography*

WORDS BY PENNY LANEFORD // DATA BY SKILLINGS RESEARCH

FOR NEARLY THREE DECADES, SIMANDOU SAT IN THE GLOBAL IRON ORE MARKET LIKE A WARNING THAT NEVER ARRIVED. IT WAS THE DEPOSIT EVERYONE MENTIONED, THE PROJECT EVERYONE DISCOUNTED, AND THE THREAT AUSTRALIAN PRODUCERS COULD ACKNOWLEDGE WITHOUT IMMEDIATELY FEARING. THAT PHASE IS OVER. In Guinea, the mountain has been connected to the coast, ore has begun moving, and the market is no longer asking whether Simandou can happen. It is asking what gets repriced first: the cost curve, the grade premium, or China's dependence on the Pilbara.



From stranded mountain to operating corridor

Simandou's importance has never been only geological. High-grade ore matters, but high-grade ore locked hundreds of kilometres from the Atlantic is not a market event. It is a map problem. For years, the defining issue was not whether the deposit was large enough, but whether Guinea, Rio Tinto, Chinalco, Baowu, Winning Consortium Simandou and the Guinean state could turn a mountain range into an export corridor.

That is why the November 2025 start of operations mattered more than ceremony. Rio Tinto said the project was delivering more than 600 kilometres of new multi-use trans-Guinean rail, along with barge and transshipment vessel port facilities, to support combined exports of up to 120 million tonnes per year after commissioning and ramp-up. Both WCS and SimFer had begun transporting ore from mine gate to port by rail.

This does not mean Simandou is already running at full force. It means the market's risk model has changed. The old risk was existential: can the railway be built, can the port system work, can the consortiums stay aligned, can Guinea keep the project moving? The new risk is operational: how fast can the system ramp, how reliable will the logistics be, and how soon will physical tonnes begin competing with established seaborne supply?

That is a different kind of threat. An unbuilt project can be ignored in pricing. A commissioning corridor cannot.

The cost curve now has a West African reference point

Iron ore has always been a brutal commodity because small changes in cost, grade and freight can decide who stays in the money. For the past generation, the seaborne trade has

been shaped by the gravitational pull of Australia and Brazil: low-cost Pilbara tonnes at scale, Brazilian high-grade ore from Vale, and Chinese domestic supply acting as the uncomfortable marginal producer.

Simandou does not need to replace Australia to change that equation. It only needs to become reliable enough to alter the buyer's next-best option. At full capacity, 120 Mt/y would be material in a market where the balance between surplus and tightness can turn on far smaller volumes.

The base article correctly identifies the psychological shift: producers are no longer competing only with each other, but with a new high-grade West African supply source that sits outside the old Australia-Brazil rhythm.

The first impact will not be a collapse of Pilbara dominance. That is too simplistic. The first impact is leverage. If Chinese steelmakers believe a growing Simandou stream is available, negotiations with BHP, Rio Tinto, Fortescue and Vale become less one-sided. The timing is important. China Mineral Resources Group, created to centralise China's iron ore purchasing power, has already become a more assertive force in supplier negotiations, with reports of

pressure on BHP and scrutiny of lower-grade Australian products.

Simandou gives that buyer-side pressure a physical backstop. Without new tonnes, bargaining power is mostly institutional. With new tonnes, it becomes geological.

China gets its hedge

The story of Simandou is also the story of China deciding that dependence is not a strategy. For years, China's steel industry relied heavily on Australian iron ore because the Pilbara could deliver scale, consistency and freight logic that few regions could match. Political tensions did not change that reality. Neither did complaints about price. The material still had to arrive.

Simandou changes the psychology of that dependency. It does not free China from Australia. It gives China another bargaining instrument. The Financial Times described Simandou as the world's biggest mining project and framed it as a strategic win for China, noting its scale, Chinese-led capital and engineering, and its potential to disrupt a market long dominated by Australia.

That is why the ownership and operating architecture matters. The

THE NUMBER THAT MATTERS IS NOT 120 MT

The headline number around Simandou is 120 million tonnes per year. It is important, but it is not the number to watch first. In the near term, the real number is not capacity; it is reliable shipped tonnes. A 120 Mt/y corridor that ramps unevenly will move sentiment before it moves the full market. A smaller but steady export stream can still influence contract negotiations, grade premiums and buyer confidence.

WATCH FOUR THINGS: how quickly rail movements stabilise, how smoothly the Morébayah export system handles vessels, whether customers accept grade consistency, and whether Guinea can keep the state-consortium structure aligned. The cost curve will not wait for full capacity. It will begin adjusting once reliability is believed.

WHAT SIMANDOU HAS ALREADY CHANGED

MARKET QUESTION BEFORE 2025	WHAT HAS CHANGED IN THE RAMP-UP YEAR	WHY IT MATTERS NOW
Is Simandou still a stranded asset?	Operations have started, ore transport by rail has begun, and the export corridor is in commissioning.	The market must price ramp-up risk, not just construction risk.
Is the infrastructure real?	More than 600 km of rail and barge/transhipment export facilities are part of the operating system.	Infrastructure, not orebody size, was the historic constraint.
Is the ore quality market-relevant?	WCS describes Blocks 1 and 2 as holding more than 1.8 billion tonnes of estimated reserves at more than 65.5% Fe.	High-grade supply matters as steel-makers chase efficiency and lower emissions.
Is the capacity large enough to matter?	Rio Tinto cites up to 120 Mt/y combined export capacity after commissioning and ramp-up.	At scale, Simandou becomes a pricing variable, not a regional curiosity.
Does China gain optionality?	Baowu, Chinalco and WCS are central to the project structure and offtake logic.	China gets a strategic hedge against dependence on Australian supply.

project is not a simple Rio Tinto mine in Africa. WCS, Baowu, Chinalco, SimFer and the Guinean state sit inside a layered structure that makes Simandou both a mining development and a geopolitical supply-chain project. Rio Tinto’s release says CTG, the infrastructure company, is owned 42.5% by SimFer, 42.5% by WCS and 15% by the Government of Guinea.

For Beijing, the gain is not just tonnes. It is optionality. For Australia, the threat is not immediate displacement. It is the slow erosion of scarcity power.

The grade war beneath the benchmark price

The iron ore market often talks in benchmark prices, but the more important fight is happening inside the ore itself. Grade is becoming strategy. Lower-grade material requires more processing, more energy and often more coal in conventional steelmaking.

Higher-grade ore can improve productivity and reduce emissions intensity, particularly where steel-makers are trying to move toward direct reduction and lower-carbon routes.

The base article is right to push attention away from the 62% Fe benchmark and toward the quality gap. It argues that the real market

pressure is in DR-grade pellets, concentrates and high-grade feed, not only in headline fines prices.

Simandou sits directly inside this shift. WCS says its Blocks 1 and 2 contain more than 1.8 billion tonnes of estimated reserves with iron content above 65.5% Fe. Rio Tinto’s Simon Trott described Simandou as “an exceptional new source of high-grade iron ore” in demand for low-carbon steelmaking.

Simandou is not replacing Pilbara; it is rewriting the price conversation globally.

This does not mean every tonne from Simandou automatically becomes direct-reduction feed. Specifications, impurities, processing, blending and customer requirements will decide that. But the strategic point is clear: in a world where steelmakers are under pressure to cut emissions, high-grade ore carries value beyond simple iron units.

That is where Fortescue and other lower-grade producers feel the

pressure first. A recent report said Fortescue’s new Fortune Fines product is 55% Fe, down from its earlier West Pilbara Fines at 60% Fe, and noted that lower-grade ore increases emissions in conventional steelmaking because it requires more energy and more coking coal. Simandou’s arrival sharpens that contrast.

Guinea’s bargain: power, money and scrutiny

For Guinea, Simandou is not merely a mining project. It is a national wager. The government has tied the project to the broader Simandou 2040 vision, promising industrialisation, infrastructure and economic transformation. The Guardian reported Guinea’s planning minister Ismaël Nabé saying the project “must be for Guinea what oil was for the Gulf.”

That is a powerful line, but it is also a warning. Oil transformed Gulf states because infrastructure, governance, state capacity and global demand aligned over decades. A mine, even one as large as Simandou, does not automatically create shared prosperity. It can generate revenue, jobs and bargaining power. It can also deepen opacity if contracts, revenues, local content and environmental safeguards remain difficult to scrutinise.

The concerns are not theoretical. Civil society voices have questioned transparency around the project, and Guinea’s political context remains central to investor risk. Simandou’s success will therefore be judged on two tracks. The first is industrial: tonnes, rail reliability, port performance, safety and cost.

The second is national: whether Guinea converts mineral leverage into durable public value. The mining industry has seen too many megaprojects confuse commissioning with transformation. Simandou has crossed the first threshold. It has not yet crossed the second.

What 2027 will really test

The next phase will be less theatrical and more revealing. Ceremonies can launch projects. Only schedules, vessels, demurrage records, customer acceptance, grade consistency and cash costs can prove them.

The base article points toward 2027 as the year the market begins front-running a larger Simandou ramp. That is the right direction, but the language must be disciplined. The key test is not whether Simandou becomes the “Pilbara killer” overnight. It will not. The key test is whether Simandou becomes reliable enough for buyers, banks and rival



producers to price it into their decisions before the full tonnage arrives.

That is how commodity markets move. Not only when supply floods the market, but when credible supply changes behaviour in advance. If Chinese buyers negotiate harder, if Australian producers accelerate blending and product reforms, if Vale defends its high-grade franchise more aggressively, and if West African iron ore juniors suddenly find a warmer audience in capital markets, Simandou will already have done its work. The mountain has not conquered the market. It has entered the room. In iron ore, that may be enough.



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Why Ai Data Centers Are Pushing Copper To A 150,000-Tonne Deficit

The convergence of generative artificial intelligence and global power infrastructure has triggered a "copper intensity event" that is fundamentally rewiring mineral demand forecasts. While copper has long anchored the electrical grid, the pivot from traditional cloud computing to high-density AI workloads has dramatically amplified the volume of red metal required per megawatt.

As tech operators race to construct AI-ready campuses at the gigawatt scale, the mining sector faces a projected 150,000-tonne refined copper deficit in 2026. This structural shortfall stems not just from mine depletion, but from the massive physical infrastructure needed to power and cool advanced silicon.

Traditional data centers historically consume between 5,000 and 15,000 tonnes of copper per gigawatt (GW) of capacity. AI-optimized facilities are proving to be up to four times more intensive, demanding as much as 50,000 tonnes per GW. Modern GPUs require thicker bus-bars, larger transformers, and robust cabling networks to deliver massive amounts of low-voltage, high-current power directly to server racks.

Perhaps the most significant new demand vector comes from thermal management. Standard servers rely on air cooling through aluminum fins and steel ducting. However, the extreme heat generated by AI processors renders air cooling obsolete at the rack level. The industry is rapidly

While equity markets debate an AI bubble, the physical requirement for millions of tonnes of new copper remains a concrete, unavoidable reality for the global mining sector.

pivoting to liquid cooling systems—relying heavily on copper cold plates, manifolds, and extensive piping networks. Copper's unmatched thermal conductivity makes it non-negotiable for these high-density environments.

