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## Securing the AI Era: Critical Minerals, Latino Communities, and U.S. Resilience

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### Executive Summary

Hardware for AI and clean energy runs on minerals. Chips, batteries, motors, and power electronics depend on lithium, nickel, cobalt, graphite, copper, and rare earths. These materials govern compute capacity, energy storage, and industrial production. They determine who sets the pace of artificial intelligence. China commands the midstream. It processes approximately 60 percent of the world's cobalt and lithium and over 90 percent of graphite, giving Beijing leverage over U.S. data-center buildouts, electric fleets, and advanced manufacturing.<sup>[i]</sup>

The Americas hold the alternative. Latin America controls some of the world's richest copper and lithium reserves, and Latino workers in the United States anchor extraction, construction, and processing.<sup>[ii]</sup> They will operate the refineries, magnets, cathode plants, and recycling systems that define industrial power in the AI decade.<sup>[iii]</sup> Yet communities from Arizona to the Andes carry the environmental and social burden without guaranteed benefits or voice.

This brief lays out a five-move strategy to fix that imbalance: build U.S. midstream capacity, lock in a Western Hemisphere compact, institutionalize labor and rights protections, scale recycling and unconventional feedstocks, and center affected communities in every project. The goal is direct. Cut single-country exposure, secure the minerals that run defense and data, and ensure the people who bear the costs share in the gains. U.S. leadership in the AI era will rest on whether it executes this strategy at speed and with integrity.<sup>[iv]</sup>

### Background

Hardware defines the limits of AI power. Lithium, nickel, cobalt, and graphite form high-density cells that drive vehicles and data centers. Neodymium, praseodymium, dysprosium, and terbium create the permanent magnets behind actuators and precision motors. Copper carries the current that turns computation into capability. Shortages halt production. The midstream—the refining and processing chain that converts ore into usable inputs—is overwhelmingly controlled by China.<sup>[v]</sup>

In 2024, China accounted for roughly 85 percent of global battery cell capacity by value and 74 percent of battery pack and component exports. China also processes approximately 60 percent of the world's cobalt and lithium and over 90 percent of its graphite.<sup>[vi]</sup> Between 2020 and 2024, the concentration increased, with the top three refining nations' market share rising from 82 percent to 86 percent, as China alone supplied roughly 90 percent of supply growth for cobalt, graphite, and rare earths. These concentrations shape the pace and cost of AI deployment in the United States.<sup>[vii]</sup>

### The Hemisphere We Need

Any viable diversification strategy begins in Latin America. The region holds roughly 40 percent of global copper reserves and 35 percent of lithium supply.<sup>[viii]</sup> Chile and Peru dominate copper output, while Argentina and Chile

lead in lithium brines. Producers across the region aim not only to export ore but to capture more value through refining, processing, and component manufacturing. The United States should back this shift with investment, technology transfer, and enforceable standards that align with local expectations of transparency and community benefit.<sup>[ix]</sup>

## **China's Leverage, Built Over Two Decades**

Beijing followed a clear sequence. Acquire stakes upstream. Build transport and energy infrastructure around those mines. Consolidate refining and component manufacturing at home. Chinese firms now control major copper assets at Las Bambas and Toromochu in Peru.<sup>[x]</sup> Since 2016, recurring road blockades and protests at Las Bambas alone have halted nearly 600 days of output, showing that social stability is a core operational variable, not a peripheral risk. In batteries, China dominates the processing chain: exporting the bulk of refined minerals and components, producing about 79 percent of global natural graphite in 2024, and processing over 90 percent of total supply. Between 2023 and 2025, it moved to reinforce that control by imposing export restrictions on key materials, including gallium, germanium, antimony, and rare earth elements.<sup>[xi]</sup>

## **Problem Analysis**

Both ends of this supply chain lean on Latino labor, yet the public record captures only part of that reality. The U.S. mining sector employs approximately 192,000 workers, and roughly 19 percent of mining machine operators identify as Hispanic or Latino, which places an estimated 35,000 to 40,000 Latino workers in core extraction and processing roles.<sup>[xii]</sup> Latinos also account for a rising share of clean energy employment. In 2023, they filled 31 percent of new energy sector jobs—79,000 workers—and existing surveys show Latino participation at approximately 18 percent across the clean energy workforce, with solar industry estimates reaching 23 percent. These workers already build, install, and maintain the infrastructure that supports batteries, data centers, and electrified transportation.<sup>[xiii]</sup>

However, there is almost no public data on Latino-owned firms in critical mineral refining, battery recycling, or clean energy manufacturing. Government and industry reporting highlights labor participation but does not track ownership, leadership roles, or participation in midstream processing, which limits visibility into where opportunities or barriers exist in the most valuable parts of the supply chain.<sup>[xiv]</sup> Latino workers form a significant share of the labor base for mineral extraction and the energy transition, but without intentional tracking and targeted support for Latino enterprises in processing and manufacturing, the United States will continue to rely on Latino labor without enabling Latino leadership in the industries that define industrial power in the AI era.

