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February 9, 2022

Secretary Jennifer M. Granholm
U.S. Department of Energy
The Forrestal Building – Room 7A-257
1000 Independence Ave., SW
Washington, DC 20585

Re: Seafloor Mineral Resources and Addressing Critical Supply Chain Issues

Dear Secretary Granholm:

In June of last year, the Department of Energy released a report to the President identifying risks in the high-capacity battery supply chain with policy recommendations to address these risks. This letter requests further information particularly as it relates to the potential sources of polymetallic nodules from the sea floor as part of our nation's strategic planning.

As you are aware, the need to address our nation's critical mineral dependence is overdue. The critical mineral provisions in the Energy Act of 2020 and the Infrastructure Investment and Jobs Act show there is a bipartisan consensus that the United States should take mineral dependence seriously. Furthermore, it is the Department's role to engage in strategic planning with eyes open, and remove obstacles to placing the United States in a leadership role in addressing potential mineral shortfalls.

U.S. strategy should be focused on securing access to battery raw materials, supporting growth of domestic materials-processing base, and public-private partnerships. Collection of polymetallic nodules and subsequent processing in the U.S. can support these objectives. It is not enough to rely on strategic partnerships for these minerals and while recycled materials can augment supply, they cannot meet forecasted demand. Taking into account the uptick in demand one might expect as a result of your Administration's goals to advance vehicle electrification, it is vital that domestic supply for these minerals be enhanced. For known domestic sources and those discovered in the near-term, the regulatory and permitting timeline from discovery to production is well over a decade. New and abundant sources of supply, such as polymetallic nodules, offer a pathway to mineral security for the United States.

In addition to focusing on conventional mining strategies, in the past I have also sought to direct funding for the federal government to assess seafloor mineral resources as a potential mechanism to enhance the security and sustainability of supplies available to the United States. It is my understanding that polymetallic nodules in the Pacific Ocean's Clarion Clipperton Zone, which sit unattached atop the seafloor, can be collected to provide enough nickel, copper, cobalt, and manganese to electrify the world's vehicle fleet several times over. Private sector efforts are already underway to assess and collect

these nodules and recent media reports indicate that low-impact ore processing would be located here in the United States.

Therefore, in view of the above report, I would ask for your attention to the following questions:

1. In the June 2021 report, the Administration found at page 154 that, "Significant quantities of strategic and critical materials may be found on the seabed…providing not only potential supply benefit, but also dual-use technology development." While the report cited the potential for "a significant future source of strategic and critical minerals," the report nevertheless concluded "they are not covered by this report." Given the sheer scale of the potential contribution, it would seem that any credible analysis of critical battery metal supply chains must include sea floor resources. Does DOE intend to undertake a strategic assessment of the role polymetallic nodules can play in addressing U.S. needs and shoring up our supply lines?
2. One of the key findings of the report is the singular importance of nickel in the supply chain that undergirds battery production. The report found that establishing domestic nickel refining capacity is among the highest strategic priorities. Does DOE view polymetallic nodules as a significant source of nickel?
3. Any form of resource extraction poses some environmental risk. What are the environmental effects from collection of these polymetallic nodules and how do they compare to alternative sources of these minerals?
4. How can the domestic production of polymetallic nodules from the Clarion-Clipperton Zone benefit the United States from an economic and strategic perspective?
5. What role, if any, is the Administration's position on ratification of the Law of the Sea (LOS) Treaty playing in the overall strategic plan for critical minerals? As part of this process, is the Administration increasing the priority it places on LOS treaty ratification?

Thank you for your attention to this matter. I look forward to working with you and the rest of the Administration on our shared goal of enhancing the mineral security and supply of the United States as we enter into this period of enhanced demand for battery materials.

Sincerely,

Lisa Murkowski
United States Senator