As total global refined copper demand nears 30 million tonnes in 2026, this added sector pressure threatens to tip the market into a severe deficit. Supply remains



constrained by declining ore grades and protracted project lead times. While infrastructure upgrades like the Lobito Corridor and high-grade restarts like Ivanhoe Mines' Kipushi project are coming online, they are unlikely to close the widening gap.

Compounding the supply crisis are equipment bottlenecks. Heavy transformers and high-voltage cabling now face procurement lead times stretching into 2028. For mining operators and investors, the takeaway is clear: the AI boom is, at its physical core, a copper story.

The AI Copper Multiplier

How the shift from traditional cloud computing to generative AI fundamentally alters hardware and infrastructure demands

METRIC	TRADITIONAL DATA CENTER	AI-OPTIMIZED FACILITY	IMPACT ON DEMAND
Copper Intensity	5,000 – 15,000 Tonnes/GW	25,000 – 50,000 Tonnes/GW	+300% to 400%
Rack Power Density	5 – 10 kW	40 – 100+ kW	+800% to 1,000%
Primary Cooling	Aluminium/Steel (Air)	Copper (Liquid/Cold Plates)	Fundamental Shift
Grid Connection	20 – 100 MW	200 MW – 1 GW+	Massive Scaling

Egypt Intensifies Crackdown on Illegal Gold Mining Along Sudan Border



Egyptian authorities have detained hundreds of people near the Sudanese border in a major operation targeting illegal gold mining and smuggling, as both countries continue to confront challenges linked to unregulated gold production.

Egyptian security forces have detained hundreds of people, including foreign nationals, during a large-scale operation along the country's border with Sudan, citing illegal gold mining and smuggling activities. According to the Egyptian military, the operation resulted in the detention of 87 Egyptian citizens and 136 foreign nationals. Authorities also seized significant quantities of equipment and machinery allegedly used in illegal mining operations.

The military did not disclose the nationalities of the foreign detainees. The operation comes as Egypt continues to expand its mining sector in the country's gold-rich southern region, home to major developments including the Sukari gold project.

Gold-Rich Border Under Pressure

The border region is shared with Sudan, another major gold-producing country where mining activity has become increasingly difficult to regulate amid the country's three-year conflict. A 2024 United Nations Panel of Experts report estimated that more than half of Sudan's gold production was smuggled out of the country, with gold accounting for approximately 70% of national revenue.

Videos circulating on social media showed large groups of Sudanese nationals gathered at a border crossing between the two countries. Sudanese media reported that they were miners who had been detained and expelled by Egyptian authorities.

Sudan Responds

Sudan's military leader, General Abdel-Fattah Burhan, visited the country's gold-rich northeastern region on

Monday. In a statement, he called on Sudanese citizens to avoid moving toward the northern and eastern borders in ways that could create tensions with neighbouring countries. Burhan also said the government was working to combat illegal mining and smuggling and would investigate the issue. The conflict in Sudan has placed gold at the centre of the country's economy, with the military and the paramilitary Rapid Support Forces accused of smuggling gold from the Darfur and Kordofan regions to finance their operations.

Conclusion

The Egyptian military said several suspected illegal miners had surrendered before being returned to their home country, although no nationalities were disclosed. It also warned that it would use all available measures to respond to threats along the border.



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COMMENCES OPERATIONS IN ANDHRA PRADESH



The historic Swarnagiri project shatters a decades-old state monopoly, reviving an ancient mineral belt to significantly boost domestic gold production.

WORDS BY PENNY LANEFORD // DATA BY SKILLINGS RESEARCH

In a landmark development for India's resource sector, commercial operations have officially begun at the country's first private primary gold mine. Inaugurated by Andhra Pradesh Chief Minister N. Chandrababu Naidu, the project is situated in the Kurnool district at a site recently renamed Swarnagiri, meaning "mount of gold."

Developed by Geomysore Services India Pvt Ltd with a 405 crore investment, the 598-hectare operation represents a major shift in an industry historically dominated by the state.

THE SWARNAGIRI PROJECT

Location	Kurnool district, Andhra Pradesh
Operator	Geomysore Services India Pvt Ltd
Investment	405 crore
Initial Output	400 kg/year
Scale-Up Target	900 kg annually
Job Creation	~700 direct roles

Breaking a 70-Year Monopoly

For decades, government entities like Karnataka's Hutti Gold Mines controlled 99% of India's indigenous

RETURN TO SUVARNAGIRI

A 2,000-YEAR-OLD LEGACY REVIVED

The Swarnagiri project is not just a modern industrial breakthrough; it represents the revival of an ancient mining legacy. The region surrounding the new operation in Andhra Pradesh's Kurnool district—historically known as Suvarnagiri or "Mount of Gold" was an active and vital gold-producing center during the Mauryan Empire under Emperor Ashoka in the 3rd century BCE.

Ashokan rock edicts discovered in the nearby village of Erragudi stand as a lasting testament to the area's rich, two millennia-old mining heritage.

To honor this profound history, the Andhra Pradesh state cabinet officially renamed the host village of Jonnagiri back to its original moniker, 'Swarnagiri', just days ahead of the mine's commercial launch.

Building on this historic foundation, Chief Minister N. Chandrababu Naidu has also announced the establishment of a dedicated gold jewellery manufacturing park adjacent to the mining site. This strategic "mine-to-market" initiative is designed to ensure that locally extracted gold will be crafted by regional artisans.

By keeping the value chain within the state, the government aims to generate a "golden future" for the region's youth, rather than simply shipping the raw bullion elsewhere for processing.

gold output. The Swarnagiri launch fundamentally alters this dynamic. The project, tapping into the mineral-rich Ramagiri and Veligallu greenstone belts, revives a region with mining history dating back to the Mauryan Empire under Emperor Ashoka in the 3rd century BCE.

Production Targets and Economic Impact

Following successful trial runs in May 2026, the mine is expected to yield approximately 400 kilograms of refined gold during its first full operational year. Production will scale rapidly, with near-term targets of 900 kilograms annually.

A planned second processing facility aims to eventually push yearly output toward two tonnes. This



phased expansion is supported by secured infrastructure, including an 18-kilometre pipeline drawing water from the Handri Neeva Sujala Sravanthi scheme.

Economically, the state government will collect a 4% royalty on the produced gold. This translates to an estimated 57 crore annually at initial levels, scaling to 144 crore at 900

kilograms. Furthermore, the operation creates approximately 700 direct jobs, with a commitment to hiring 80% of the workforce locally.

Conclusion

The Swarnagiri project marks a pivotal transition for Indian mining. By introducing private-sector efficiency to proven geological reserves, Andhra Pradesh is establishing a modern blueprint for reducing the nation's reliance on imported bullion while generating substantial regional economic growth.

The Swarnagiri project shatters a decades-old state monopoly, fundamentally altering the dynamic of a domestic industry where government entities previously controlled 99% of India's indigenous gold output.



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US Awards \$250 Million

TO ROBERT FRIEDLAND VENTURE FOR SEMICONDUCTOR DEVELOPMENT

The US government has awarded \$250 million to I-Pulse Inc. to support semiconductor development, strengthening domestic chip manufacturing while advancing technology for geothermal drilling and other industrial applications.

Driving Domestic Semiconductor Innovation

The US Department of Commerce has awarded \$250 million to I-Pulse Inc. through its CHIPS program to support the development of advanced semiconductor components. The funding is intended to strengthen domestic chip manufacturing while reducing US reliance on foreign semiconductor supply chains.

I-Pulse, co-founded by mining entrepreneur Robert Friedland, will use the funding to develop semiconductor components for a geothermal drilling technology that relies on high-power electrical pulses. The company operates laboratories in New Mexico and France. The technology uses high-voltage switches to send powerful electrical pulses into hot

The investment strengthens US semiconductor manufacturing while supporting technologies with applications in geothermal drilling, underground mining, manufacturing and defence.

granite and geothermal formations, fracturing and softening the rock before drilling begins.

The new silicon-carbide semiconductors are also expected to support applications in underground mining, manufacturing and defence.

Supporting US Supply-Chain Security

The investment reflects ongoing US efforts to strengthen critical supply chains and expand domestic semiconductor production. Friedland said the company has been working with multiple US government agencies on initiatives aimed at supporting American reindustrialisation.

The CHIPS program is designed to increase domestic semiconductor manufacturing capacity and reduce dependence on imported chips. As part of the broader initiative, the US government also holds a passive stake in Intel Corp. to support efforts to rebuild the country's chip manufacturing sector.

Closely held I-Pulse surpassed a valuation of \$1 billion a decade ago and, according to Friedland, could become a publicly listed company within the next few years.

The company's investors include major mining companies Rio Tinto Group and Newmont Corp.

Hemlo Expands Gold Resources, Strengthening Long-Term Growth Outlook

Hemlo Mining has significantly expanded the measured and indicated resource base at its flagship Ontario gold mine, reflecting the impact of ongoing exploration, updated geological modelling, and a revised long-term gold price assumption.

Unlocking More Value at a Historic Gold Camp

Hemlo Mining has reported a substantial increase in mineral resources at its flagship Hemlo gold mine in northwestern Ontario, highlighting the continued growth potential of one of Canada's longest-producing gold camps. The updated mineral resource estimate shows measured and indicated resources have increased by 34% to 96.9 million tonnes grading 1.55 g/t gold, containing 4.84 million ounces of gold.

This represents an addition of approximately 1.2 million contained ounces compared with the resource outlined in the company's 2025 technical report.

Exploration Drives Resource Growth

Inferred resources also recorded strong growth, rising 39% to 12.1 million tonnes grading 2.22 g/t gold for 866,000 contained ounces. According to the company, the updated estimate reflects drilling completed since the previous resource calculation, enhanced geological modelling, and a higher long-term gold price assumption of US\$2,500 per ounce, compared with US\$1,900 previously.

Mining analyst Steven Green of TD Securities said the updated resource reinforces the company's strategy of creating value through continued investment while demonstrating the scalability of the Hemlo mineral system. He also noted that much of the new resource growth could be converted into mineral reserves in the company's next technical report, expected in the second half of 2027.

Focus on Near-Mine Expansion

Hemlo is advancing a 130,000-metre drilling programme aimed at resource conversion and testing several near-mine targets, including the E-Zone, Horizon Zone, B-Zone Deep, South Rim and A-Zone. Approximately 45,000 metres have been completed this year.

Underground measured and indicated resources increased by 40% to 24.9 million tonnes grading 3.53 g/t gold for 2.83 million ounces, while open-pit resources grew by 25% to 2.01 million ounces. The updated estimate also includes the newly identified A-Zone, containing 635,000 inferred tonnes grading 3.43 g/t gold for 70,000 contained ounces. The zone remains open in all directions.

