HOUSE COMMITTEE ON
NATURAL RESOURCES
CHAIRMAN BRUCE WESTERMAN

To:	Subcommittee on Energy and Mineral Resources Republican Members
From:	Subcommittee on Energy and Mineral Resources Staff: Rob MacGregor (Robert.MacGregor@mail.house.gov) and Annie Caputo (Annie.Caputo@mail.house.gov); x5-9297
Date:	Monday, January 19, 2026
Subject:	Oversight Hearing titled "*Deep Dive: Examining the Regulatory and Statutory Barriers to Deep Sea Mining"*

The Subcommittee on Energy and Mineral Resources will hold an oversight hearing titled "*Deep Dive: Examining the Regulatory and Statutory Barriers to Deep Sea Mining"* on **Thursday, January 22, 2026, at 2:00 p.m. in room 1334 Longworth House Office Building**.

Member offices are requested to notify Kenna Cline (Kenna.Cline@mail.house.gov) by 4:30 p.m. on Wednesday, January 21, 2026, if their Member intends to participate in the hearing.

I. KEY MESSAGES

- Minerals, particularly critical minerals, are essential to contemporary life. House Committee on Natural Resources (Committee) Republicans have repeatedly emphasized the importance of developing American critical minerals supply chains to ensure national and economic security and industrial competitiveness.

- Republican Members of Congress have joined the Trump administration in championing a multi-pronged approach to mineral exploration and extraction. Only in this way can adversarial nations, particularly China, be stopped from exploiting the global dependency for minerals to coerce, influence, or manipulate the United States (U.S.) and its allies.

- China is racing to dominate deep-sea mining, holding more exploration licenses than any other country, and seeking the rights to mineral recovery in an area spanning 92,000 square miles, roughly the size of the United Kingdom. If China obtains and produces these resources, it would further tighten its grip on the world's mineral supplies.[1]

- The sea floor is lined with critical and other hardrock minerals, often found in the form of small polymetallic nodules. The U.S. must lead the global race to explore deep-sea mineral deposits and develop innovative technology to efficiently recover minerals in an environmentally responsible manner.

[1] Lily Kuo, "China is set to dominate the deep sea and its wealth of rare metals," The Washington Post, October 19, 2025, https://www.washingtonpost.com/world/interactive/2023/china-deep-sea-mining-military-renewable-energy/.

- Congress must act quickly to improve permitting processes and other regulatory frameworks to ensure that they will allow the U.S. to unleash technological innovation, develop crucial terrestrial and seabed mining projects, and secure reliable and resilient mineral supply chains.

II. WITNESSES

Panel I (Outside Experts)

- **Mr. Gerard Barron**, CEO and Chairman, The Metals Company and The Metals Company USA, Raleigh, NC
- **Mr. Oliver Gunasekara**, CEO and Co-Founder, Impossible Metals, San Jose, CA
- **Mr. Erik Milito**, President, National Ocean Industries Association, Washington, DC
- **Dr. Andrew Thaler,** Founder & CEO, Blackbeard Biologic: Science and Environmental Advisors, St. Michaels, MD [Minority Witness]

III. BACKGROUND

Minerals are Essential to Contemporary Life

Minerals, particularly those that the U.S. Geological Survey (USGS) has identified as critical to America's national security, economy, or energy infrastructure, are essential to contemporary life. In its final 2025 List of Critical Minerals, USGS outlined a total of 60 mineral commodities "that face potential risks from disrupted supply chains."[2] The Committee has repeatedly emphasized the need to secure America's mineral supply chains,[3] highlighted the countless applications of hardrock minerals, and warned of the exponential rise in global mineral demand. Complementing those efforts, the Committee continues to expose how permitting delays, legislative restrictions, and dependence on foreign nations like China frustrate attempts to satisfy America's growing mineral demand.[4]

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[2] U.S. Geological Survey, "Interior Department releases final 2025 List of Critical Minerals," November 14, 2025. https://www.usgs.gov/news/science-snippet/interior-department-releases-final-2025-list-critical-minerals.

