



Battery Materials & Technology Coalition Response to the Department of Defense Request for Information in Support of the Department's One-Year Response to Executive Order 14017, "America's Supply Chains"

The Battery Materials & Technology Coalition (BMTC) applauds the Biden Administration's focus on battery supply chains in Executive Order 14017, "America's Supply Chains," and the Defense Department's (DoD) invitation for comments and recommendations in support of DoD's One-Year Response to Executive Order 14017. BMTC appreciates the opportunity to respond to this request for information (RFI). If you have any questions about the RFI response, please contact Ben Steinberg at bsteinberg@vennstrategies.com, (240)-899-7447, or at 1341 G St NW, 6th Floor, Washington DC, 20005.

I. Introduction to BMTC

The Battery Materials & Technology Coalition (BMTC) represents private entities in the upstream and midstream battery and critical material sectors that are united behind a shared interest in growing a secure North American supply chain. Comprised of companies that mine, extract, process, and recycle battery components and critical materials as well as develop cathode, anode, and battery technologies, BMTC members are committed to ensuring that the U.S. seizes the opportunity to secure the supply chains that electrify our economy and power our way of life.

BMTC Member Companies: Amsted Graphite Materials, EnerSys, Forge Nano, Li-Cycle, Nouveau Monde Graphite, Novonix, Piedmont Lithium, REC Silicon, Sila Nanotechnologies, Standard Lithium, Talon Metals, Westwater Resources.

II. Domestic Capabilities Needed to Secure Minerals and Materials in Battery Supply Chains

Battery minerals and materials are the new engines of the global economy. The materials used in the various battery technologies that exist today are also critical in defense, energy, industrial, and consumer applications. With demand for critical materials skyrocketing, the global markets for these commodities and technologies are volatile and plagued with supply chain vulnerabilities. These vulnerabilities, coupled with a lack of domestic production and manufacturing capabilities, threaten U.S. national security in forcing DoD and others to rely on foreign sources, particularly adversaries such as China, for many of the materials used in manufacturing weapons, critical electronic systems, and batteries. The federal government, and especially DoD, must develop a holistic and coordinated approach to scaling critical material production capabilities at an expedited pace, or risk a prolonged reliance on foreign competitors for critical products and resources. An approach to scaling domestic production should include:

- *Mining and extraction:* Despite the fact that the U.S. sits on deposits of lithium, nickel, cobalt, and graphite, among other critical minerals needed to produce batteries, we only have a few operational mines supporting a domestic battery minerals industry. Other nations, notably China, are aggressively pursuing critical mineral supplies worldwide to

secure ownership of international sources of raw materials. To ensure the U.S. has access to the raw materials needed to supply a domestic battery industry, the federal government must strategically assess opportunities, and work with allies to expand our access to mineral resources. For example, the U.S. mines less than two percent of lithium globally, yet has at least 17 percent of the world's deposits. The federal government has an opportunity to convene industry, lawmakers, academia, and interest groups to promote safe and sustainable mining and extraction of domestic resources for critical applications like batteries. Doing so will help secure critical mineral supplies while reducing reliance on supply chains that do not meet our environmental and labor standards. In addition, working with allies such as Canada – which has strategic resource deposits and sustainability standards – is essential to building a resilient supply chain.

- *Material processing*: The U.S. has almost no commercial-scale battery material processing capabilities. This means that even if lithium ore or brine was mined or extracted in the U.S., it would still need to be sent abroad for processing into lithium hydroxide, which is used in most battery cathodes. The lack of a processing industry is not just a logistical difficulty, but also a significant vulnerability given China's stranglehold on the capability. In 2019, China controlled 59% of lithium processing, 65% of nickel processing, 93% of manganese processing, and 100% of natural graphite processing. The U.S. has the opportunity to develop domestic capabilities by working with and incentivizing our established industries to develop the supply chain. This is the largest risk in U.S. battery capabilities, but it could be remedied with smart investments and policies from government.
- *Anodes and cathodes*: The U.S. has little-to-no anode and cathode production at commercial scale. China dominates this midstream stage of the supply chain, with over 60% of global cathode production and over 80% of global anode production. The U.S. needs these capabilities at home to support a functional domestic battery cell market to ensure battery components are being produced with U.S. technologies guided by appropriate safety and sustainability standards. To cultivate a vibrant battery manufacturing industry in the U.S., domestic capabilities to produce cathodes, anodes, and other battery components such as electrolytes and separators must be scaled.
- *Battery cells*: The U.S. only has 4 battery gigafactories – large manufacturing facilities that produce batteries in massive quantities – in production today. While there are plans to have 10 total gigafactories by 2030, this is a meager share of the 199 factories around the world, 140 of which will be in China. The U.S. also faces growing competition in battery markets from Europe. To reduce its own reliance on Chinese-dominated battery supply chains, the European Commission is funneling investments to the whole of the European battery supply chain and has plans for 17 battery gigafactories by the end of the decade.
- *Recycling*: The U.S. must recycle battery materials for re-processing and reuse to reduce critical mineral vulnerabilities and establish a circular battery supply chain. Setting standards on recycling logistics and safety – while simultaneously establishing recycled content provisions – is a necessary step to successfully build this industry. In addition, strategically