Looking Ahead

Chief Executive Officer Jason Kosec said the nearly five million ounces in the measured and indicated category, together with the ongoing drilling campaign, continue to highlight multiple near-mine growth opportunities across the camp.

Located near Marathon in northwestern Ontario, the Hemlo mine has produced approximately 25 million ounces of gold from underground and open-pit operations since production began in 1985. Discovered in 1981, the camp currently continues production from the Williams operation and its associated underground zones.





Gold Giant Under Pressure

Elliott's reported more than A\$1bn stake in Northern Star has turned one of Australia's most prominent listed gold miners into a test case for activist capital, operational accountability and gold-sector consolidation.

Northern Star Resources should be enjoying the gold boom. Instead, the company has become the centre of an activist-investor fight.

Elliott Investment Management has built a reported more than A\$1bn position in Northern Star and is pressing the board to review the company's strategy, refresh its leadership and consider whether a sale or asset reshaping could unlock more value for shareholders.

Northern Star has pushed back. Chairman Michael Chaney has rejected Elliott's call to explore a sale,

arguing that now is not the right time as the company works through operational issues, leadership transition and investor frustration.

The dispute comes after a difficult period for Northern Star, including production downgrades, cost pressure and operational challenges around key assets. For mining investors, the question is bigger than one company: if a gold miner cannot deliver cleanly during a strong gold market, how patient should shareholders be?

AT A GLANCE

COMPANY

Northern Star Resources

SECTOR

Gold

POSITIONING

Major Australian-listed gold miner

ACTIVIST INVESTOR

Elliott Investment Management

STAKE

Reported more than A\$1bn

REPORTED HOLDING

About 4%

ELLIOTT DEMAND

Strategic review, possible sale or asset reshaping, board renewal

COMPANY RESPONSE

Sale process rejected as "not the right time"

CORE ISSUE

Strong assets, weaker recent execution



High-quality gold assets are no longer enough. Investors want proof that management can turn the cycle into value.

WHAT HAPPENED?

JUNE 2026

Elliott publicly revealed a major position in Northern Star and called for a strategic review.

ELLIOTT'S ARGUMENT

Northern Star owns valuable gold assets but has underperformed because of execution problems, cost pres-

sure, disclosure concerns and strategic missteps.

Northern Star's response The board says it remains open to serious proposals, but that launching a sale process now would not be in shareholders' best interests.

WHY NOW?

Gold prices have been fa-

vourable, but Northern Star has struggled to turn that backdrop into full investor confidence.

WHAT COMES NEXT

Investors will watch for board renewal, CEO succession, operational recovery and whether takeover interest returns.

THE BACKSTORY

Northern Star is not a distressed miner with poor assets. That is what makes the story interesting. Elliott's case is built around the idea that Northern Star owns a valuable portfolio, but has not delivered the operational consistency or market confidence expected from assets of that quality.

The pressure intensified after production downgrades and cost concerns. Operational issues at Kalgoorlie and across the portfolio damaged confidence, while weaker guidance left investors asking why the company was not capturing more upside from the gold cycle.

Elliott's campaign lands at a sensitive moment. Northern Star is already managing leadership change, board scrutiny and a need to prove that its operational reset is working. The activist pressure now turns those internal challenges into a public test of credibility.

Why This Matters

This story matters because it brings activist-investor pressure into the centre of the gold sector. For years, mining companies have argued that patience is needed to manage complex assets, long-life projects and cyclical markets. Elliott is challenging that argument. Its message is simple: strong assets are not enough if execution, disclosure and capital discipline do not follow.

That matters beyond Northern Star. If Elliott succeeds in forcing a deeper review, it could encourage more activist campaigns across listed miners, especially where investors

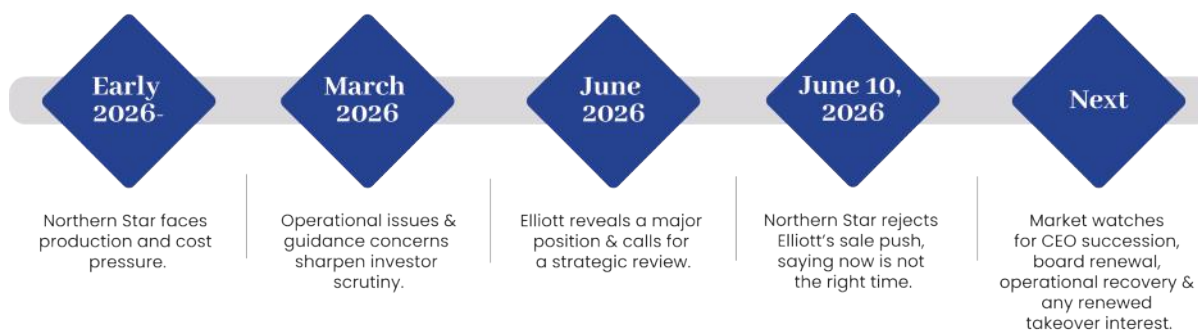
believe high-quality assets are being discounted because of management performance.

It also raises the prospect of consolidation. A sale process, asset spin-off or portfolio simplification could reshape how the market values Australian gold producers and may put pressure on other boards to explain why their current structure is the best way to create value.

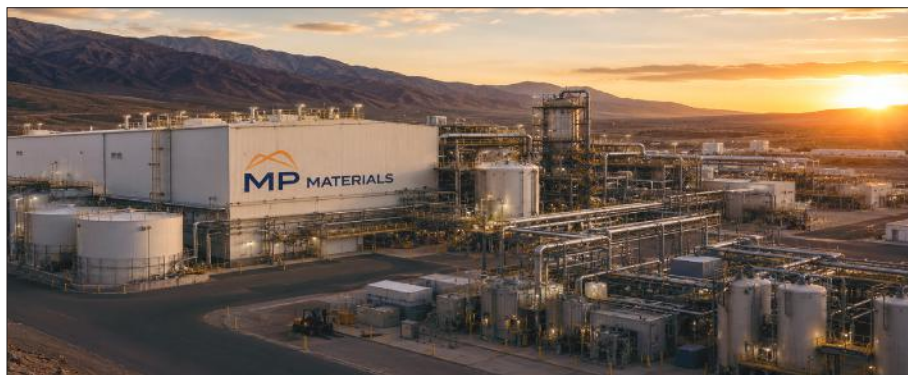
At the heart of the fight is one question: are Northern Star's assets worth more under the current strategy, or would shareholders be better served by a different owner, a

different boardroom, or a different structure?

T I M E L I N E



The Mine Is Not the Prize



America can dig rare earths. China still controls the part that turns them into power

China's latest export-control move landed with the precision of a warning shot. On June 22, Beijing barred Chinese firms from supplying dual-use goods to 10 U.S. companies, including MP Materials and USA Rare Earth. The order does not collapse America's rare earth ambitions overnight. It does something more revealing. It tests whether the country's mine-to-magnet strategy can operate under political pressure, where access to materials, technology and equipment is no longer treated as a routine commercial transaction, but as strategic leverage right now globally too.

A targeted order with a bigger message

The Chinese Commerce Ministry framed the measure as a national-security response to Washington's latest restrictions on Chinese technology firms. Chinese companies are blocked from exporting "dual-use" items to the 10 named U.S. firms, and third-country transfers of Chinese-origin items to those companies require approval. Beijing said the step was

tied to the U.S. government's "wrongful expansion" of its Chinese military-company list.

Rare earth security now depends on factories, not just mines.

That phrasing moves rare earths out of the language of mining and into the language of strategic denial. MP Materials is not just another company. Its Mountain Pass operation in California is the highest-profile U.S. rare earth mine and processing site, and the company presents itself as a producer moving across mining, processing, metallization and magnet manufacturing. USA Rare Earth is trying to build a separate domestic route, with a sintered neodymium-iron-boron magnet facility in Stillwater, Oklahoma. The order does

not automatically mean either business loses access to every critical input. Effects depend on contracts, inventories, suppliers and license decisions. But the signal is hard to miss. The United States is trying to build an industrial chain that can feed electric motors, drones, robotics, wind turbines, aerospace systems and defense platforms. China is reminding the market that the chain remains exposed long after ore leaves the ground.

For investors, the warning is practical. A rare earth project is not de-risked because it has a mine, a press release or a government partner. The de-risking happens only when separated oxides, metals, alloys and finished magnets can move through qualified customers at scale.

The mine is not the supply chain

The rare earth debate is often told as a story of deposits. That is too simple. The International Energy Agency describes a value chain that runs through extraction, beneficiation, chemical upgrading, oxide separation, metal refining, alloying and magnet manufacturing.

That is where China's advantage sits. The IEA says China accounted in 2024 for 60% of global mined production of magnet rare earths, 91% of refined output and 94% of sintered permanent magnet production. Those figures explain why export controls can move through the industrial economy faster than a mine can be permitted or built.

Permanent magnets are the sharp end of the issue. The IEA says they account for around 95% of rare earth consumption by value. High-performance neodymium-iron-boron magnets are small components with large consequences: they sit inside motors, actuators, sensors and systems where weight, efficiency and precision matter. They matter to electric vehicles, wind turbines,



robotics and automation. In defense, they matter because advanced systems cannot easily substitute away from qualified components.

This is why the June order lands differently from an ordinary trade dispute. It targets companies attached to the U.S. attempt to close the most sensitive gaps. MP Materials gives Washington a domestic anchor at Mountain Pass. USA Rare Earth offers another route through Oklahoma magnet capacity. Both are part of a national effort to turn “critical minerals” from a policy slogan into industrial output.

But geology alone will not decide the contest. The hard part is building the middle of the chain: trained workers, separation know-how, chemical plants, metal and alloy capability, magnet equipment, quality systems and customer qualification. These are not easily bought in a hurry.

The next phase is execution, not announcements

The G7 understood this when leaders met in Evian on June 17. Their critical-minerals declaration said they had “grave concerns” over economic coercion, arbitrary export restrictions and retaliatory measures affecting critical minerals and dual-use items. They committed to work with partners to reduce critical dependencies and make attempts to weaponize economic dependencies fail. That is strong diplomatic language. It is not

yet a plant, a magnet line or a qualified supply contract. The G7 also set a target to reduce dependence on a single non-G7 supplier for rare earths and permanent magnets to below 60% by 2030. The target is useful because it admits the scale of the problem. It is also demanding because the calendar is short. Rare earth refining and magnet manufacturing require permitting, environmental control, process stability, skilled operators and bankable offtake.

The IEA’s numbers show the gap. Even with announced projects, existing and planned capacity outside the dominant supplier would cover only about half of mining demand by 2035, around a quarter of refining demand and well below 20% of magnet demand. The agency identifies magnet production as the main bottleneck for diversification.

That is the fresh lesson from China’s latest move. The West has spent years talking about supply security as if mines were the decisive battlefield. Beijing’s controls show the battlefield is wider and less forgiving. A mine can create concentrate. It cannot by itself create strategic resilience.