[3] *See, e.g.*, *Now Ore Never: The Importance of Domestic Mining for U.S. National Security*, Oversight Hearing before the Subcomm. on Energy and Mineral Resources of the H. Comm. on Natural Resources, 119th Cong. (Feb. 6, 2025) (hearing memorandum), https://naturalresources.house.gov/uploadedfiles/hhrg-119-ii06-20250206-sd002.pdf; *Contrasting Momentum in the Space Mining Economy to the Terrestrial Mining Regulatory Morass*, Oversight Hearing before the Subcomm. on Oversight and Investigations of the H. Comm. on Natural Resources, 119th Cong. (Feb. 25, 2025) (hearing memorandum), https://naturalresources.house.gov/uploadedfiles/hearing_memo_--_sub_on_oi_ov_hrg_on_space_mining_02.25.25.pdf; *Unleashing the Golden Age of American Energy Dominance*, Oversight Hearing before the Subcomm. on Oversight and Investigations of the H. Comm. on Natural Resources, 119th Cong. (Apr. 2, 2025) (hearing memorandum), https://naturalresources.house.gov/uploadedfiles/hearing_memo_--_sub_on_oi_ov_hrg_on_energy_dominance_04.02.25.pdf.

[4] *See id.* (referring to all three previously cited Committee hearing memoranda). *See also*, Climate Smart Mining Facility, "Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition," The World Bank, 2020, https://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-

On April 24, 2025, spurred by the pressing need to reshore mineral supply chains,[5] President Trump issued Executive Order (E.O.) 14285, "Unleashing America's Offshore Critical Minerals and Resources." The E.O. calls for the U.S. to immediately "accelerate the responsible development of seabed mineral resources," invest in deep sea mapping and technology to "quantify the [n]ation's endowment of seabed minerals," and "ensure secure supply chains for our defense, infrastructure, and energy sectors" through seabed mining.[6] In Congress, Representative Mike Ezell (R-MS-04) introduced H.R. 4018 to unleash America's offshore critical mineral resources by expediting permitting, expanding efforts to map seabed resources, and engaging with key allies on scientific collaboration and commercial development.[7]

Seabed Mining

Seabed mining is the process of "extracting sediment and mineral resources from the seafloor."[8] These mineral resources include three types of prominent deposits. The first, polymetallic nodules, typically exist on abyssal plains and contain cobalt, copper, manganese, nickel, and other metallic rare earth elements (REEs) that are essential to the production of batteries, electronics, and steel.[9] Nodule deposits develop over millions of years as minerals create thin concentric layers around small hard fragments like shells or shark teeth.[10] Nodules can vary greatly in size, from about 2 to 20 centimeters, and are estimated to exist worldwide in numbers as abundant as 210 trillion dry tons.[11]

Energy-Transition.pdf; James Marshall, "Insufficient minerals threaten energy transition —report," E&E News, May 5, 2021, https://www.eenews.net/greenwire/stories/1063731805; Duncan Wood, et al., "The Mosaic Approach: a Multidimensional Strategy for Strengthening America's Critical Minerals Supply Chain," Wilson Center, https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdfhttps://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdf; Bonakdarpour et al., "Mine development times: The US in perspective," S&P Global, June 2024, https://cdn.ihsmarkit.com/www/pdf/0724/SPGlobal_NMA_DevelopmentTimesUSinPerspective_June_2024.pdf; U.S. Geological Survey, "Mineral Commodity Summaries 2024," https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf; Ernest Scheyder, "China set to control rare earth supply for years due to processing dominance," Reuters, May 29, 2019, https://www.reuters.com/article/us-china-usa-rareearth-refining/china-set-to-control-rare-earth-supply-for-years-due-to-processing-dominance-idUSKCN1T004J.

[5] For example, China has repeatedly restricted or banned exports of critical and other hardrock minerals to the U.S. Earlier this month, China imposed new export restrictions on minerals crucial to U.S. defense, energy, and automotive industries. *See, e.g.*, Gracelin Baskaran and Meredith Schwartz, "The Consequences of China's New Rare Earths Export Restrictions," Center for Strategic and International Studies, April 14, 2025, https://www.csis.org/analysis/consequences-chinas-new-rare-earths-export-restrictions.

[6] The White House, "Unleashing America's Offshore Critical Minerals and Resources," April 24, 2025, https://www.whitehouse.gov/presidential-actions/2025/04/unleashing-americas-offshore-critical-minerals-and-resources/.