Across Latin America, indigenous and rural Latino communities live alongside mining's consequences. In the Atacama in Chile, lithium brine extraction competes with local water use. In the Peruvian Andes, copper transport generates dust, congestion, and safety hazards. Where communities see no share of benefits, they block operations; where they do, they defend them. Peru's copper corridor and Chile's lithium policy illustrate this reality. Projects that consult early, share revenue transparently, and monitor water jointly stay open. Those that do not face lawsuits, blockades, and eventual closure.<sup>[xv]</sup>

## **What Washington Has Done**

Congress and the executive branch during the Biden Administration began to move from rhetoric to industrial action. The Bipartisan Infrastructure Law directed nearly \$7 billion to reinforce the U.S. battery supply chain, funding domestic production, processing, and recycling of critical minerals to reduce dependence on foreign extraction.<sup>[xvi]</sup> The Inflation Reduction Act expanded the Department of Energy's (DOE) lending authority to over \$400 billion, which the Loan Programs Office is deploying through large-scale industrial loans aimed at midstream capacity.<sup>[xvii]</sup> The clean vehicle credit would have tied eligibility to materials sourced from the United

States or free-trade partners. In 2024, the administration had confirmed that Chilean lithium qualifies, signaling a hemispheric "friend-shoring" framework that aligns U.S. industrial incentives with allied mineral producers.<sup>[xxviii]</sup>

At the same time, Congress has started to integrate the mineral supply chain into a broader framework of strategic competition. The James M. Inhofe National Defense Authorization Act for FY 2023 mandates detailed reporting on Chinese and Russian activities in Latin America and their global port infrastructure investments. The Western Hemisphere Nearshoring Act (H.R. 722) aims to shift production from the People's Republic of China to Latin America, pairing economic incentives with regional resilience.<sup>[xxix]</sup> Future legislation is expected to build on these foundations by increasing capital for the Inter-American Development Bank and tightening the link between energy security, hemispheric partnership, and U.S. industrial competitiveness.<sup>[xx]</sup>

Defense authorities have stepped in to close the rare earth gap. Using the Defense Production Act, the Department of Defense has funded key projects to rebuild domestic separation capacity. Since 2020, DoD has awarded over \$439 million to companies like MP Materials, Lynas USA, and Noveon Magnetics for building rare earth separation and permanent magnet manufacturing capabilities.<sup>[xxxi]</sup> In July 2025, DoD announced a landmark public-private partnership with MP Materials that includes a \$400 million equity investment making DoD the largest shareholder, a \$150 million loan for heavy rare earth separation expansion, a ten-year price floor guarantee of \$110 per kilogram for neodymium-praseodymium products, and commitments to purchase 100 percent of magnet production from the planned 10X Facility.<sup>[xxxii]</sup> This facility is expected to begin commissioning in 2028 and will scale annual U.S. rare earth magnet manufacturing capacity from 1,000 metric tons in 2025 to 10,000 metric tons over the next decade.<sup>[xxxiii]</sup> These initiatives mark the first serious attempt to reclaim industrial ground ceded to China, though progress remains challenged by costs, permitting delays, and technical hurdles.<sup>[xxxiv]</sup>

Diplomatic alignment is beginning to match industrial action. The Minerals Security Partnership now brings allied nations together to coordinate financing, traceability rules, and environmental standards across the supply chain from extraction to finished components.<sup>[xxxv]</sup> This architecture is not symbolic. It is creating the conditions for capital to move into projects that refine minerals, manufacture components, and recycle materials outside China's control. As these projects take shape, they will locate where reserves, labor, and infrastructure already exist. That points directly to the Western Hemisphere. Countries such as Chile, Argentina, Mexico, Peru, and the United States stand to replace raw mineral exports with local refining, cathode and anode plants, and magnet production. Latino communities are positioned at the center of this shift. They occupy the mining regions that supply these minerals and the labor markets that will staff the new refineries, battery facilities, and recycling centers. If the Partnership succeeds, it will not only reduce single-country exposure for the United States. It will also determine whether Latino workers and communities share in the value created by the industries that power AI and clean energy rather than remaining extraction sites that watch prosperity leave on freight trucks.<sup>[xxxvi]</sup>