For the United States, the test now is whether public finance, private capital and industrial customers can move at the same speed. Defense agencies may accept higher costs for secure supply. Automotive and technology buyers may not, unless

disruption makes the premium unavoidable. Banks will want contracts. Communities will want safeguards. Regulators will want compliance.

China has made that time more expensive. Its export-control list does not end America’s mine-to-magnet strategy. It strips away the comfort that the strategy can be built slowly while the old supply chain quietly fills the gaps.

WHAT CHINA’S JUNE 22 ORDER DOES

China’s June 22 action names 10 U.S. companies and blocks Chinese firms from supplying them with dual-use goods. The listed firms include MP Materials and USA Rare Earth, putting rare earths directly inside the wider U.S.-China security fight. The restriction also covers third-country transfers of Chinese-origin items to those firms unless approval is granted.

The commercial impact will depend on inventories, contracts and licensing. The strategic message is clearer: rare earth supply risk now extends beyond mines into equipment, technology, processing routes and qualified magnet capacity for industrial buyers worldwide.

Before the *Wall Breaks*

The most important sound in a modern open-pit mine may no longer be the blast, the haul truck, or the crusher. It may be a movement too small for the eye to see: a few millimetres of displacement in a pit wall, a change in pore pressure inside a tailings facility, a deformation pattern appearing on a radar screen before it becomes a headline. Mining has always lived with ground risk. What is changing now is the expectation that the ground should not merely be inspected. It should be continuously read, modelled, questioned and acted upon.

WORDS BY CHARLES PITTS // DATA BY SKILLING'S RESEARCH

For most of modern mining history, geotechnical risk was managed through a rhythm of surveys, inspections, design assumptions, periodic model updates and human judgement. That rhythm is not dead. But it is no longer enough.

The new geotechnical frontier is the live digital twin: a continuously updated virtual version of the pit wall, dump, slope or tailings facility, fed by mapping, radar, photogrammetry, piezometers, GNSS, satellite InSAR, fibre-optic sensing and mine planning data. In its serious form, a digital twin is not a decorative 3D model on a control-room screen. It is a decision system. It asks whether the mine the engineers designed is still the mine the geology is revealing.

That distinction matters. A static model can tell a mine what it believed last week, last month or at the design stage. A live geotechnical twin can ask whether the exposed ground, the measured movement and the operating plan are still aligned today. When they are not, the mine has a choice: change the plan before the wall changes it for them.

The clearest example comes from Pueblo Viejo in the Dominican Republic, where engineers used a digital twin approach to manage slope instability in the Moore Pit. Rocscience's case study describes an initial 3D limit equilibrium model that identified a low factor of safety of about 1.07 in highly anisotropic carbonaceous sediments, against a site design acceptance criterion of 1.2. Instead of treating the model as a one-time verdict, the team built a process around routine mapping, modelling and monitoring.

Structural and rock-mass mapping was carried out every 20 metres of vertical advance using ShapeMetriX, with updates then fed into Slide3 as new geotechnical conditions appeared. Radar and 24/7 monitoring watched the slope for deformation.

Pueblo Viejo Shows the New Standard

What happened at Pueblo Viejo is important because the story is not "software saved the mine." That would be too simple. The real story is that separate forms of evidence were made to argue with one another fast enough to matter.

The digital twin identified low-angle faults and shears that were not captured in the original 3D model. Photogrammetry helped verify the spatial extent of the predicted failure surface. Radar monitoring later detected accelerating displacement around 23 hours before the collapse, allowing the pit to be evacuated under the site's response protocol. The eventual slope failure involved roughly 10,000 cubic metres of rock mass.

That is the real editorial point for the industry. The win was not that the wall did not fail. The win was that the failure was interpreted before it became uncontrolled. The mine did not remove geology from the equation. It shortened the distance between observation, interpretation and action.

3GSM's summary of the Pueblo Viejo case makes the same point in technical language: routine aerial photogrammetry, semi-automatic rock-mass characterisation, 3D slope-stability modelling and ground-based interferometric radar allowed near-real-time comparison between modelled and realised ground conditions. The process helped identify a high-risk area that would not have been identified if the digital twin had not been implemented and maintained during mining.

That word – maintained – is where many mines will either succeed or fail. A digital twin is not a procurement item. It is not finished when the vendor leaves the site. It only works if it is kept alive by disciplined data, site-specific thresholds, competent geotechnical review and the authority to stop or alter operations when the evidence changes.

From Instrumentation to Interpretation

The mining sector does not lack instruments. It lacks integration. A vibrating-wire piezometer can warn that pore pressure is moving in the wrong direction. A ground-based radar can detect subtle slope displacement. GNSS stations can track crest and slope movement. Satellite InSAR can observe deformation across wide areas.

Fibre-optic sensing can turn long cable runs into distributed strain indicators. LoRaWAN and similar telemetry systems can move data from remote sensors into central systems without requiring every instrument to be cabled back to a control room. The base article correctly identifies this sensor stack as the heart of a modern geotechnical system.

But instruments do not make a mine safer by existing. They make it safer only when each reading is tied to a trigger, each trigger is tied to a response, and each response is owned by someone with operational authority.

This is why the conversation is moving from monitoring to governance. The Global Industry Standard on Tailings Management is explicit that operators should design, implement and operate comprehensive performance and engineering monitoring systems that verify design assumptions and monitor potential failure modes.

It also requires measurable indicators, criteria and performance parameters, with performance outside expected ranges addressed through Trigger Action Response Plans or critical controls.

That makes the digital twin less futuristic than it first sounds. It is the technological expression of a governance idea: know your facility, measure its behaviour, compare performance against design intent, and act before the loss of control.

Tailings: The Hardest Test

If open-pit slopes are the visible face of the problem, tailings facilities are the long liability sitting behind the mine. The pressure on tailings governance intensified after disasters such as Brumadinho, where 272 people died when a tailings dam failed in Brazil in 2019. Recent reporting continues to underline how tailings facilities can remain dangerous for communities, ecosystems and companies long after ore has moved through the plant.

The Global Industry Standard on Tailings Management, published in 2020, sets the goal of zero harm to people and the environment, with zero tolerance for human fatality. It calls for an interdisciplinary knowledge base, monitoring throughout the facility lifecycle, emergency preparedness, public disclosure and clear accountabilities around the Engineer of Record, Responsible Tailings Facility Engineer and operating company.

This is where digital twins may become most valuable. A tailings facility is not a static civil structure. Its risk profile changes with deposition, water balance, drainage, weather, construction quality, foundation behaviour, operational discipline and closure planning. A PDF report can document those conditions. A live system can reveal when they are drifting.

The safest modern mine is no longer watched; it is continuously interpreted.

Real-time monitoring of tailings dams is already being studied as a way to reduce risk in structures that evolve over time. Research on real-time assessment of earthfill and tailings dams notes that IoT monitoring is becoming a preferred safety tool, but also highlights the technical challenge: the supporting numerical model must respond fast enough for real-time data assimilation to be useful.

That is the next hard frontier. It is not enough to collect data. The mine must be able to process it, trust it, question it and act on it within the time window the ground allows.

AI Is Useful – But It Is Not the Engineer

The base article points toward machine learning, including XGBoost, support vector machines and physics-informed models. That direction is real. Machine learning can help classify movement patterns, identify anomalies, rank risk zones and support faster interpretation of large sensor datasets. But mining should be careful with the language. A model that predicts well on historical data is not automatically safe in a new geological setting.

The most credible path is not pure artificial intelligence replacing geotechnical judgement. It is physics-informed decision support: models that learn from data while remaining constrained by rock mechanics, hydrogeology, slope behaviour and engineering principles.

Recent research on physics-informed neural networks for landslide prediction makes exactly this point: conventional data-driven models can be disconnected from the physics of failure, while physics-informed approaches try to add constraints based on deformation and stability behaviour. In other words, the industry should not ask AI to become a geotechnical engineer. It should ask

AI to become a disciplined assistant to one: faster at scanning patterns, tireless at comparing signals, useful in surfacing anomalies, but never allowed to overrule the physical behaviour of rock, water and waste.

Software vendors are moving in that direction. Datamine describes MineScape 2026 as an execution-ready mine planning platform that unifies design, scheduling and simulation to support operational decision-making, while its broader planning tools are positioned around keeping strategy and execution aligned.

The market signal is clear: mine planning software is no longer only about designing the best extraction sequence. It is increasingly about keeping the plan alive under changing ground conditions.

The Human Factor

The irony of automation is that it makes human judgement more important, not less. A live geotechnical system can calculate, visualise and alarm. It cannot decide what level of risk a company is culturally willing to normalise. It cannot force a production superintendent to respect a trigger.

It cannot guarantee that a dashboard warning will become a field action. It cannot replace a senior engineer who understands that the most dangerous reading is sometimes the one that almost fits the model.

That is why the future geotechnical team will look different. The best mines will not simply hire more people to stare at more screens.



They will build integrated risk rooms where geotechnical engineers, planners, surveyors, operations leaders, tailings specialists and data teams share the same version of the ground. The digital twin becomes the common language between them.

This is the operational shift **Skills** readers should watch. The mine of the future will not be defined only by autonomous trucks, AI dispatch or remote operations centres. It will be defined by whether the company can hear the ground early enough to make a responsible decision.

The Bottom Line

The old geotechnical playbook asked whether the design was safe. The new one asks whether the mine is still behaving safely.

That may sound like a small change. It is not. It moves safety from a periodic engineering exercise to a continuous operating discipline. It changes monitoring from evidence collected after the fact into evidence used before the event. It turns the pit wall, the tailings dam and the waste dump into active participants in the mine plan.

Digital twins will not end slope failures. They will not make complex geology obedient. They will not remove the need for conservative design, field experience or the courage to stop production. But they can change the timing of knowledge. In geotechnical risk, timing is everything.

The next failure may not announce itself with a crack wide enough to see. It may arrive first as a velocity change on radar, a pore-pressure shift, a photogrammetry update or a deformation signal from space. The companies that survive the next decade of scrutiny will be the ones that know what those signals mean before everyone else does.

Challenges Awaiting BHP's New Chief Executive



As Brandon Craig assumes leadership of the world's largest miner on July 1, he must balance record-high equity valuations against industrial action, capital overruns, and evolving commodity frontiers.

When Brandon Craig takes the helm at BHP, the 53-year-old executive will inherit an operational landscape as lucrative as it is fraught. Driven by investor bets that AI data centers, the energy transition, and defense spending will spark an unyielding demand surge for copper, BHP shares are trading near record highs. Yet beneath this buoyant valuation lies an immediate set of challenges requiring decisive executive action.

Cost Control and Project Execution

For institutional investors, structural inflation and capital expenditure overruns are top-of-mind concerns. The urgency around cost discipline intensified dramatically following BHP's recent announcement of a US\$2.3 billion charge.

