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## Biden Administration Issues 100-Day Supply Chain Review Report

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### Industry-Specific Primer – Critical Minerals And Materials

On June 8, 2021, the Biden Administration issued the reports mandated by the Executive Order on America's Supply Chains (the "America's Supply Chains E.O." or the "E.O."), which directed the federal government to assess the supply chains of four critical products: (1) semiconductor manufacturing and advanced packaging; (2) large capacity batteries; (3) critical minerals and materials; and (4) pharmaceuticals and active pharmaceutical ingredients. On June 8, the Biden Administration also issued a [Fact Sheet](#) and held a [press briefing](#) about the reports.

The reports were consolidated into [one document](#) (the "100-Day Report") that also includes a summary of key takeaways for all four designated critical supply chains. As we wrote in [February](#), the 100-day reports will be followed by six additional sectoral-specific supply chain assessments that are due by February 24, 2022, which is the one-year anniversary of E.O. 14017.

This Industry-Specific Primer focuses on the "[Critical Minerals and Materials](#)" report that was coordinated by the U.S. Department of Defense ("DoD") (the "Critical Minerals and Materials Report"). This document is one of four Industry-Specific Primers on each critical supply chain that was covered in the Biden Administration's 100-Day Report. As discussed below, the 100-Day Report contains important recommendations and funding proposals designed to address current shortcomings – and to create new opportunities in – the critical minerals and materials sector, which plays an important role in the economic and national security of the United States and its global allies and partners.



## GENERAL FINDINGS OF THE 100-DAY REPORT

The combined 100-Day Report contains an Executive Summary that identifies common vulnerabilities and policy recommendations across each of the four critical supply chains.

- **Insufficient U.S. manufacturing capacity:** According to the report, the United States lacks sufficient manufacturing capabilities in each of the identified key sectors for a variety of reasons, including competition from low wage nations and stagnating productivity that impacts opportunities for continued innovation.
- **Misaligned incentives and short-term thinking in private markets:** The Biden Administration found that short-term profit concerns, such as low-wage workforces and stock buybacks, negatively impacted productivity and reduced long-term investments, such as research and development (“R&D”) and new facilities.
- **Industrial policies adopted by allies and competitor nations:** The report concluded that industrial policies adopted by the EU, Taiwan, South Korea, Singapore, and, China (especially), have hurt U.S. competitiveness. As to geopolitical competitors, the report notes that China “stands out for its aggressive use of measures—many of which are well outside globally accepted fair trading practices—to stimulate domestic production and capture global market share in critical supply chains.”
- **Geographic concentration in global sourcing:** The report states that the search for low-cost production and intensive efforts to attract investment by other nations “has led to geographic concentrations of key supply chains in a few nations, increasing vulnerabilities for United States and global producers.” As one example, the report notes that “China dominates the processing of strategic and critical materials, giving it de facto control over the flow of material through the supply chain.”
- **Limited international coordination:** According to the report, the “United States cannot manufacture all needed products at home” and “has not systematically focused on building international cooperative mechanisms to support supply chain resilience.”

The Biden Administration’s Executive Summary of the four reports includes the following recommendations.

- **Rebuilding domestic production and innovation capabilities:** Public funding should be provided for investments in manufacturing and R&D related to the four critical products, including at least \$50 billion to expand domestic manufacturing of semiconductors and other investments under the Biden Administration’s American Jobs Plan. The Biden Administration also recommends: (1) the establishment of a Supply Chain Resilience Program at the Department of Commerce to “monitor, analyze, and forecast supply chain vulnerabilities and partner with industry, labor, and other stakeholders to strengthen resilience”; (2) the establishment of an interagency Defense Production Act (“DPA”) Action Group “to recommend ways to leverage the authorities of the DPA to strengthen supply chain resilience”; and (3) development of an Export-Import Bank Domestic Financing Program “to support the establishment and/or expansion of U.S. manufacturing facilities and infrastructure projects in the United States that would support U.S. exports.”
- **Leverage Buy American requirements and government investment in critical products:** Critical products should be identified and receive additional preference for government purchases under the Buy American Act and Federal Acquisition Regulatory Council regulations. The Biden Administration also recommends “updat[ing] manufacturing requirements in federal grants, cooperative agreements and R&D contracts to ensure that taxpayer funded R&D leads to products made in the United States.”
- **Create a new “trade strike force” to strengthen international trade rules, including trade enforcement mechanisms:** The U.S. Trade Representative should establish and lead a “trade strike force” to “identify unfair



foreign trade practices that have eroded U.S. critical supply chains and to recommend trade actions to address such practices.” The Biden Administration also recommends the initiation of an investigation under Section 232 of the Trade Expansion Act of 1962 on imports of neodymium magnets.

