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Dr. Daniel Covarrubias, director of the Texas Center for Border Economic and Enterprise Development.
(Photo courtesy: TAMIU)

Posted Monday, February 9, 2026 5:51 am

“ From a USMCA
2.0 perspective,

By Dr. Daniel Covarrubias



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critical minerals constitute a sector in which the trilateral framework can generate a genuine competitive advantage."

DANIEL COVARRUBIAS,
DIRECTOR, TEXAS CENTER
FOR BORDER ECONOMIC AND
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The Periodic Table of Power: Why the U.S.-Mexico Critical Minerals Deal Could Really Be a Technology Sovereignty Play

Fifty-four countries showed up. The United States proposed a global trading bloc. The European Union, Japan, and a growing coalition of nations signed cooperation frameworks for critical minerals. But the most consequential development from the February 4 Critical Minerals Ministerial was also the most understated: a one-page bilateral action plan between the United States and Mexico that, if executed, would embed the physical substrate of every exponential technology into the USMCA framework.

The plan gives both countries 60 days to develop coordinated trade policies, price floors, and joint investment frameworks for the minerals that power AI chips, electric vehicle batteries,

semiconductor fabrication equipment, and advanced defense systems. On its face, it appears to be a mining agreement. It is not. It is a technology sovereignty play wrapped inside a trade negotiation. And how Mexico responds over the next two months will determine whether North America builds the physical foundation for its next technological era, or whether this becomes another nearshoring moment: enormous in promise, underwhelming in execution.

What the Action Plan Actually Says

The official text is one page. Its scope is not. The U.S. and Mexico will identify specific critical minerals of mutual interest, explore border-adjusted price floors for imports, and consult on embedding those mechanisms into a binding plurilateral agreement open to other allied nations. The plan extends to regulatory standards for mining and processing, geological mapping coordination between the U.S. Geological Survey and the Mexican Geological Service, coordinated stockpiling, investment screening, and joint rapid-response protocols for supply-chain disruptions.

Both governments framed this explicitly in the context of the USMCA Joint Review, due by July 1. The language from both sides treats critical minerals not as a side conversation but as a structural pillar of the North American trade relationship going forward, with Ebrard positioning mineral security as inseparable from industrial competitiveness and national strategy.

The timing reinforces that reading. Two days earlier, President Trump signed an executive order establishing Project Vault, a \$12 billion critical-mineral stockpile structured as a public-private partnership, with initial participation from Boeing, GE Vernova, Western Digital, and Clarios. China's restriction of rare-earth exports during the 2025 trade war demonstrated the very vulnerability this architecture is designed to address. As the USMCA review is underway, critical minerals could become part of the trilateral trade framework itself rather than an ancillary arrangement.

Mexico's Mineral Endowment: What Exists and What Matters

A technology sovereignty strategy requires actual geology. Mexico has it, though the picture is more complex than headlines suggest.

Mexico ranks among the top ten countries globally in copper reserves, commonly placed around 7th, with approximately 53 million metric tons. Copper is used in nearly every clean energy technology, including solar panels, wind turbines, electric vehicle motors, battery storage systems, and the entire electricity grid infrastructure that connects them. Chile, Peru, and Mexico together account for roughly one-third of global copper production. Mexico is also the world's largest silver producer, and silver appears on the USGS 2025 Critical Minerals List for the first time, recognized for its essential role in electronics, solar photovoltaic cells, and advanced conductors.

Beyond copper and silver, Mexico ranks fifth globally in molybdenum production, a mineral critical for high-strength steel alloys used in aerospace, defense, and energy infrastructure. It holds significant graphite resources and production capacity, and graphite is the dominant material in lithium-ion battery anodes. Mexico has an estimated 1.7 million tonnes of lithium resources spread across 82 known deposits in 18 states, with the largest concentrations in Sonora, Puebla, and Oaxaca. PEMEX has reported lithium concentrations in oilfield brines across several states and is evaluating extraction technologies, though commercial viability remains at an early stage.

