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Biden Administration Issues 100-Day Supply Chain Review Report

Industry-Specific Primer – High-Capacity Batteries

On June 8, 2021, the Biden Administration issued reports that were mandated by an Executive Order on America's Supply Chains (the "America's Supply Chains E.O." or the "E.O.") 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. 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"), which 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 "[High-Capacity Batteries](#)" report that was coordinated by the U.S. Department Energy ("DOE") (the "Large Capacity Batteries 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 high-capacity batteries 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 vulnerabilities and policy recommendations that are common across each of the four critical supply chains.

- **Insufficient U.S. manufacturing capacity:** The Biden Administration found that 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-termism 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 Biden Administration found that industrial policies adopted by the EU, Taiwan, South Korea, Singapore, and, especially, China, have hurt U.S. competitiveness. In particular, the Large Capacity Batteries Report specifically cites government-led industrial policies implemented by China and the European Union to support their success across the battery supply chain. As to geopolitical competitors, the 100-Day 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 Biden Administration 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 100-Day Report notes that China dominates the high capacity battery supply chain with “over 75 percent of global cell fabrication capacity - largely driven by state investment in raw material processing, component and cell manufacturing, and electric-vehicle (“EV”) deployment support, among other state interventions.”
- **Limited international coordination:** The Biden Administration notes that the “United States cannot manufacture all needed products at home” and states that the United States “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 goods:** 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. The Task Force should “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 “HIGH-CAPACITY BATTERIES”

The E.O. required DOE to prepare a report identifying risks in the supply chain for high-capacity batteries, including EV batteries, as well as policy recommendations to address these risks. High-capacity battery cells are defined as “having a gravimetric energy density of 200 watt-hour per kilogram of greater.” DOE’s report underscores that the important and growing market for high-capacity batteries is essential to meeting U.S. national security needs and economic imperatives. Notably, China has moved “beyond conventional policy support with practices involving questionable environmental policies, price distortion through state-run enterprises to minimize competition, and large subsidies throughout the battery supply chain.” Nevertheless, “the opportunity for the United States to secure a leading position in the global battery market is still within reach if the Federal Government takes swift and coordinated action.”

Securing the upstream supply chain for lithium-ion, a key raw material in batteries applicable to new and growing EV and stationary storage markets and defense applications, is critical to achieving success in the next generation energy marketplace and achieving vital U.S. economic, energy, national security, and climate priorities. The report recognizes the need to prioritize increased domestic extraction (subject to environmental and labor standards) of lithium-ion, which faces upstream supply chain vulnerabilities.

The 100-Day Report recommends a coordinated U.S. investment and policy response to: (1) stimulate battery end product demand and (2) build out the full end-to-end battery supply chain through incentives at each of the below stages.

- **Raw Material Production:** The report highlights critical materials for high-capacity lithium ion batteries – particularly Class I nickel, lithium, and cobalt – as primary upstream supply chain vulnerabilities and promotes a focus on domestic extraction of critical materials where the United States has known reserves significant enough to establish an economic base supply.
- **Material Refinement and Processing:** The report notes that at the second supply chain step of refining and processing, the United States faces a significant deficit, and the report encourages increasing U.S. processing capacity to bolster the supplier chain, in combination with recycling.



- **Battery Material Manufacturing, Cell Fabrication, and Battery Pack Manufacturing:** According to the report, the United States continues to lag behind other markets for battery material manufacturing, cell fabrication, and battery pack manufacturing. Thus, federal funding for cell and pack manufacturing capacity can create the market conditions to catalyze greater private sector investment in the growing EV market.
- **Battery End-of-Life and Recycling:** Given that the battery-end-of-life stage is closely tied to the early stages of the supply chain, the report also notes that this stage can offset the need for new mining by increasing recycling and recovery of critical materials from products at the end of their life.

As industry actors along the supply chain have indicated that cell production will largely follow demand for EVs, a coordinated policy across the full supply chain is critical to drive domestic production.