The charge stems from significant cost overruns and commissioning delays at the Jansen Stage 2 potash project in Canada—an operation that sat directly under Craig's purview during his tenure as Head of the Americas. With major capital programs actively underway, Craig's capital discipline will be heavily scrutinized. BHP's current development pipeline includes the massive Vicu a copper joint venture in Argentina and Chile, alongside Copper South Australia, where a critical

decision regarding a multibillion-dollar smelter expansion is due by the end of the year.

Labor Friction and Strategic Portfolios

Beyond project execution, managing complex labor relations represents an immediate hurdle. Craig faces an imminent test in Western Australia's vital iron ore heartland, where union tensions are escalating at BHP's Port Hedland export operations. Organized labor groups have threatened to launch

coordinated strikes for the first time in decades if upcoming negotiation talks scheduled for July 7 fail to reach a resolution. While Craig is not expected to immediately chase large-scale corporate mergers, the global landscape remains highly fluid. Analysts note that once the Anglo American and Teck Resources transaction concludes, the combined entity may become an attractive target for BHP once again.

Instead of massive buyouts, Craig has indicated an openness to value-accretive, bolt-on acquisitions. One area receiving heightened internal focus is uranium. Driven by power-hungry data centers and government efforts to diversify energy portfolios in the wake of the Iran war, uranium demand is experiencing a notable structural upswing. BHP already controls approximately 5% of global uranium supply, extracted as a byproduct from its flagship Olympic Dam copper operations. Craig recently acknowledged that achieving meaningful corporate scale in uranium is difficult, yet BHP leadership has increasingly classified it as a strategic, future-facing commodity.

BHP'S KEY GROWTH HORIZONS

PROJECT / ASSET	COMMODITY	REGION	STATUS / CRITICAL MILESTONE
Jansen Stage 2	Potash	Canada	Impacted by a \$2.3B charge due to cost overruns and delays.
Port Hedland	Iron Ore	Australia	Facing potential coordinated union strikes if July 7 talks fail.
Vicuña Venture	Copper	Argentina / Chile	Active large-scale exploration and development joint venture.
Copper South Australia	Copper / Uranium	Australia	Multi billion-dollar smelter expansion decision due by year-end.
Olympic Dam	Uranium / Copper	Australia	Actively produces 5% of the global uranium supply.

Why Lithium Producers Are Looking Beyond the EV Market

As electric vehicle sales cool, major lithium producers are finding a robust new growth driver in stationary battery storage, signaling an end to the market's recent overcorrection.

At the Fastmarkets Global Lithium, Battery and Critical Materials Conference in Las Vegas, a renewed sense of optimism permeated the halls. Gathering this week, the world's leading lithium producers confirmed that booming demand for stationary battery storage systems is successfully offsetting sluggishness in key electric vehicle (EV) markets, fundamentally reshaping the sector's near-term outlook.

For years, passenger EVs dictated the ebb and flow of global lithium demand. However, recent regulatory shifts and cooling automotive sales across the United States and other major markets triggered an industry overproduction cycle that historically drove prices sharply lower. Today, propelled by the rapid expansion of artificial intelligence and critical grid-strengthening initiatives, the market is finding a new equilibrium.

A Fundamental Market Shift

"The period of market overcorrection is over," stated Raju Daswani, CEO of Fastmarkets. He noted that energy storage has effectively become the primary growth engine for the white metal, with demand for Battery Energy Storage Systems (BESS) expanding at an estimated 40% annually.

"This is a fundamental change, and it adds a robust foundation if you compare it to a far more volatile, consumer-driven electric vehicle demand picture," Daswani explained

to an audience of roughly 1,100 attendees—a 10% increase from the previous year.

The prevailing market optimism marks a stark contrast to the dour atmosphere of the 2025 gathering, supported by the reality that spot lithium prices have more than tripled since that time.

Strategic Rebalancing

Major global producers are actively adapting to this dual-demand reality. Jérôme Pécresse, head of Rio Tinto's aluminum and lithium business unit, indicated that lithium demand will become significantly more balanced between EVs and stationary storage over the next two years. Rio Tinto is currently advancing its strategic aim to significantly boost its lithium production capacity by 2028.

Similarly, Albemarle, the world's largest lithium producer, highlighted the reliability of the storage sector compared to the often "lumpy" nature of automotive demand. Eric Norris, Albemarle's Chief Commercial Officer, pointed out that grid storage requirements are much more evenly distributed on a global scale, presenting a highly attractive and consistent demand driver.

Concrete commercial momentum was further demonstrated at the conference as Ioneer announced a new letter of intent with Hyundai



Engineering and a South Korean government agency to support the ongoing development of its Nevada lithium project.

The Call for Government Intervention

Despite recovering prices and rising demand, industry leaders stressed the urgent need for stronger Western governmental support to compete with low-cost Chinese processing dominance. While G7 leaders recently agreed to better coordinate efforts to bolster Western critical mineral markets, producers argue more structural financial underpinning is required.

"What are governments willing to pay for security of supply?" asked Dale Henderson, CEO of Australian producer PLS. "There's a tax to be paid for that, and it hasn't been paid yet."

Meanwhile, Audrey Robertson, the U.S. Assistant Energy Secretary, urged the sector to prioritize technological breakthroughs. She predicted that the methodology for processing lithium will fundamentally transform within the next five years, challenging the industry to innovate its way toward true supply chain security.

Canada and Japan Weigh Joint Stockpiling in Strategic Push for Critical Minerals

Canada and Japan are actively exploring joint stockpiling and mining partnerships to secure reliable supply chains for critical minerals like graphite and gallium.

Driven by a mutual need to diversify battery metal pipelines away from Chinese dominance, this bilateral effort signals a potential influx of Japanese capital into Canadian resource assets. In a concerted effort to secure battery metals and rare earth elements, Canada and Japan are actively exploring joint stockpiling and mining partnerships to reduce their reliance on Chinese supply chains.

During Canada's largest-ever trade mission to the Asia-Pacific region, International Trade Minister Maninder Sidhu met with Japanese officials in Tokyo to outline avenues for comprehensive resource cooperation. The talks focused on securing steady supplies of critical minerals—particularly graphite and gallium—through joint mining ventures, off-take agreements, and strategic stockpiling arrangements.

"We're offering Japan that avenue to do more with Canada in terms of critical minerals," Sidhu noted, highlighting a recent off-take agreement between Canada's Nouveau Monde Graphite and Japan's Panasonic as a successful blueprint for future industry partnerships.

This bilateral push comes amid heightening geopolitical friction.

China, which currently dominates the global production and refinement of rare earth elements, recently prohibited the export of dual-use materials to 20 Japanese entities. This restriction, which followed diplomatic tensions regarding Taiwan, has prompted Tokyo to aggressively accelerate its search for stable, allied resource pipelines for its manufacturing and technology sectors.

Beyond critical minerals, the Canadian delegation—comprising roughly 300 members from 180

organizations—is also working to expand energy cooperation. Japanese conglomerates like Mitsubishi Corporation have expressed strong interest in deepening their Canadian investments. Mitsubishi is already a cornerstone investor in the LNG Canada project in British Columbia, North America's first major liquefied natural gas export facility with direct access to the Pacific.

For mining investors, this strengthening geopolitical alliance signals a potential influx of capital into Canadian critical mineral assets. As Japan looks to secure its industrial future outside of Beijing's sphere of influence, Canada is rapidly positioning itself as the premier, reliable alternative for the raw materials driving the global energy transition.

Canada is rapidly positioning itself as the premier, reliable alternative for the raw materials driving the global energy transition.





CHINA

Rewrites the

IRON ORE

Bargain

WORDS BY MO SHINE // DATA BY SKILLINGS RESEARCH

CHINA'S LATEST IRON ORE SIGNAL IS BIGGER THAN A DEMAND FORECAST. A STATE-BACKED CHINESE RESEARCH VOICE SAYS IMPORTED ORE COULD FALL TO HALF OF NATIONAL CONSUMPTION BY 2030. THE NUMBER MAY BE HARD TO REACH, BUT THE MESSAGE IS CLEAR: BEIJING WANTS MINERS, TRADERS AND STEELMAKERS TO BELIEVE THE OLD SEABORNE IRON ORE ORDER IS NO LONGER GUARANTEED.

For the global iron ore industry, the issue is not whether China walks away from imports. It is whether China buys with less dependence.

China's 50% target is a bargaining signal

For more than two decades, the iron ore trade has rested on a blunt commercial fact: China needed the ore, and Australia and Brazil had the scale to supply it. That bargain built the modern iron ore market. It gave the Pilbara global weight. It made Brazil's high-grade ore strategically important. It filled capesize shipping lanes, supported port expansions, and created the earnings base for some of the world's largest miners. It also left China exposed.

The world's biggest steel producer has long been the world's biggest iron ore buyer, but size has not always meant control.

China can consume more than anyone else and still face prices shaped by seaborne supply, producer discipline, freight, grade spreads, inventories and the negotiating power of a small group of major exporters.

That is why the June forecast from Yilin Wang, general manager of market research and external cooperation at the China Mineral Resources Group Institute, matters. Wang told an industry conference in Singapore that imported iron ore could account for about 50% of China's total consumption by 2030, down from around 80% now. The forecast also pointed to weaker Chinese steel output, more domestic ore concentrate, more overseas equity ore and greater use of scrap steel.

This must be read carefully. The forecast is about import dependence, not a simple halving of import tonnes. Actual import volumes will depend on crude steel production, ore grades, scrap availability, domestic concentrate output, furnace mix and

the pace at which overseas equity tonnes arrive. Still, the signal is powerful.

The source is not a detached market consultancy. China Mineral Resources Group, or CMRG, is a state-backed buyer created to strengthen China's hand in iron ore procurement. Its institute saying import dependence could fall sharply is not just a market view. It is a message to the sellers.

China does not need independence; it needs credible alternatives now.

That message now has commercial weight. CMRG is no longer a distant policy experiment. It is already involved in iron ore negotiations with major exporters. BHP said in April: "We have concluded iron ore sales contract negotiations with the China Mineral Resources Group." Reuters reported that the new agreement ended a months-long dispute and included use of an additional Chinese iron ore price index for one of BHP's major products.

That gives the 2030 forecast a harder edge. When a state-backed buyer already negotiating with the majors says China's reliance on imports could fall, the market should hear both forecast and leverage.

The leverage is not only in long-term plans. It can show up in short-term buying behaviour: port inventories, purchase timing, product-specific pressure, index selection and contract terms. China does not need to stop

buying seaborne ore to test supplier discipline. It only needs to show that the buyer has more tools than it used to.

The old question was: how much iron ore will China need? The sharper question now is: how much urgency will China still show when it buys?

Simandou changes the conversation before it changes the market

The most visible symbol of China's diversification push is Simandou. The long-delayed Guinean iron ore project has moved from promise to cargo. SimFer, the joint venture between the Government of Guinea, Rio Tinto and the Chinalco-led CIOH consortium, said in March that Simandou was exporting product to global markets. The company said first iron ore left Guinea in December 2025, followed by a full cargo in early February 2026 that arrived in China in March.