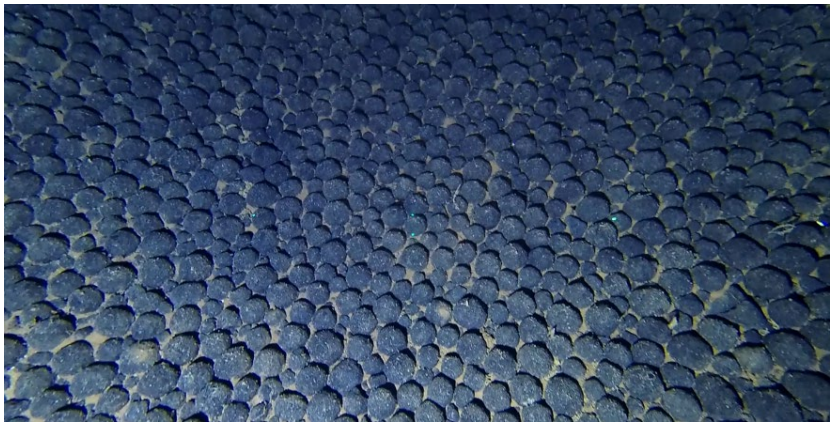
[7] H.R. 4018, "To unleash America's offshore critical minerals and resources," 119th Congress, 2025, https://www.congress.gov/bill/119th-congress/house-bill/4018?q=%7B%22search%22%3A%22hr+4018%22%7D&s=2&r=1.

[8] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.

[9] *Id.*

[10] *Id.*

[11] *Id.*; see also Phillip Gales, "How Polymetallic Nodules Form," Deep Sea Mining Inc., July 6, 2023, https://deepseamining.ac/how_polymetallic_nodules_form#gsc.tab=0.



Polymetallic nodules, each containing multiple valuable, including critical, minerals are seen here covering the sea floor in the Pacific Ocean.[12]

Polymetallic nodules are the most prominent form of seabed minerals targeted for extraction. Accordingly, several methods for harvesting them have been proposed, including the following:

1. "Remotely operated collector vehicles fitted with caterpillar-like tracks [that] use a water stream aimed at nodules laying on the seafloor to create a pressure drop and suction effect to lift sediment with nodules into a collector system."[13] This method functions as a vacuum-like system for harvesting polymetallic nodules.

2. An "autonomous underwater vehicle . . . that [hovers] over the seafloor and use[s] robotic arms with a vision system to pick individual nodules from the seafloor."[14] This method is empowered by artificial intelligence to avoid picking up objects other than nodules.[15]

Nodules were discovered as early as the 1870s during the HMS *Challenger* expedition,[16] but extraction and processing methods were not significantly explored until the 1970s.[17]

The second type of deposit, polymetallic sulfides, are usually found on seafloor spreading ridges and hydrothermal vents.[18] Polymetallic sulfides often contain copper, gold, iron, lead, silver, and zinc.[19] To mine sulfides, "remotely operated mining machines that cut and drill into the hydrothermal vent chimney to crush and extract internal minerals" are required.[20]

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[12] The Cook Islands Seabed Minerals Authority, "Seven Hundred Trillion Reasons: The Unseen Scale of Cook Islands' Seabed Resources," August 24, 2024, https://www.sbma.gov.ck/news-3/article-148.
[13] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[14] *Id.*
[15] *Id.*
[16] Shane Scarminach, "Diving into the History of Seabed Mining," Edge Effects, October 12, 2019, https://edgeeffects.net/seabed-mining/.
[17] Rifat Jabbar, et al., "Polymetallic Nodules and the Critical Minerals Supply Chain: A North American Approach," Wilson Center, March 6, 2024, http://wilsoncenter.org/sites/default/files/media/uploads/documents/Polymetallic%20Nodules%20and%20The%20Critical%20Minerals%20Supply%20Chain.pdf.
[18] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[19] *Id.*
[20] *Id.*

The third, ferromanganese crusts or cobalt-rich crusts, are typically found across ocean basins and shallower exclusive economic zones (EEZs) in volcanically active regions.[21] These crusts form on hard surfaces like rocks "from seawater rich in dissolved metals," and contain cobalt, manganese, nickel, platinum, and other metallic REEs.[22] To mine crusts, a "[r]emotely operated mining machines have been proposed to scrape across the surfaces of the seamount (or geologic features) to remove surficial mineral crusts."[23]