building recycling facilities across the country will ensure the industry efficiently circulates materials back into the supply chain.

If these particular areas are not addressed, the U.S. battery supply chain can expect crises similar to those in the semiconductor industry. For the U.S. to be influential in global battery markets, reduce supply chain vulnerabilities, and create jobs in clean energy, the government must prioritize investments that help bolster processing and manufacturing capabilities. To maximize effectiveness, these investments must be capital intensive and require funding upfront to scale projects.

III. Recommendations for DoD to Foster Resilient Material Supply Chains

Due to U.S. reliance on foreign sources for mining, processing, and manufacturing of critical materials needed for battery production and technologies, the military's supply chains are increasingly vulnerable to foreign manipulation. DoD is equipped with the authority and expertise to respond to these vulnerabilities and scale critical mineral and material industries.

- *Innovative Contracting Authorities and the Office of Industrial Policy:* Given the importance of batteries to DoD capabilities, we recommend that President Biden sign a Determination, under DPA Title III authorities, to bolster critical materials production for batteries. Because it is expensive to scale industrial capabilities such as battery material processing, manufacturing, and recycling, a domestic industry needs the federal government to provide significant financial and policy levers to develop, maintain, modernize, and expand critical production capabilities. DPA Title III authority holds these levers, and the President and Congress should utilize these authorities to make long-term purchasing commitments for battery materials and technologies; provide subsidies for domestically produced battery materials and components; and work with private industry to expand production capacity using grants or loans. Congress should also significantly augment the annual budget for DPA Title III's critical materials efforts, and DoD should ensure coordination with appropriate agencies such as the Departments of Energy, Interior, and Commerce to use these resources most effectively.
- *Procurement Strategies and Defense Logistics Agency (DLA):* DLA plays a critical role managing DoD's critical material supply chain efforts through programs like Strategic Materials within the National Defense Stockpile program. We strongly recommend that DLA's capabilities and budget be expanded to sustain and build domestic operations for battery technologies. DLA and others in DoD must also commit to supporting the whole of the battery supply chain by increasing domestic material requirements – mandating that critical products and systems used by the military be made with materials from the U.S. In addition, DLA and others within DoD should adopt long term contracts for the procurement of critical materials to provide certainty to industry, eliminate use of lowest-priced, technically acceptable awards, emphasize awards for better technologies, and aggressively protect domestic sources of supply and IP from foreign competitors.
- *Interagency Coordination:* The Defense Department, in coordination with the Departments of Energy, Interior, Commerce, and State, should develop a comprehensive, cross-agency strategy to bolster critical mineral mining and extraction, as well as material processing,

manufacturing, and recycling. The Federal Consortium for Advanced Batteries has showcased government interest in starting this coordination, but much more is needed to prove to industry that the U.S. is ready to compete globally. Given DoD's expertise in securing and scaling supply chains, the Department is primed to be a strong leader in such an effort across relevant agencies, and to ensure the U.S. has the minerals, materials, and technologies to power our economy and military.

IV. Closing Statement

President Biden has already made his commitment to a domestic battery supply chain clear. Significant investments and a comprehensive approach to battery materials will grow U.S. manufacturing leadership, advance climate goals, expand job growth, and secure supplies for a range of defense and energy applications.

BMTC appreciates the opportunity to submit this response and urges DoD to consider the programmatic, funding, and policy suggestions to address mineral and material supply chain vulnerabilities in the battery and energy storage space. We welcome the opportunity to further discuss the challenges and opportunities in this sector and look forward to reading the Defense Secretary's One-Year Response to Executive Order 14017.