Chris Aitchison, Managing Director of SimFer, called the export milestone "a major achievement for the partnership and for Guinea." That is true at project level. It is also important at market level.

Simandou does not need to replace Australian ore to matter. Its strategic power is different. It gives China a credible new source of large-scale African iron ore in a market long dominated by Australia and Brazil. It adds another supplier pole. It gives Chinese mills more optionality. It gives CMRG another argument in the room.

S&P Global Market Intelligence has said the first wave of shipments from Guinea's Morebaya Terminal confirms the project has moved from development to operational status. Its vessel-tracking assessment showed early cargoes bound for major Chinese ports, with some shipments going directly to end users including China Baowu Steel.



That is the part miners should watch closely. The shipment count matters, but the customer list may matter more. Which mills take the ore? Is it used directly or blended? How does it price against Pilbara and Brazilian material? Does it support lower-emission steelmaking claims? Does it create pressure on discounts for lower-grade products?

There are reasons for caution. Simandou is not a clean overnight substitute for the Pilbara. The ramp-up must prove itself through rail, port, mine and shipping cycles. Guinea does not have Western Australia's freight advantage into North Asia. Political and operational risk remain real. Ore quality, blending behaviour and steel mill acceptance will decide how quickly the tonnes become normal commercial supply rather than strategic headlines. But even imperfect alternatives have market power.

If Simandou reaches meaningful scale, it may not crush Australian or Brazilian exporters. It may do something subtler: reduce China's sense of exposure. That alone can change

negotiations. For the major miners, the risk is not that China suddenly disappears as a buyer. The risk is that China becomes a less urgent buyer. A buyer with Simandou, domestic concentrate, scrap and centralised procurement does not negotiate in the same way as a buyer trapped between Australia and Brazil.

That is why Simandou should not be covered only as a mine-opening story. It is a pricing-power story.

Scrap, inventories and India will shape the next iron ore cycle

If Simandou is the visible story, scrap is the quieter threat. China's iron ore security strategy is often described through mines: more domestic output, more overseas equity supply, more African ore and more control over procurement. But scrap steel could do more to reshape long-term ore demand than any single new mine.

MNI reported last year that Alyssa Ren, senior ferrous analyst at Mysteel in Shanghai, said China could reduce iron ore demand by as much as 526 million tonnes a year by 2030 if scrap

recycling reached 350 million tonnes annually. That should be treated as an upper-end scenario, not a base-case forecast. Ren also noted that a 300 million to 320 million tonne scrap range may be more realistic by the end of the decade, and that ore-purity differences make conversion estimates rough. The detail matters. Scrap is not just "less ore." It is a different industrial system.

It requires collection networks, sorting, quality control, logistics, pricing, furnace capacity and confidence that the recycled material can meet steel-grade requirements. China can build more scrap supply, but turning that supply into consistent steelmaking input is harder than announcing a target. Still, scrap has one strategic advantage no seaborne cargo can match: it is domestic.

Every tonne of usable scrap reduces exposure to imported raw materials. It also supports China's decarbonisation agenda, especially where electric arc furnace capacity can absorb more recycled metal. This changes the question for miners. The issue is not simply whether China

imports fewer tonnes. It is which tonnes China still values most. High-grade, reliable, low-impurity ore may hold its place better. Lower-grade or harder-to-blend products may face more pressure. The market could become less about bulk volume and more about grade, emissions, blending flexibility and delivered value at the mill.

That is where inventories come in. China's port stocks and mill buying patterns are not just operational details. They are part of the leverage system. If inventories are comfortable, mills can delay cargoes. If CMRG pushes for different pricing mechanisms, sellers have to decide how much resistance they can afford. If new ore sources appear credible, even slowly, the buyer's patience improves. The other side of the story is India.

If China is trying to reduce import dependence, the major miners will look more closely at the next steel-growth engine. India does not replace China's scale today. But it gives exporters a future-demand argument beyond the Chinese construction cycle. BHP and Rio Tinto have already been pointing to India as a major steel growth frontier. That matters because the miners may

have to defend margins in China while building demand exposure elsewhere.

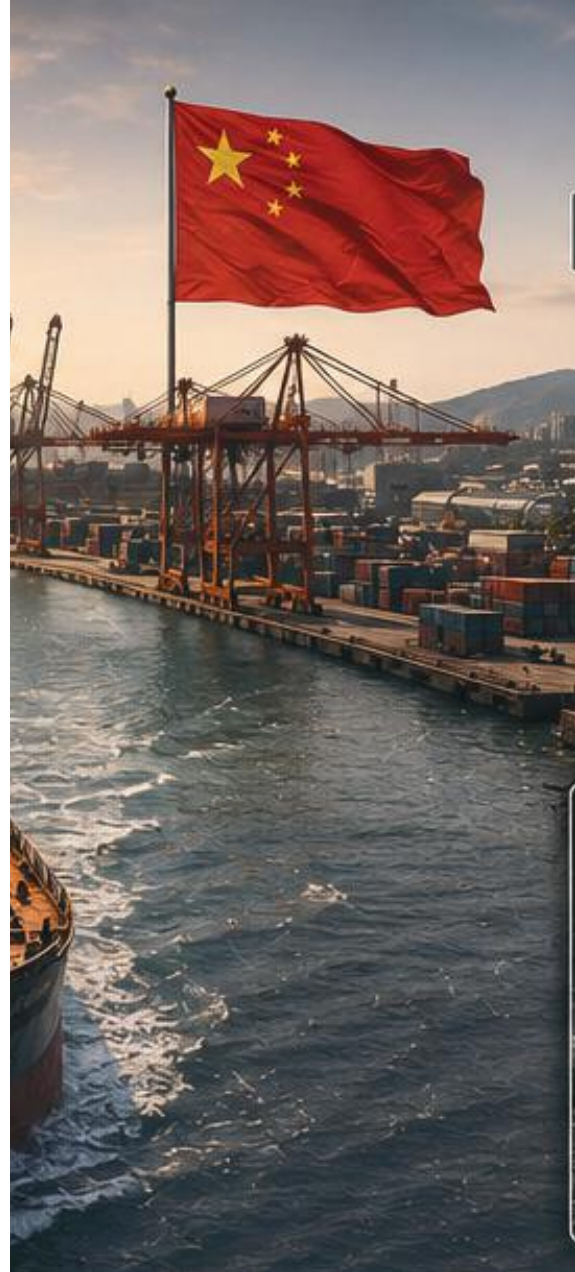
For Australia and Brazil, this is not a collapse story. It is a margin and power story. Australia remains central because of scale, proximity, infrastructure and cost. Brazil remains important, especially for higher-grade ore. The seaborne iron ore trade will not vanish because China laid out a 2030 scenario.

But the balance can move without the trade disappearing.

If Chinese steel output declines, scrap use rises, domestic concentrate expands, overseas equity ore grows and Simandou becomes a normal supplier, the pressure on exporters changes. Not overnight. Not equally. But enough to alter the commercial field.

The old iron ore order was built around China's need. The next one may be built around China's alternatives. That is the meaning of the 50% signal.

Beijing is not declaring independence from imported ore. It is trying to build the conditions to buy from a position of less dependence.



WHAT TO WATCH NEXT

Watch the cargo trail, not only policy statements. The key indicators are monthly Simandou shipments from Morebaya, the Chinese mills receiving the ore, and whether cargoes are used directly or blended. Track China's port inventories, scrap collection, electric arc furnace utilisation and domestic concentrate output.

Watch CMRG's next negotiations with BHP, Rio Tinto and Fortescue. Grade spreads also matter. If lower-grade ore faces deeper discounts while high-grade material holds value, China's diversification strategy is already changing market behaviour.



RARE EARTHS



Why Energy Fuels’ \$725m Loan Matters *for U.S. Critical Minerals Supply*

ENERGY FUELS’ \$725 MILLION CONDITIONAL U.S. GOVERNMENT LOAN MARKS A SHARPER PHASE IN AMERICA’S CRITICAL MINERALS STRATEGY. THE ISSUE IS NO LONGER SIMPLY WHETHER THE UNITED STATES CAN FIND RARE EARTH RESOURCES. IT IS WHETHER IT CAN PROCESS, SEPARATE AND UPGRADE THEM INTO MATERIALS MANUFACTURERS AND DEFENSE BUYERS CAN USE.

With White Mesa at the center of the proposal, the financing points to a wider shift: U.S. rare earth processing is becoming a matter of project finance, not just policy, but supply-chain strategy too.

WORDS BY SALINI KRISHNAN // DATA BY SKILLINGS RESEARCH

Energy Fuels’ \$725 million conditional U.S. government loan is more than a company financing update. It shows how far the critical minerals argument has moved in Washington: from supply-chain speeches into debt-backed industrial policy. If completed, the financing would support expanded U.S. rare earth processing at the White Mesa Mill in Utah and a planned rare earth metals and alloy facility. The important point is not only the size of the loan. It is where the money is aimed. And that is the signal now.

A loan aimed at the middle of the chain

The commitment announced by Energy Fuels is not a blank cheque and should not be treated as one. The company said it has received a conditional \$725 million financing commitment from the U.S. Office of Strategic Capital, structured as senior-secured debt, with a proposed 20-year tenor. The money would support expansion of critical minerals processing at White Mesa and a planned U.S. rare earth metals and alloy facility. The condi-

tions matter. Energy Fuels said the commitment remains subject to further due diligence, final agreements, customary closing conditions and approvals. In plain mining terms, this is not cash in the bank. It is a financing route, and a politically important one, if the project clears the gates.

The target is also telling. Washington is not only looking for more ore. It is trying to close the industrial gap between mined material and usable magnet inputs. The Office of Strategic Capital described Energy Fuels’ expansion as a response to a “national bottleneck.” That is the centre of the story.

For mining finance readers, the loan points to a harder truth: in critical minerals, the bankable asset is often not the deposit alone. It is the processing node that can turn a concentrate into a qualified, traceable material a defense contractor or manufacturer can actually use.

The Rare Earth Supply Chain

FROM MONAZITE TO MISSION-CRITICAL MAGNETS



Why White Mesa changes the story

White Mesa is why this announcement is more than another critical minerals promise. The Utah mill is an operating uranium-processing site, and Energy Fuels says it is the only fully licensed and operating conventional uranium mill in the United States. The company has been building rare earth capability on that platform, processing monazite into rare earth oxides and moving beyond light rare earths into pilot-scale heavy rare earth work.

That makes Energy Fuels unusual. It is not arriving as a pure rare earth explorer with a remote deposit and a long permitting road. It is a uranium and critical materials company trying to use existing industrial infrastructure to enter the rare earth supply chain. That does not remove execution risk.