Two other types of mineral deposits, placers (heavy mineral sands) and phosphorites (sedimentary rocks), both occur in shallow waters close to shore. They contain relatively low concentrations of minerals and seem to attract less interest from commercial seabed mining companies.[24] Additionally, seabed mining techniques have been historically used to extract diamonds from the waters of South Africa and Namibia.[25]

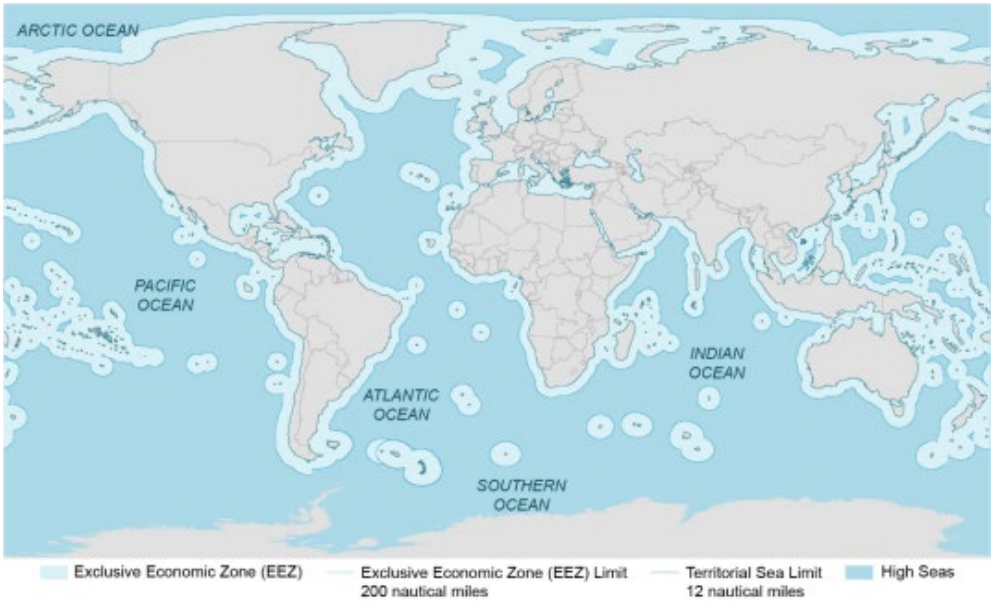

Illustration of ABNJ and EEZs of the world.[26]

Seabed mining can occur within two distinct geographic areas:

1. *EEZs*: Areas to which a coastal nation "may claim sovereign rights for the purpose of exploring and exploiting the natural resources of its continental shelf."[27] A nation's domestic laws regulate seabed mining activities within EEZs.[28] EEZs typically extend up to 200 nautical miles from shore and usually feature waters less than 200 meters

[21] *Id.*
[22] *Id.*
[23] *Id.*
[24] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[25] Cape Town Diamond Museum, "Diamond Mining," https://www.capetowndiamondmuseum.org/about-diamonds/diamond-mining/.
[26] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[27] *Id.*
[28] *Id.*

(approximately 656 feet) deep.[29] In the U.S., the EEZ encompasses the U.S. Outer Continental Shelf (OCS), which extends from about 3 nautical miles from shore,[30] where state-controlled waters end,[31] to about 200 nautical miles.[32] Seabed mining in the U.S. EEZ is regulated by the Bureau of Ocean Energy Management (BOEM) under the Outer Continental Shelf Lands Act (OCSLA).[33]

2. *Areas Beyond National Jurisdiction (ABNJ)*: Areas beyond EEZs, also known as the high seas or international waters, include all areas beyond approximately 200 nautical miles from the shores of coastal nations.[34] ABNJ commonly feature depths beyond 200 meters, at which seabed mining is also called deep-sea mining.[35] ABNJ seabed mining is generally regulated by the United Nations Convention on the Law of the Sea (UNCLOS) and its established International Seabed Authority (ISA).[36] In the U.S., which is not a party to UNCLOS, ABNJ seabed mining is regulated by the U.S. Department of Commerce's (DOC) National Oceanic and Atmospheric Administration (NOAA) under the Deep Sea Hardrock Mineral Resources Act (DSHMRA).[37] The most prominent hotspot of ABNJ seabed mining interest is known as the Clarion-Clipperton zone (CCZ) in the East Pacific Ocean in between Hawaii and Mexico.[38]

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[29] *Id.*
[30] Florida, Texas, and Puerto Rico each control boundaries extending up to approximately 9 nautical miles from shore. *See* Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[31] In the U.S., some states and territories prohibit seabed mining within their water. These jurisdictions include American Samoa, California, Hawaii, Oregon, and Washington. *See* Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[32] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324; *see also* Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[33] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[34] *See* Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[35] *Id.*
[36] *Id.*
[37] *Id.*; *see also* Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[39] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.