- **Monitor near-term supply chain disruptions as the economy reopens from the COVID-19 pandemic:** A new Supply Chain Disruptions Task Force should be established and should be led by the Department of Commerce that will “provide an all-of-government response to address near-term supply chain challenges to the economic recovery” and focus on key industries that have faced pervasive supply issues during the pandemic, such as “homebuilding and construction, semiconductors, transportation, and agriculture and food.” In addition, the Biden Administration recommends that the Department of Commerce leverage data from across the federal government “to improve the federal government’s ability to track supply and demand disruptions and improve information sharing between federal agencies and the private sector to more effectively identify near term risks and vulnerabilities.”

### GENERAL BACKGROUND AND DEFINITION OF “CRITICAL MINERALS AND MATERIALS”

The Critical Minerals and Materials Report is “an interagency assessment, for which DoD played the lead.” DoD has significant experience with macroeconomic modeling of the Critical Minerals and Materials sector. The report explains that “strategic and critical materials impact hundreds of sectors of the U.S. economy” due to “their far upstream position relative to the goods and services typically purchased by U.S. consumers[.]” As one example, the report notes that “approximately \$613 million in U.S. consumption of rare earth elements unlocks approximately \$496 billion in economic activity in essential civilian sectors including petroleum refining, electromedical device manufacturing, and search, detection, and aeronautical instrument manufacturing.”

The definitions of “critical minerals” and “strategic and critical materials” are derived from prior executive orders and the Strategic and Critical Materials Stockpiling Act of 1979. A “critical mineral” is “a mineral identified by the Secretary of the Interior...to be (i) a non-fuel mineral or mineral material essential to the economic and national security of the United States, (ii) the supply chain of which is vulnerable to disruption, and (iii) that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for our economy or our national security.” 100-Day Report at 154, n.5. “Strategic and critical materials” likewise are defined as any materials that are “needed to supply the military, industrial, and essential civilian needs of the United States during a national emergency, and not found or produced in the United States in sufficient quantities to meet such demand.” *Id.*

At the current time, the United States has designated 35 commodities and minerals as “critical minerals” and more than 250 “strategic and critical materials.” DoD considered “issues in critical minerals supply chains” as part of “the broader discussion of strategic and critical materials” in the report.

### “THE ESSENTIAL CIVILIAN INDUSTRY WOULD BEAR THE PREPONDERANCE OF HARM” FROM SUPPLY CHAIN DISRUPTIONS

The report is noteworthy in its candor when describing the consequences of supply chain disruptions in this sector – “For more than a decade, DoD has consistently found that the *essential civilian industry* would bear the preponderance of harm from a disruption of” supply in strategic and critical materials (emphasis in original).

Although the U.S. Government possesses several tools to ensure that sufficient supplies of strategic and critical materials are available for national defense purposes, this threat also is real and present for emerging segments of the U.S. economy. For example, the report contemplates a hypothetical shortage regarding Neodymium (“NdFeB”) magnets, which are essential to numerous defense and civilian industrial uses. DoD candidly explains that “the U.S. Government will make maximum use of allocation and prioritization authorities” for NdFeB under the DPA, if necessary



during a national emergency. At the same time, however, the report cautions that disruptions caused by DPA procurement needs (and related demands on the commercial supply chain in such a situation) “is expected to produce very large essential civilian shortfalls – more than ten times DoD’s annual peacetime consumption.” Thus, one supply chain disruption can have cascading consequences throughout broad segments of the U.S. economy.

### IMPACT ON EMERGING TECHNOLOGIES, INCLUDING AUTOMOTIVE, AEROSPACE, FUEL PRODUCTION, POWER GENERATION AND DISTRIBUTION, ELECTRICAL PRODUCTS, AND CLEAN ENERGY

Supply chain risks do not occur in a vacuum. To the contrary, new technologies drive increased demand for strategic and critical materials. This intensifies the nature of the threat in several key areas of importance to U.S. manufacturing and technology. Examples include green energy products such as electric vehicles, electric vehicle batteries, wind turbines, semiconductors used in light-emitting diodes (“LEDs”), and magnesium and aluminum that are used to create lighter vehicle bodies. The report explains that these technologies “will require secure, reliable access to strategic and critical materials” in order to achieve sufficient scale.