It changes the starting line. The company has already reported production of neodymium-praseodymium oxide at White Mesa and, in March, said it had produced its first kilogram of terbium oxide from U.S.-sourced monazite at pilot scale. Those details matter because rare earth politics often runs ahead of processing reality. A project is only strategic if it can convert feedstock into qualified material.

The capital signal beyond Energy Fuels

The wider signal is that critical minerals financing is becoming strategic finance. Private capital has been cautious around rare earth processing because projects face

feedstock risk, technology risk, customer qualification risk and price exposure to China-dominated supply chains. A Pentagon-backed loan does not erase those risks, but it can change how lenders, offtakers and partners read them.

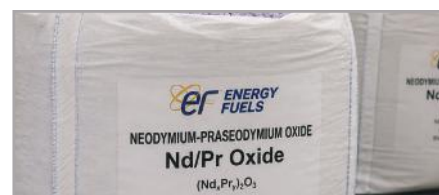
Energy Fuels' president and chief executive, Ross Bhappu, said recent events had underscored the urgency of building "durable, transparent and allied supply chains." That phrasing is important. The rare earth race is no longer only about independence. It is about allied capacity: feedstock from friendly jurisdictions, processing in the United States, and downstream metals, alloys and magnets that can serve defense, automotive, technology and industrial users.

The real bottleneck is no longer discovery. It is processing.

The timing adds weight. China's new Mineral Resources Law implementation rules took effect on June 15, with Beijing framing them around mineral resource security. G7 governments are also coordinating around critical minerals security, stockpiling, recycling and supply-chain diversification.

Energy Fuels therefore sits inside a larger policy contest. For the United States, the question is not whether

rare earths are important. That case has already been made. The harder question is whether capital can be placed fast enough to build capacity before the next supply shock. The watchpoints are clear. Does the loan close after due diligence? Can White Mesa scale without feedstock strain? Does U.S. rare earth processing move downstream into alloys and magnets? And does this commitment become a one-off, or the template for the next wave of critical minerals financing.



WHY WHITE MESA MATTERS

The White Mesa Mill is not a new rare earth mine. It is an existing Utah processing site that Energy Fuels says is the only fully licensed and operating conventional uranium mill in the United States. That gives the project a different starting point from many critical minerals proposals: infrastructure is already in place. The question is whether that platform can scale from rare earth oxide production into a wider U.S. rare earth processing chain tied to separation, metals, alloys and eventual magnet supply without losing control of cost discipline.



The High-Grade Map

*North America's iron ore revival is not about more tonnes.
It is about who controls the feedstock for low-carbon steel.*

WORDS BY PENNY LANEFORD // DATA BY SKILLINGS RESEARCH

The old iron ore map was built around scale: the Pilbara, Brazil, bulk shipping, blast furnaces and the 62% Fe benchmark. The new map is being drawn around chemistry, reliability and steelmakers' need for direct-reduction feedstock.

In 2026, three North American moves stand out: Mesabi Metallics' long-delayed Nashwauk project in Minnesota, Iron Bear's Labrador Trough magnetite optionality, and

U.S. Steel's planned DRI facility at Big River Steel Works in Arkansas. Together, they suggest a deeper shift: iron ore is moving from a bulk commodity story to a strategic industrial-control story.

For decades, North American iron ore lived in the shadow of larger, lower-cost seaborne systems. The Mesabi Range was history, the Labrador Trough was potential, and the U.S. steel supply chain was

increasingly treated as something to be optimized rather than secured. That view is now too simple. Decarbonization has changed the question steelmakers ask of ore. The issue is no longer just how much iron is in the ground. It is whether that iron can be upgraded into the kind of clean, predictable, low-impurity feedstock needed for direct reduction and electric arc furnace steelmaking.

That is the heart of the revival. It is not a return to the old iron ore boom. It is not a nostalgia story about the Iron Range. It is a re-pricing of quality. Wood Mackenzie has argued that the transition toward green steel puts suppliers of high-grade, low-impurity ores “in pole position,” with buyers moving from quantity to quality as blast-furnace demand weakens and low-carbon feedstock demand rises.

The firm also expects high-quality lump and pellet constraints to support wider premiums over time. The three hubs now shaping the North American picture are not at the same stage. Mesabi is the near-term merchant-pellet bet. Iron Bear is the long reserve-and-infrastructure bet. Big River is the steelmaker-integration bet.

The common thread is control. Mines, pellet plants, rail routes, DRI plants and EAFs are being pulled into tighter industrial systems because low-carbon steel cannot run on vague supply promises.

Nashwauk returns to the map
The most immediate test is in Nashwauk, Minnesota, where Mesabi Metallica is trying to turn one of the Iron Range’s longest-running industrial sagas into a working DR-grade pellet supply source. The base article frames the project as a strategic inflection point for the Mesabi Range, and that framing holds. Mesabi says its DR-grade iron ore mine, beneficiation plant and pellet plant are expected to commence production in the



third quarter of 2026. The company also describes the project as a roughly \$2.5 billion development and says it will be one of the only significant domestic producers of merchant DR-grade pellets in North America.

The financial structure around Mesabi matters because it shows how the market is starting to value the product, not only the orebody. The Metals Royalty Company entered a \$132.5 million royalty acquisition tied to production from Mesabi, with the royalty covering output up to 8.5 million tonnes per year and indexed to Platts Direct Reduction Pellet 67.5% Fe FOB Brazil, with a \$150-per-tonne revenue floor.

That is not ordinary iron ore financing. It is a bet on DR-grade pellet scarcity and premium pricing. Mesabi’s strategic appeal is simple: it sits inside the U.S. industrial geography it is meant to serve. If it performs, it gives domestic EAF steelmakers an American merchant source of DR-grade pellets at a time when imported high-grade feedstock still matters. If it stumbles, the signal is just as important: North America may want low-carbon steel independence faster than its mine-and-pellet infrastructure can deliver it.

Labrador’s bigger, slower bet
If Mesabi is the near-term supply story, Labrador is the scale story. Iron Bear Resources describes Iron Bear as a magnetite iron ore project northwest of Schefferville, close to the Newfoundland and Labrador-Quebec border. The project sits within the Labrador Trough, a region that has supported iron ore mining since 1954 and already hosts producers including Rio Tinto’s IOC, ArcelorMittal, Champion Iron, Tecora and Tata

THE THREE-HUB LOGIC

HUB	WHAT IS REALLY BEING BUILT	2026 PROOF POINT	STRATEGIC CONSEQUENCE	EDITORIAL CAVEAT
Nashwauk / Mesabi Metallica	Merchant DR-grade pellet supply inside the U.S. steel belt	Q3 2026 production target; royalty indexed to 67.5% Fe DR pellet pricing	Domestic buyers get a potential alternative to imported DR-grade feedstock	Execution risk remains until consistent pellets are produced
Labrador Trough / Iron Bear	A long-life magnetite platform with railway and port proximity	16.6 Bt resource; 71% Fe pilot concentrate; Vale phased funding path	North America gains a large high-grade development option	It is still a development project, not a producing hub
Keetac-Big River corridor	Mine-to-pellet-to-DRI-to-EAF integration	U.S. Steel announced a \$1.9B DRI facility at Big River Steel Works	Steelmakers begin internalizing premium feedstock	The DRI plant is a 2026 commitment, not a finished asset

Steel. The attraction is not only geology. Iron Bear says the property is within 25 km of open-access heavy-haul rail connected to Sept-Îles and Pointe-Noire export ports, with potential access to low-cost hydro-power from Menihek. The base article's language around Iron Bear is dramatic, but the underlying thesis is legitimate if handled carefully.

Iron Bear is not yet a producing mine. It is a development-stage magnetite project with scale, infrastructure proximity and strategic relevance to DR-grade supply. The company lists a mineral resource of 16.6 billion tonnes at 29.3% total Fe and says pilot-plant work has produced high-quality magnetite concentrate grading 71.0% Fe and 1.2% SiO₂.

The Vale angle needs precision. Major Mines & Projects reports that Iron Bear remains fully owned by Cyclone Metals through Iron Block 103 Corporation, and that Vale's initial Phase 1 funding does not grant ownership. If Vale proceeds to Phase 2, a joint venture would be formed, with Vale's interest rising as it funds studies and de-risking work.

That is not the same as a completed takeover; it is a staged pathway to control if the project advances. What makes Labrador important is time. The steel transition will not be supplied by one plant in Minnesota or one DRI facility in Arkansas. It will require decades of high-grade feedstock. Iron Bear's production target, according to Major Mines & Projects, includes 25 million tonnes per year: 16 Mtpa of blast-furnace magnetite concentrate and 9 Mtpa of DR pellets. If those numbers survive feasibility, financing and permitting, Labrador

becomes not a regional deposit but a supply-chain lever.

Arkansas changes the customer side

The third hub is not a mine. It is the customer becoming the processor. In April 2026, U.S. Steel announced a \$1.9 billion investment to build a direct reduced iron facility at Big River Steel Works in Osceola, Arkansas. The company said the facility would use its 2022 investment in direct-reduced-grade pellet capabilities at Minnesota Ore Operations' Keetac plant, creating a link from mining operations to EAF feedstock creation and steel production at Big River.

The next iron ore boom will be measured in chemistry, not tonnage.

This is the most important strategic signal in the story. A steelmaker is not waiting for the merchant market to solve the feedstock problem. It is building a corridor. Keetac supplies the upgraded pellet capability. Big River supplies the EAF platform. The planned DRI facility sits between them, converting ore value into metallics value before the market can take its margin.

U.S. Steel says Big River 2 is now in full production and that the Big River campus has four EAFs. By locating DRI production at the same site, the company says it can avoid shipping

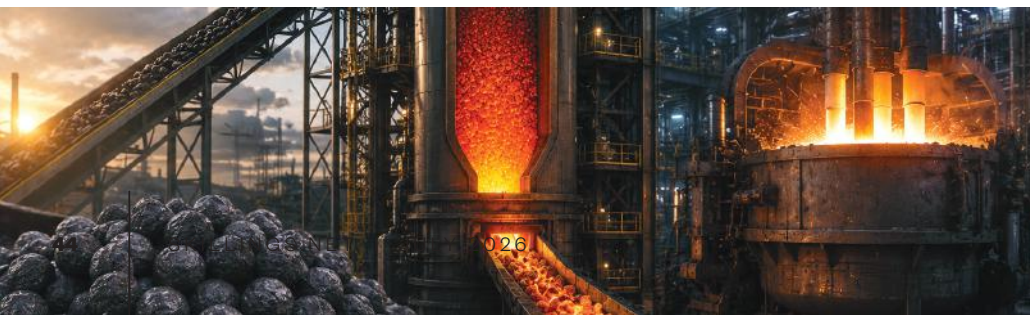


WHY DR-GRADE ORE IS DIFFERENT

DR-grade iron ore is not simply better-looking taconite. It is feedstock engineered for direct reduction, where oxygen is removed from iron ore without the coke-heavy blast furnace route. That matters because electric arc furnaces can use DRI or HBI alongside scrap to make steel with lower emissions and tighter chemistry.