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The U.S. updated its Critical Minerals List in November 2025. It now includes 60 minerals. Mexico produces or has significant reserves of at least a dozen of them, including copper, silver, lithium, graphite, molybdenum, zinc, manganese, fluorspar, bismuth, antimony, barite, and lead. This is not a single-commodity story. Mexico's geological endowment spans multiple critical mineral categories, making it a diversified partner rather than a single-resource dependency.

The Technology Stack Nobody Is Talking About

Most of the commentary on this deal has focused on geopolitics: countering China, securing defense supply chains, and building Western solidarity. That analysis is accurate but incomplete. Critical minerals are the physical substrate of every exponential technology curve currently reshaping the global economy, and treating them as strategic commodities alone misses the larger picture.

Consider the dependency chain. Semiconductors depend on silicon and increasingly on gallium and germanium, with rare earth elements critical in the manufacturing equipment ecosystem. AI infrastructure runs on data centers where servers consume large quantities of copper, use silver in circuit boards and connectors, and embed rare earths in storage and cooling systems. Leading quantum computing architectures rely on niobium and tantalum for superconducting circuits. Advanced robotics and autonomous systems use neodymium and dysprosium permanent magnets across high-performance motors. 5G and 6G telecommunications infrastructure depends on copper for cabling and power distribution, gallium compounds for RF amplifiers, and lithium for backup energy storage across the network stack. Space technology and advanced defense systems rely on titanium for airframes, cobalt for superalloys in turbine engines, and platinum-group metals in catalysts and sensors. Batteries across devices, vehicles, and grid storage systems use varying combinations of lithium, cobalt, nickel, graphite, and manganese, depending on the chemistry.

The country or region that controls critical mineral supply chains determines who participates in the next generation of technological development. This is what makes the U.S.-Mexico action plan fundamentally different from a trade deal about rocks. It is an infrastructure play for the AI, quantum, and clean energy eras simultaneously.

From a USMCA 2.0 perspective, critical minerals constitute a sector in which the trilateral framework can generate a genuine competitive advantage. The agreement already covers automotive rules of origin, digital trade provisions, and labor standards. Adding a critical minerals chapter, with shared processing standards, coordinated investment incentives, and joint stockpiling protocols, would create a North American technology supply chain that no other regional trading bloc can match. The raw materials are here. The manufacturing base is here. The question is whether the institutional architecture will connect them.

The Sovereignty Question: Mexico's Crossroads



Here is where the opportunity meets friction. Mexico's mining regulatory environment has been in flux since 2022, when the Lopez Obrador administration nationalized lithium, making exploration, exploitation, and use of the mineral exclusive to the Mexican state. The 2023 Mining Law reform introduced shorter concession terms, stricter environmental and water requirements, community benefit-sharing obligations, and new grounds for concession cancellation, which the mining industry has described as generating legal and regulatory uncertainty.

Under President Sheinbaum, the signals have been mixed but generally more encouraging. The administration reconsidered the proposed ban on open-pit mining after recognizing it would paralyze sand extraction for construction and lithium mining for the energy transition. Economy Minister Ebrard has consistently framed mineral access as a national security priority, and senior officials have signaled the government's intent to resume large-scale exploration in 2026. The Mexican Geological Service received a modest budget increase for lithium-specific work, and PEMEX is evaluating lithium extraction pathways from oilfield brines in several states.



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But the structural challenges remain real. The regulations needed to implement the 2023 Mining Law reform have not been published. For lithium and other strategic minerals, exploration authority has been centralized within state entities, with the Mexican Geological Service given a leading role; however, it lacks the resources to match the scale of private-sector investment it displaced. Mining concessions have been frozen since 2018, and Sheinbaum has confirmed the moratorium will continue. Exploration investment fell from \$543 million in 2023 to an estimated \$400 million in 2025, which CAMIMEX warns would represent a decade low. LitoMX, the state entity created to develop lithium, operates on a budget in the low six figures in U.S. dollar terms, with only a handful of permanent staff, enough to cover salaries and administration but not serious exploration.

