United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

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The Honorable Pete Stauber
Chairman
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Stauber:

Enclosed are responses prepared by the U.S. Geological Survey to questions for the record submitted following the June 4, 2024, legislative hearing on H.R. 6395, "*Recognizing the Importance of Critical Minerals in Healthcare Act of 2023*"; H.R. 8446, To amend the Energy Act of 2020 to include critical materials in the definition of critical mineral, and for other purposes; and H.R. 8450, "*Phosphate and Potash Protection Act of 2024*."

Thank you for the opportunity to provide this information to the Subcommittee.

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Sincerely,

Pamela L. Barkin
Acting Legislative Counsel
Office of Congressional and
Legislative Affairs

Enclosure

cc: The Honorable Alexandria Ocasio-Cortez
Ranking Member

Questions for the Record
House Committee on Natural Resources
Subcommittee on Energy and Mineral Resources
Legislative hearing on *H.R. 6395, H.R. 8446 and H.R. 8450*
June 4, 2024

Questions from Chairman Westerman

1) ***In your testimony you say the next critical minerals list will include an updated methodology which will incorporate a forecasting approach, and you specifically mention looking at scenarios involving earthquakes.***
    a. ***How much of a factor will potential natural disasters like earthquakes play in the new forecasting methodology?***

Response: Many major mineral producing regions of the world (for example, East and Southeast Asia and the western margin of South America) are also areas of active tectonics and associated natural hazards such as earthquakes, tsunamis, and volcanoes. USGS scientists are currently working on assessing the risks to mineral supply chains associated with natural hazards and evaluating how to merge those assessments with the potential supply chain impacts of other events, such as trade restrictions or geopolitical conflicts. This is one example of a type of disruption scenario that could be incorporated into the new methodology.

2) ***Dr. Williams, how would adding the Department of Health and Human Services as a collaborative agency during the Critical Mineral List determination process aid USGS in cross-sectoral examination of the mineral markets?***
    a. ***How would enacting H.R. 6395 aid USGS in its mission to analyze mineral supply chains' role in national and economic security?***

Response: As mentioned in my testimony, the USGS leverages interagency collaboration to ensure that the list of critical minerals represents the whole of government. Adding the Department of Health and Human Services to the USGS's collaborative process, as proposed in this bill, would further ensure a cross-sectoral analysis of the mineral supply chain risks that drive mineral criticality. Currently, the USGS is aware of a range of medical applications for which disruptions to mineral supply chains would impact the downstream manufacturing industries that U.S. healthcare systems rely on, but further engagement with HHS would ensure that we are aware of the Department's broader interests and concerns.

3) ***Dr. Williams, how does the methodology that USGS and DOE each employ to determine their critical mineral and critical material lists differ?***
    a. ***Why is continuing to allow USGS and DOE to each determine eligibility for minerals under their respective purviews, as H.R. 8450 proposes, important?***

Response: The USGS methodology for the list of critical minerals evaluates all minerals, and their dependencies across all technology, manufacturing, and economic sectors. The list of critical materials for energy evaluates minerals and other materials that are essential to the energy sector. These two processes are complementary; the list of critical minerals identifies supply chain risks resulting from competing demand across multiple sectors (such as aerospace,

infrastructure, and energy) while the list of critical materials for energy is a specific analysis for energy applications.

In accordance with the Energy Act of 2020, the 2025 list will include an updated methodology to determine mineral criticality. The methodology will incorporate a data-driven modeling approach to evaluate potential risks to mineral supply chains. The USGS is incorporating supply disruption scenarios into the methodology to better represent possible future risks to supply chains and to estimate the potential effects of such disruptions to U.S. gross domestic product (GDP).

Questions from Rep. Curtis

1) ***Reliance on foreign anode suppliers persists, and the U.S. is nearly 100% reliant on imports of anode materials. U.S. leadership in this critical mineral is possible, and ensuring its listing on the USGS list of critical minerals is another market signal and accelerator to showcase our domestic capabilities. Can you discuss the importance of research and development, and the domestic sourcing of these critical minerals, including silicon and silicon carbide in next-generation battery technology?***

Response: Potential actions to reduce the supply risks associated with critical minerals and materials can include increased domestic mining, increased imports from reliable trading partners, increased recycling, reprocessing mine waste to extract valuable materials, reduced demand through more efficient use of the minerals and materials, and development of advanced technologies to substitute other minerals and materials for the critical minerals and materials. Ensuring a reliable supply of the critical minerals and materials used in anodes could involve some or all of the potential actions outlined above, depending on sources of supply (both domestic and foreign) and the state of technology development.

In the case of silicon and silicon carbide, there are no shortages of the raw ingredients (silica and carbon). However, the Department of Energy's (DOE's) 2023 Critical Materials Assessment predicts that increasing demand for these engineered materials will exceed manufacturing capacity in the medium term, which accounts for their inclusion on the DOE list of critical materials for energy. Research and development work is important both to develop technologies that accelerate manufacturing and to identify alternative materials that can be used in the same battery applications to address the predicted shortfall.