The same is true of more mature U.S. industries, such as automotive, aerospace, fuel production, power generation and distribution, and electrical and electric products. The report explains that the DoD has modeled “the relationship between strategic and critical materials to specific industry sectors as well as the inter-dependences amongst these sectors” for decades by leveraging data from across the federal government. The stated purpose of these biennial data analyses is “to more precisely characterize potential shortfalls to defense or essential civilian requirements during postulated national emergency or peacetime disruption scenarios.” As stated above, a key takeaway of this analysis is that strategic and critical materials translate into both direct and “embedded demand in downstream sectors of the U.S. economy” such that the economic impact of supply shortages is magnified far beyond the economic value of any given raw material shortage.

Ambitions in both mature and emerging technologies are tempered by the real (and growing) need for sufficient supply volumes. The report cautions that long development timelines for greenfield strategic and critical materials projects (in excess of a decade) increase the nature of this threat. As discussed below, the Critical Minerals and Materials Report calls for intensive investments in “a new interagency task force to develop a material-by-material plan to identify specific locations of key strategic and critical materials in the United States that could be sustainably produced domestically.” In this regard, the report suggests that government involvement in the identification of new sources of supply will facilitate further investment (and quicker ramp-up times) for these important raw materials.

### THE ROLE OF CHINA

The Critical Minerals and Materials Report also plainly concludes that China’s acts and policies are creating the current global vulnerabilities in this sector. As one example, even where other countries extract and perform initial processing of strategic and critical materials, China dominates the processing phase, “giving its de facto control over the flow of material through the supply chain.” In particular, China deliberately has pursued intensive investments in strategic and critical materials supply chains around the world due to increased demand in its domestic market. In this regard, “China stepped up its efforts to capture the entire value chain in a variety of modern technologies such as permanent magnets, batteries, and semiconductors.”

The report also highlights the current fundamental difference between the United States and China with regard to national stockpiles of strategic and critical materials. Although the National Defense Stockpiling Act (“NDS”) requires DoD to maintain a stockpile, DoD notes that this “is a strategic stockpile, not an economic stockpile.” In contrast, China’s State Reserve Bureau “is an economic stockpile” that “is more interventionist,” exerts pressure on “price volatility,” and supports “particular industry segments.” The report also draws distinctions between Congressional diversion of NDS funds to other programs and intensive Chinese government support for critical minerals and materials purposes. China



also engages in pervasive “central planning and active management” of key affected industries and other “non-market activities,” such as export quotas.

### KEY RISK FACTORS DURING PEACETIME AND ARMED CONFLICT

The Critical Minerals and Materials Report assesses several risks to the strategic and critical materials sector. The report characterizes the risks in two principal tiers: “at and below the level of armed conflict.” As to risk factors below the level of armed conflict, the report indicates that “peacetime supply chain disruptions” are increasing “in frequency and intensity.” Key risk factors that were identified by DoD include: (1) concentration of supply; (2) single-source suppliers; (3) price shocks; (4) human capital gaps; (5) conflict minerals and organized crime; and (6) forced labor.

The report confirms that 37 strategic and critical materials are affected by a “foreign market dominator” (*i.e.*, when a country’s share of global production exceeds half of global production). Another area of concern is that several items are subject to “domestic sole-source” or “single points of failure” in the supply chain. The majority of materials that are subject to such a shortfall are affected by either domestic sole-source situations or “no domestic production at all.” In terms of human capital, the report notes decreasing attention in the United States to education and training opportunities in relevant competencies while China has created “39 universities granting mineral processing and metallurgy degrees” that educate thousands of students. With regard to conflict minerals, forced labor, and organized crime, the report explains the tension between increased demand for critical minerals and materials and the need to ensure that supply chains are not impacted by this “range of chain-of-custody risks at the mine site and at each subsequent node.” The report also emphasizes the unique nature of the market for strategic and critical materials. A key finding in this regard is that “supply is relatively inelastic” despite fluctuations in demand and pricing.