This is the tension at the heart of the deal. The Action Plan calls for investment promotion, screening, and identification of projects that comply with internationally recognized responsible business conduct standards. That language assumes a regulatory environment that attracts private capital at scale. Mexico's current framework, despite its promising rhetorical direction, has not yet delivered that environment.

The Nearshoring Parallel

For those of us who have tracked North American trade integration for years, this moment carries a familiar feeling. The nearshoring narrative, which accelerated after 2020, promised a fundamental restructuring of global supply chains toward Mexico. There was real movement: FDI reached record levels, with annual inflows climbing to nearly \$41 billion by 2025, and goods exports grew at high-single-digit rates annually. But a persistent gap remained between announced nearshoring projects and the pace and sectoral composition of executed investment. The narrative preceded institutional delivery.

Critical minerals could follow the same trajectory. The geological endowment exists. The geopolitical incentive is overwhelming. The trade architecture, through USMCA, provides a ready-made framework for integration. But none of that matters if the regulatory environment discourages the private investment needed to build mines, processing facilities, and refining capacity. S&P Global data indicate that mines that began production between 2020 and 2023 averaged nearly 18 years from discovery to first production. Mexico does not have 18 years. The 60-day action plan window, while obviously not meant to resolve these structural issues, signals the urgency of the moment.

Four Requirements for Success

The data points are in different directions, and it would be irresponsible to predict outcomes. But the conditions for success are identifiable.

First, the USMCA Joint Review should incorporate critical minerals into the trilateral framework, not as an appendix but as a substantive chapter, with rules of origin, processing standards, and investment facilitation mechanisms comparable to those for automotive and digital trade. This would give the critical minerals sector the same institutional weight that transformed North American automotive manufacturing over three decades.

Second, Mexico would need to publish the implementing regulations for the 2023 Mining Law reform and establish a concession framework that balances environmental and community protections with the investment certainty required by mining capital. Ebrard's rhetoric has been right. The regulatory architecture needs to match it.

Third, the focus should extend beyond extraction. The real value in critical minerals is not in digging them out of the ground. It is in processing, refining, and integrating them into manufactured goods. China dominates not because it has the most minerals, but because it built the processing infrastructure that converts raw material into technological capability. North America's critical minerals strategy will succeed or fail based on whether it builds that processing capacity on this continent.

Fourth, the technological research component of the Action Plan deserves serious attention. Joint R&D between U.S. and Mexican institutions on extraction technologies, recycling processes, and alternative materials could accelerate timelines and reduce environmental impacts simultaneously. This is where universities, national laboratories, and the private sector intersect, and where frameworks such as NADICI (the North American Digital Integration and Competitiveness Initiative) provide the connective tissue between cross-border research collaboration and industrial application.

The Stakes

China mines 60% of the world's rare earths and processes 90%. During the 2025 trade war, Beijing demonstrated its willingness to weaponize that dominance. The October 2025 truce included a one-year reprieve on export curbs, but restrictions remain tighter than before. Every month that passes without alternative supply chains is another month of strategic vulnerability.

North America has the geology, the trade architecture, and now, as of February 4, the bilateral framework to build something different. Mexico sits at the center of that possibility. Not as a commodity exporter shipping raw materials north, but as an integrated partner in a technology supply chain that stretches from mine to semiconductor fab to data center.

Whether that possibility becomes reality depends on what happens in the next 60 days and in the years that follow. The minerals are in the ground. The question is whether the institutions, regulations, and investment frameworks will rise to meet the challenge. North America has been here before. The outcome is not predetermined. But the clock started on February 4.

Editor's Note: The above commentary was penned by Daniel Covarrubias, Ph.D., director of the Texas Center for Border Economic and Enterprise Development at Texas A&M International University's A.R. Sanchez, Jr. School of Business. Covarrubias specializes in cross-border trade, logistics, and the convergence of exponential technologies with North American economic integration. He is the architect of the USMCA 2.0, Binational Customs Agency (BCA), and NADICI policy frameworks.

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