Domestic (EEZ) Governance Framework for Seabed Mining

A map of BOEM-regulated U.S. EEZ/OCS areas.[39]

BOEM regulates seabed mining within the U.S. EEZ, carrying out two primary functions related to seabed mining and critical minerals: 1) evaluating the U.S. OCS for mineral resources; and 2) leasing submerged lands for critical mineral exploration and development.[40] BOEM's administration of OCS leases, pursuant to the OCSLA,[41] most directly impacts the seabed mining industry. Although BOEM's Marine Minerals Program has "supported work to evaluate critical mineral resources on the OCS" to meet its first mission, BOEM has not yet "held any lease sales for critical minerals on the OCS or issued any critical mineral leases."[42] However, BOEM has issued two Requests For Information seeking comments and expressions of interest

[39] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[40] *Id.*
[41] 43 U.S.C. §§ 1331 *et seq*.
[42] BOEM's analysis suggests that 37 of 50 minerals identified by USGS as critical occur on the sea floor within the U.S. EEZ, some in greater quantities than found on land. BOEM has not formally evaluated the commercial viability of harvesting these critical minerals from the U.S. OCS. *See* Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.

with regard to offshore minerals—one for the Commonwealth of the Northern Marianas Islands and one for American Samoa.[43,44,45]

BOEM's permitting scheme consists of a two-step process. First, an entity interested in exploring U.S. seabed mineral deposits for later commercial purposes must apply to BOEM for a prospecting permit.[46] Then, the permit holder must share its collected data with BOEM. Crucially, "[a] prospecting permit is separate from a lease to develop minerals in an area, and the prospecting permit does not convey any preferential right to a lease."[47]

The BOEM leasing process can begin with an unsolicited request for a lease sale to BOEM or can be initiated by BOEM itself.[48] Regardless, BOEM must publish a request for interest detailing the mineral lease sale in the Federal Register.[49] BOEM lease sales must be awarded through competitive cash auctions.[50] Then, once a lease is awarded, BOEM must approve three plans before any seabed mining activities may start: 1) a delineation plan describing how the lessee will locate and characterize the minerals to be extracted; 2) a testing plan describing pilot mining and equipment testing activities; and 3) a mining plan that includes "comprehensive detailed descriptions, illustrations, and explanations of the proposed OCS mineral development, production, and processing activities, as well as plans to address environmental impacts and plans to clear the lease area when mining activities end."[51] Each of these approved plans must then be strictly adhered to during all seabed mining operations.[52] Pursuant to the Inflation Reduction Act of 2022, BOEM's regulations and processes also apply to "submerged lands offshore of U.S. territories as part of the OCS."[53]

As January 2026, at least one American company, Impossible Metals, "has submitted a request to commence a leasing process for exploration and potential mining of critical minerals in the deep sea off the coast of American Samoa."[54] This first-of-its-kind request from Impossible Metals to BOEM may facilitate increased interest in seabed mining in the U.S. EEZ.