RISK ASSESSMENT OF HIGH-CAPACITY BATTERY SUPPLY CHAIN

The Large Capacity Batteries Report identifies a variety of risks to the high-capacity battery supply chain. First, supply constraints or limited refining capacity are main contributors to insufficient domestic production of key raw materials (namely, lithium, cobalt, and nickel). Second, U.S. government support for the high-capacity supply chain historically has been limited, especially in comparison to the comprehensive and intensive involvement in this sector by the Government of China. Third, sufficient planning and support programs must be implemented in order to build the necessary workforce that will be required to support adequate domestic production of batteries. This could have cascading effects on the manufacture of EVs. Fourth, pervasive dependence on foreign- and/or single-sources of supply (including from geopolitical competitors) historically has restricted access to materials and inhibited the ability of U.S. firms to compete. Additional factors that could intensify these risks include price disruptions (e.g., the lithium market currently is susceptible to supply shortfalls that impact price) and natural disasters, climate shocks, and the prolonged effect of the COVID-19 pandemic on critical minerals and lithium-ion battery supply chains.

KEY RECOMMENDATIONS

The Large Capacity Batteries Report contains several key recommendations for the development of a comprehensive, “whole-of-government” approach to ensuring the supply chain, including through the creation of additional domestic manufacturing capacity and efforts to improve the resilience of the lithium battery supply chain (including the sourcing and processing of the critical minerals used in battery production). The [American Jobs Plan proposal would make](#) investments to spur demand, including \$100 billion in incentives to encourage U.S. consumers to transition to EVs and \$15 billion to build out a national EV charging infrastructure. Consistent with the American Jobs Plan, the DOE makes four specific policy proposals to boost domestic battery manufacturing capacity:

- **Stimulating Demand for End Products Using Domestically Manufactured High-Capacity Batteries:** This two-part proposal promotes supporting demand for batteries in the transportation and utilities sectors. First, the transportation recommendation encourages electrification of the federal vehicle fleet; the state, local, and Tribal government fleets; and the U.S. school bus and transit bus fleets (with accompanying support for developing EV charging infrastructure). The proposal would create a preference for U.S. content in “Point-of-Sale” rebates for consumers and a tax credit for medium and heavy-duty vehicles. It also would accelerate federal battery storage procurement under DOE’s Federal Energy Management Program (“FEMP”).
- **Strengthening Responsibly-Sourced Supplies for Key Advanced Battery Minerals:** This three-part proposal encourages: (1) investing in targeted, mineral-specific strategies (including sustainable domestic extraction and refining of lithium, cobalt recovery, and nickel refining); (2) raising labor and environmental standards (including the development of strong environmental review permitting extraction practices for high-capacity battery



minerals); and, (3) increasing resilience by strengthening U.S. recycling (including the establishment of a battery recovery and recycling task force).

Of particular note, the report calls for the modernization of U.S. laws and regulations governing mining on public lands.

- **Federal Grants And Tax Credits To Stimulate Sustainable Domestic Battery Materials, Cell, and Pack Production:** This policy proposal promotes: (1) catalyzing private capital with grants and loans, in part, through new federal grant programs; (2) introducing supportive tax credits, including manufacturing tax credits; and (3) leveraging federal procurement and financial assistance, with a particular emphasis on strengthening U.S. manufacturing commitments in federally-funded grants, cooperative agreements, and R&D contracts.

Of particular note, the report calls for DOE immediately to strengthen, through the Determinations of Exceptional Circumstances under the Bayh-Dole Act and other legal means, domestic manufacturing requirements for grants, cooperative agreements, and R&D contracts (including those related to lithium batteries). The recommendation proposes prioritizing domestic manufacture and domestic impact for all applications of lithium batteries.

- **Investing in Innovations that are Central to Maintaining a Competitive Edge:** In particular, this policy proposal promotes increasing support for R&D to reduce battery cell costs, enhance performance, and reduce dependency on key critical materials.

CONCLUSION

The Large Capacity Batteries Report sounds an alarm regarding the sustainability of the Nation's supply chain for high-capacity batteries. As DOE explains, "[g]overnment policies are needed to incentivize each stage of the U.S. battery supply chain." At the same time, the environment is ripe for these policy changes, because the strong demand for end products "provide[s] a foundation from which to compete in global markets." The recommendations urge policymakers to leverage the purchasing power of the federal government by creating new preferences for domestically-produced key raw materials when approving grants, cooperative agreements, and R&D contracts.

The report indicates that a competitive EV and advanced battery sector presents economic and national security imperatives for industry stakeholders. Importantly, the report underscores the need for collaboration between government and the private sector to diversify international sources and secure a supply chain consistent with U.S. environment and labor standards. Industry also should view the report as a cautionary signal that policymakers will continue to closely monitor investment in and production of advanced batteries, which may translate into increased export controls, trade enforcement actions, and reviews before the Committee on Foreign Investment in the United States ("CFIUS").



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