## Map What We Have

Permitting remains one of the weakest links in U.S. mineral policy. The system is slow, fractured, and prone to litigation, and the statute that governs it, the General Mining Act of 1872, still allows companies to extract publicly owned minerals without paying federal royalties or meeting modern standards for consultation, reclamation, or community input.<sup>[xxxvii]</sup> That framework invites speculation, delays investment, and stretches project timelines well beyond a decade. Congress has begun to address this structural failure. Senators Michael Bennet and Ben Ray Lujan, along with a coalition of lawmakers, introduced the Mining Waste, Fraud, and Abuse Prevention Act in March 2025 to modernize the 153-year-old law.<sup>[xxxviii]</sup> The bill would impose federal royalties on hardrock minerals, establish a reclamation fund for abandoned mines, require permits for exploration and operations, and allow tribes, states, and local governments to petition for land withdrawals. It would also mandate reviews of lands to determine whether they are appropriate for mining. These reforms signal a legislative shift toward a system that recovers value for taxpayers, protects water and public lands, and brings accountability to operators. A

modernized mining law that installs federal royalties, funds cleanup, and requires structured early engagement would reduce litigation, shorten timelines, and give both investors and communities the predictability needed to build a resilient mineral base for the AI era.<sup>[xxxix]</sup>

The U.S. Geological Survey's Earth Mapping Resources Initiative is beginning to close critical data gaps, revealing untapped domestic reserves and valuable co-products in mine tailings. Funding from the Bipartisan Infrastructure Law has accelerated this effort, expanding geoscientific mapping across key mineral regions.<sup>[xxx]</sup>

A new frontier is also emerging offshore. In April 2025, an executive order directed federal agencies to define leasing and permitting pathways for seabed minerals on the U.S. outer continental shelf. The Department of the Interior has begun mapping authorities and responding to early leasing inquiries, including one near American Samoa.<sup>[xxxi]</sup> Deep-sea extraction invites scrutiny from environmental organizations concerned about ecosystem disruption, sediment plumes, and long-term harm to marine life. Those objections are real and cannot be brushed aside. The only credible path forward is a staged approach that begins with baseline scientific surveys, transparent public data, and technology standards that limit disturbance. Policymakers can require environmental impact monitoring with open reporting, mandate pilot-scale operations before commercial approval, and tie any permit to enforceable shutdown triggers if harm exceeds defined thresholds. Stronger oversight and community consultation, especially with Pacific Island communities who rely on the ocean for cultural and economic survival, would also narrow the zone of conflict. If federal agencies adopt this model, offshore minerals can be evaluated as a strategic option without treating environmental protections as an afterthought.

## Policy Recommendations

*The strategy is direct: execute five moves simultaneously.*

**First, build domestic midstream capacity rooted in communities.** Prioritize copper refining, lithium chemicals, nickel and cobalt intermediates, graphite anodes, cathode materials, and permanent magnets across the Southwest and Gulf. Deploy DOE loans and tax credits to bridge capital gaps, conditioning support on strong labor standards, domestic content, and binding community-benefit agreements. Reward projects that co-locate mining and processing to retain value and jobs locally. Require water recycling, lined tailings, and continuous environmental monitoring, and make that data public. That is how social license is earned and sustained.

**Second, lock in a Western Hemisphere compact.** Start with Chile, Argentina, Brazil, Mexico, Peru, and Canada. Offer market access and Inflation Reduction Act eligibility for minerals meeting high environmental and labor standards. Co-finance refineries and component plants in partner nations so ore avoids detours through China. Publish a joint Minerals Security Partnership project list with clear milestones and financing. Support Chile's direct lithium extraction pilots with water safeguards, and back Argentina's permitting and grid expansion around lithium provinces. Treat Mexico's and Brazil's industrial bases as component hubs. Latin partners seek value-added industry, not extraction dependence; meet them on that ground.

**Third, institutionalize labor and rights.** Make neutrality in union organizing and compliance with core labor standards prerequisites for federal funding or procurement. Embed transparency clauses, mine-safety enforcement, and public reporting of community-benefit agreements into MSP and trade instruments. Enforce bans on forced-labor-linked intermediates at the border. This protects workers in the Andes and the Congo while defending Hispanic labor in U.S. industrial corridors. Higher standards stabilize production.

**Fourth, scale recycling and unconventional feedstocks.** Build a national network to collect and process retired EV and grid batteries. Fund commercial-scale plants capable of recovering lithium, nickel, cobalt, manganese, and graphite at high yields. Advance direct lithium extraction from geothermal and oilfield brines in California and Texas. Reprocess coal ash and tailings as above-ground ore for rare earth recovery. These steps expand supply, cut waste, and ease pressure on water-stressed mining regions.