As to risk factors at the level of armed conflict, the report determined a likelihood that the United States would face inadequate supply of at least 53 materials during such a national emergency. The report emphasized that numerous materials are subject to foreign sources of supply, including high levels of concentration in some cases (*i.e.*, 84 different countries produce at least one “shortfall material”).

In sum, the report indicates that a variety of risk factors impact the “fragile” domestic market for critical minerals and materials.

### KEY RECOMMENDATIONS

The Critical Minerals and Materials Report contains the following key recommendations for the development of a comprehensive, “whole-of-government” approach to securing the supply chain.

- **Supply chain resiliency through sustainability:** The report urges government and industry stakeholders to develop “a recognized sustainability standard, potentially backed by legislation, and coordinated with trading partners” to leverage additional “private sector investment in sustainable sources and increase supply chain resilience.”
- **“Sustainably-produced” content and labelling standards:** The report urges industry participants collaboratively to develop “sustainability” content and product labelling rules that ensure strong environmental standards across the supply chain and that create opportunities for “informed consumer choice, an element largely absent in strategic and critical materials markets today[.]”
- **Leverage new U.S. Government spending requirements on “sustainably-produced” strategic and critical materials:** The report urges the U.S. Government to develop and implement a “sustainably-produced” standard and to direct the Federal Acquisition Regulatory Council to initiate a notice of proposed rulemaking to “establish a preference or requirement for the selection of products with higher sustainably-produced content.”



- **Expand domestic production and implement uniform national recycling legislation:** The report urges new investment in domestic exploration, production, and recycling operations. Importantly, the report urges the Biden Administration and Congress to develop uniform federal standards governing collection procedures for end-of-life strategic and critical materials, such as electric vehicle batteries.
- **Reinvigorate domestic exploration and data collection efforts:** The report urges Congress to increase funding for identifying “specific locations of key strategic and critical materials in the United States that could be sustainably produced domestically.” An interagency task force comprised of representatives from the U.S. Geological Survey, public lands agencies, the Department of the Interior, and the Department of Agriculture would participate in a new interagency task force.
- **Utilize the DPA and other programs to establish capacity, subsidize markets, and acquire materials:** The report urges use of the DPA “to spark private sector investment and send a strong signal to market participants” and to incentivize production throughout the supply chain. Additional support mechanisms across relevant Cabinet-level agencies, such as the Departments of Energy, Commerce, Interior, and Defense, should be leveraged to develop “downstream, high-value added manufacturing such as new magnet capabilities and advanced electric motor designs.”
- **Build-up U.S. stockpiles:** The report urges the U.S. government to take more interventionist actions to facilitate supply chain resilience. The report urges Congress to increase funding to the NDS and to consider legislation to modernize the legal framework in order to more efficiently build stockpiles “to mitigate peacetime disruption risk” to private industry.
- **Collaboration with allies and partners on global supply chain issues:** The report recommends that the Department of State and the U.S. Trade Representative “engage with like-minded foreign producers of strategic and critical materials to” develop consensus on sustainability and other market factors. The report also urges the Export-Import Bank of the United States (“EXIM”) to provide loans or loan guarantees to support the exportation of U.S.-origin mining equipment and engineering services, among other international financial tools that should be made available to assist market participants with debt, equity, and political risk insurance services.
- **Support increased transparency in global supply chains:** The report also states that increased supply chain transparency is essential to the national and economic security policy objectives of the United States, including on issues relating to labor, human rights, and the environment. This aspect of the report suggests that U.S. Government regulators, including the U.S. Securities and Exchange Commission, and the Departments of Justice, Homeland Security, State, and Treasury, will be tasked with developing policy proposals and pursuing increased enforcement activities in this area.

## CONCLUSION

The Critical Minerals and Materials Report sounds an alarm regarding the sustainability of the Nation’s strategic and critical materials supply chain. At the same time, DoD explains that while the agency “can play an important role” in addressing this emergency, DoD “cannot carry out this task alone. This is a task for the Nation.” In that regard, the report’s recommendations include comprehensive requests for legislative action by Congress to stimulate the discovery of new domestic reserves and to support key investments in new production capacity and R&D. The recommendations also urge policymakers to leverage the purchasing power of the federal government by creating new preferences for sustainably-produced critical minerals and materials and by implementing a new national labeling standard that also could serve as a model for international standards-setting bodies. Importantly, the report underscores the need for



active participation by affected industry stakeholders as the policy proposals and recommendations take shape in the near future.

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