The catch is quality. Shaft-furnace DRI generally needs high iron content, low gangue, predictable pellet behavior and reliable logistics. Ordinary ore can still make steel; it just does not easily make the kind of low-carbon, high-spec steel automakers, infrastructure buyers and defense supply chains increasingly want. That is why pellet plants, beneficiation circuits and mine-to-mill contracts now carry strategic value in a market moving from bulk supply toward engineered inputs.

DRI to the facility and create a sourcing advantage for feedstock. This is vertical integration, but not in the old Carnegie sense of owning everything for empire. It is integration for chemistry, emissions, quality control and customer specification. That matters for competitors. Every tonne of DR-grade pellet that is locked into a captive DRI system is a tonne not easily available to the merchant



market. In a loose market, that would be a footnote. In a tightening high-grade market, it becomes a strategic move. Other EAF steelmakers will have to decide whether to secure pellet supply, contract for HBI, partner with miners, or accept exposure to a premium market they do not control.

The bottleneck is quality

The market has spent years talking about green steel as if the limiting factor were only hydrogen or renewable power. Those are real constraints, but they are not the only ones. The iron unit itself is becoming a bottleneck. Wood Mackenzie expects EAFs to rise from 28% of global steel production to almost 50% by 2050 in its base-case scenario, requiring at least 550 million tonnes of new EAF capacity. It also expects DRI's share of metallics demand to rise, with future supply increasingly traded across borders.

That is why North America's position matters. The region does not have to beat Australia or Brazil on bulk scale to become strategically important. It has to deliver reliable, low-impurity, high-grade feedstock into steel systems that value security and carbon performance. Mesabi gives the U.S. a possible merchant DR-pellet source. Labrador gives Canada a long-duration magnetite platform. Big River shows how steelmakers may pull the chain inward. There are risks everywhere.

Mesabi must prove stable production after years of delay. Iron Bear must move from resource scale to bankable development. Big River's DRI facility still has to be built. Policy support can accelerate projects, but it cannot repeal metallurgy, construction timelines or capital discipline. This is why the "revival" should not be written as victory. It should be written as a race.

The supply map after 2026

The most likely outcome is not one dominant North American hub. It is a network. Minnesota supplies upgraded pellets. Labrador competes for long-duration high-grade development capital. Arkansas demonstrates the steelmaker's desire to internalize the chain. Around them, financing structures, royalty deals, rail access, hydropower, carbon rules and offtake contracts begin to matter as much as mine plans.

This is the real North American iron ore revival. Not a return to the age when ore moved anonymously from pit to furnace, priced mainly by grade and freight. The new map is narrower, more technical and more strategic. It rewards projects that can prove chemistry, build processing depth and connect directly to steel demand. The winners will not simply be miners. They will be feedstock engineers, logistics owners and steelmakers that understand that the low-carbon steel race begins before the furnace.

2025 GLOBAL CRUDE STEEL PRODUCTION TOTALS

Total world crude steel production was 1,849.4 Mt in 2025.

Rank	Country	2024	2023	%2024/ 2023
1	China	960.8	1005.1	-4.4
2	India	164.9	149.4	10.4
3	United States	82.0	79.5	3.1
4	Japan	80.7	84.0	-4.0
5	Russia (e)	67.8	71.0	-4.5
6	South Korea	61.9	63.6	-2.8
7	Türkiye	38.1	36.9	3.3
8	Germany	34.1	37.3	-8.6
9	Brazil	33.3	33.9	-1.6
10	Iran (e)	31.8	31.4	1.4
11	Viet Nam	24.7	22.0	12.2
12	Italy	20.7	20.0	3.6
13	Indonesia (e)	19.0	18.6	1.9
14	Taiwan, China (e)	17.1	19.2	-10.8
15	Mexico (e)	13.5	14.3	-5.9

Rank	Country	2024	2023	%2024/ 2023
16	Spain (e)	12.0	11.9	0.7
17	Canada (e)	11.5	12.3	-7.2
18	Saudi Arabia	10.8	9.6	12.3
19	Egypt	10.6	10.7	-0.8
20	France (e)	9.8	10.8	-8.7
21	Malaysia (e)	9.0	9.0	-0.2
22	Austria	7.6	7.1	5.9
23	Ukraine	7.4	7.6	-2.2
24	Poland (e)	7.2	7.1	0.8
25	Belgium (e)	7.2	7.1	0.5
26	Netherlands	6.5	6.4	1.4
27	Algeria (e)	5.3	4.5	17.9
28	Australia	5.2	4.7	12.1
29	Thailand (e)	5.0	4.9	2.6
30	Bangladesh (e)	4.5	4.5	0.0

Rank	Country	2024	2023	%2024/ 2023
31	South Africa	4.5	4.7	-4.7
32	Kazakhstan	4.3	4.2	2.2
33	Argentina	4.0	3.9	4.2
34	Sweden	4.0	4.0	-0.7
35	United Arab Emirates	3.8	3.7	3.3
36	Finland	3.7	3.7	2.1
37	Slovakia (e)	3.7	3.9	-5.6
38	Pakistan (e)	3.6	4.1	-12.2
39	Iraq (e)	3.0	3.0	0.3
40	Oman (e)	3.0	3.0	0.0
	Others	41.8	44.1	-5.3
	World	1849.4	1886.8	-2.0

e – annual figure estimated using partial data or non-worldsteel resources. * The world total production figure in this table includes estimates of other countries that only report annually.

Source – World Steel Association. 2025 Steel Statistical Yearbook published

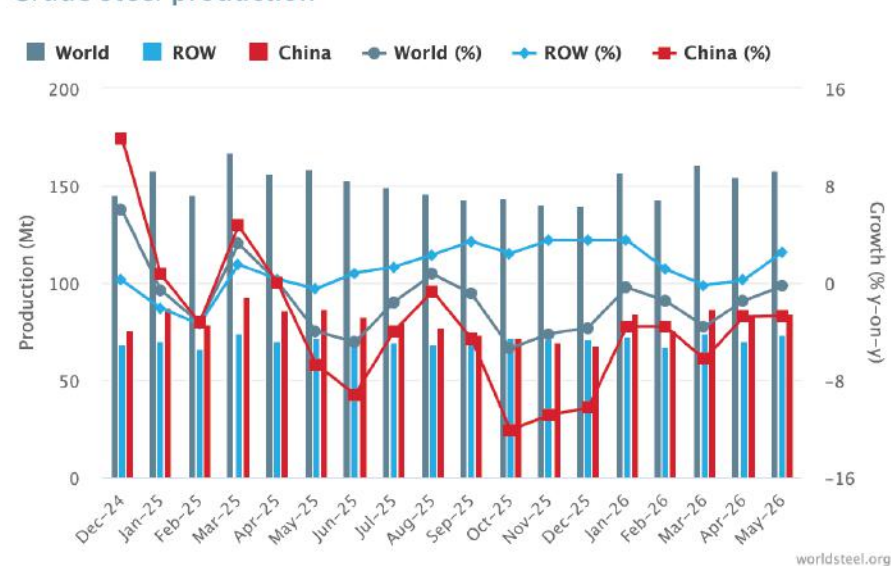
MAY 2026 CRUDE STEEL PRODUCTION

World crude steel production for the 70 countries reporting to the World Steel Association (worldsteel) was 157.9 million tonnes (Mt) in May 2026, a 0.3% decrease compared to May 2025.

Africa produced 2.1 Mt in May 2026, up 10.3% on May 2025. Asia and Oceania produced 116.2 Mt, down 0.9%. The EU (27) produced 11.4 Mt, down 0.4%. Europe, Other produced 3.8 Mt, up 4.9%. The Middle East produced 3.9 Mt, down 19.4%. North America produced 10.1 Mt, up 15.6%. Russia & other CIS + Ukraine produced 6.7 Mt, down 4.8%. South America produced 3.5 Mt, up 3.7%.

The 70 countries included in this table accounted for approximately 98% of total world crude steel production in 2025. Regions covered by the table: Africa, Asia and Oceania, European Union (27), Europe, other, Middle East, North America, Russia & other CIS + Ukraine, South America.

Crude steel production



TOP 10 STEEL-PRODUCING COUNTRIES

China produced 84.4 Mt in May 2026, down 2.7% on May 2025. India produced 14.1 Mt, up 1.9%. The United States produced 7.5 Mt, up 9.2%. Japan produced 7.0 Mt, up 1.7%.

South Korea produced 5.4 Mt, up 3.3%. Russia is estimated to have produced 5.6 Mt, down 5.4%. Türkiye produced 3.4 Mt, up 8.9%. Germany produced 3.2 Mt, up 7.3%. Brazil produced 2.8 Mt, up 2.4%. Viet Nam produced 2.6 Mt, up 27.2%.

TABLE 1. CRUDE STEEL PRODUCTION BY REGION

	MAY 2026(MT)	% CHANGE MAY 26/25	JAN-MAY 2026 (MT)	% CHANGE JAN-MAY 26/25
Africa	2.1	10.3	10.5	8.2
Asia and Oceania	116.2	-0.9	574.4	-1.5
EU (27)	11.4	-0.4	54.4	-1.5
Europe, Other	3.8	4.9	18.4	4.6
Middle East	3.9	-19.4	19.9	-14.6
North America	10.1	15.6	47.0	5.9
Russia & other CIS + Ukraine	6.7	-4.8	31.6	-9.6
South America	3.5	3.7	17.0	-0.7
Total 70 countries	157.9	-0.3	773.1	-1.5

TABLE 2. TOP 10 STEEL-PRODUCING COUNTRIES

	MAY 2026 (MT)	% CHANGE MAY 26/25	JAN-MAY 26 (MT)	% CHANGE JAN-MAY 26/25
China	84.4	-2.7	415.5	-3.9
India	14.1	1.9	72.9	7.8
United States	7.5	9.2	35.6	6.8
Japan	7.0	1.7	33.6	-0.7
South Korea	5.4	3.3	26.4	2.7
Russia (e)	5.6	-5.4	26.4	-10.0
Türkiye	3.4	8.9	16.5	6.8
Germany	3.2	7.3	15.7	8.8
Brazil	2.8	2.4	13.4	-1.9
Viet Nam	2.6	27.2	12.6	26.8

The 70 countries included in this table accounted for approximately 98% of total world crude steel production in 2025. :Africa: Egypt, Libya, South Africa, Tunisia Asia and Oceania: Australia, China, India, Japan, Mongolia, New Zealand, Pakistan, South Korea, Taiwan (China), Thailand, Viet Nam, European Union (27), Europe, Other: Macedonia, Norway, Serbia, Türkiye, United Kingdom, Middle East: Iran, Qatar, Saudi Arabia, United Arab Emirates, North America: Canada, Cuba, El Salvador, Guatemala, Mexico, United States, Russia & other CIS + Ukraine: Belarus, Kazakhstan, Russia, Ukraine, South America: Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela



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