***Fifth, center communities from Arizona to the Altiplano.*** Mandate early consultation, transparent impact assessments, and enforceable benefits for any project receiving federal support. Fund public water and air monitoring with open dashboards. Provide technical advisors to help tribes and municipalities interpret data and negotiate fair terms. Channel development finance into local services, road safety, and water infrastructure tied to mining revenue so communities see tangible gains during construction, not years later. Projects built on trust endure; those without fail under protest.

## **Security, Measured in Redundancy**

Defense systems run on the same magnets, batteries, and copper that power electric fleets and data centers. Concentration in a single country creates a strategic liability. China's recent export restrictions on critical mineral inputs made that clear. The remedy is redundancy: build domestic separation and magnet lines, expand allied capacity in Australia, Canada, and Japan, and maintain stockpiles of key oxides and alloys. Pair these with multi-year offtake contracts to give producers and financiers predictable demand. The cost of resilience is far lower than the cost of shutdowns in a crisis.

## **The Ten-Year Picture**

A credible 2035 supply chain map looks like this: Arizona and New Mexico expand into copper refining and magnet metal production. Texas operates heavy rare earth separation and at least one full magnet manufacturing line. The Salton Sea produces lithium hydroxide from geothermal brines, matched with a cathode plant in the same labor market. Across the country, recyclers recover cobalt, nickel, lithium, and graphite at scale and feed them back into U.S. cell production. In the Southern Cone, Chile and Argentina deploy direct lithium extraction with verified water safeguards and export refined chemicals instead of raw brine. Peru's copper corridor runs under enforceable community-benefit agreements and upgraded logistics. Mexico and Brazil anchor component manufacturing linked to North American auto and data-center supply chains. This network lowers exposure to single-country chokepoints and creates enduring industrial careers where resources and people already are.

## **Conclusion**

We can secure the minerals that power AI and clean energy while upholding standards that build trust. The path is clear. Cut dependence on single-country processing. Build midstream capacity across the United States and the hemisphere. Tie public investment to labor rights, environmental integrity, and enforceable community benefits. Fund mapping, processing innovation, and large-scale recycling to expand supply without repeating past damage. Make Latino communities partners from Arizona to the Andes. That is how the United States lowers strategic risk and builds a fair, durable system for the AI decade.

## **Key Terms**

- **Critical minerals:** Minerals like lithium, nickel, cobalt, graphite, copper, and rare earths that determine who controls compute, energy storage, and industrial capacity in the AI era.
- **Midstream:** The refining and processing stage where raw ore becomes usable inputs for batteries, magnets, chips, and motors, and the point where China holds decisive leverage.
- **Rare earth elements:** Metals such as neodymium, praseodymium, dysprosium, and terbium that enable permanent magnets in defense systems, EV motors, and data-center machinery.
- **Permanent magnets:** Components built from rare earths that drive actuators, electric motors, and weapons platforms, and represent a current U.S. industrial weak point.
- **Lithium brines:** High-salinity reservoirs in Chile and Argentina that supply the lithium used in batteries for EVs and AI-scale data infrastructure.

- Direct Lithium Extraction (DLE): A water-efficient technology that pulls lithium from brines and offers Latin America and the U.S. Southwest a path to scale output without draining communities.
- Friend-shoring: A supply chain strategy that redirects production to trusted partners in the Western Hemisphere to break reliance on Chinese processing.
- Social license: The consent of local communities—often Latino and indigenous—that determines whether mining, refining, and battery plants operate without protest or shutdowns.
- Community-benefit agreements: Legally enforceable commitments that tie mineral and industrial projects to local gains like revenue sharing, infrastructure, and water protections.
- Offtake agreements: Long-term contracts that guarantee demand for minerals or components, giving investors the certainty needed to build refineries, magnet plants, and recycling facilities.
- Recycling and unconventional feedstocks: Sources like used EV batteries, geothermal brines, coal ash, and mine tailings that expand mineral supply without expanding land or water conflict.
- Minerals Security Partnership (MSP): The diplomatic platform coordinating U.S. allies on financing, standards, and traceability from mine to magnet, and a foundation for a Western Hemisphere compact.
- Western Hemisphere compact: A proposed U.S.-led framework to align Latin American mineral producers and North American manufacturers into a single, China-proof supply chain.
- Latino labor: The workforce—from Arizona mines to Gulf Coast refineries—that will operate the separation columns, cathode plants, and recycling lines behind U.S. AI and clean-energy growth.

## Endnotes

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