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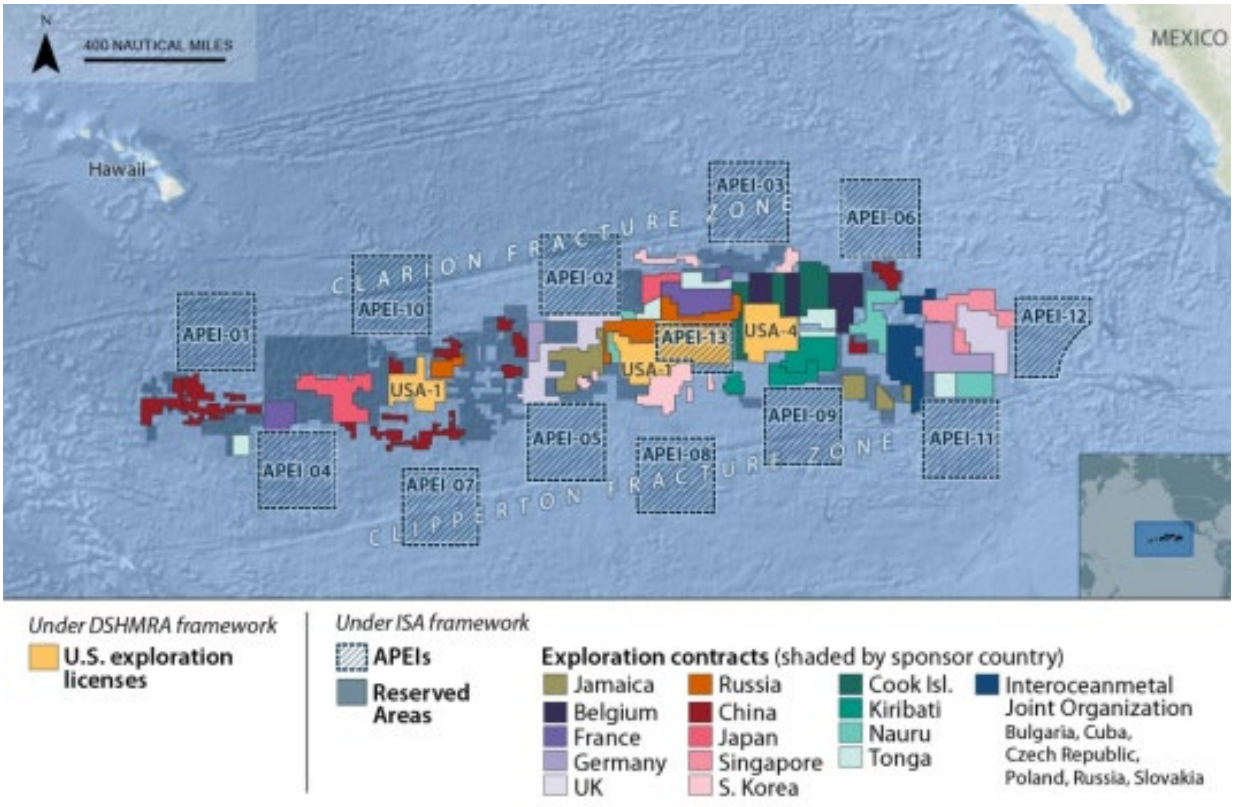
[43] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[44] Ocean Energy Management Bureau, "Commerical Leasing for Outer Continent Shelf Minerals Offshore the Commonwealth of the Northern Mariana Islands-Request for Information and Interest," Federal Register, November 12, 2025, https://www.federalregister.gov/documents/2025/11/12/2025-19852/commercial-leasing-for-outer-continental-shelf-minerals-offshore-the-commonwealth-of-the-northern.
[45] "Commercial Leasing for Outer Continental Shelf Minerals Offshore American Samoa-Request for Information and Interest" Federal Register 90, no. 114, June 16, 2025, 25369-2537, https://www.govinfo.gov/app/details/FR-2025-06-16/2025-10955.
[46] *Id.*; *see also* 30 C.F.R. §§ 580.24, 580.40 – 580.52, 580.70 – 580.73.
[47] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[48] *Id.*; *see also* 30 C.F.R. §§ 581.11 – 581.12.
[49] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302; *see also* 30 C.F.R. §§ 581.12.
[50] 30 C.F.R. §§ 581.18 – 581.21.
[51] Caitlin Keating-Bitonti and Laura B. Comay, "Critical Minerals on the U.S. Outer Continental Shelf: The Bureau of Ocean Energy Management's Role and Issues for Congress," Congressional Research Service, April 9, 2025, https://www.crs.gov/Reports/R48302.
[52] *Id.*
[53] *Id.*; *see also* 43 U.S.C. § 1331(a).
[54] Impossible Metals, "Impossible Metals Applies for Deep Sea Mining Lease in U.S. Federal Waters," April 15, 2025, https://impossiblemetals.com/blog/impossible-metals-applies-for-deep-sea-mining-lease-in-u-s-federal-waters/.

Additionally, President Trump's April 2025 E.O. aimed at revitalizing American seabed mining dominance directs the U.S. Department of the Interior, acting through BOEM, to "establish an expedited process for reviewing and approving permits for prospecting and granting leases for exploration, development, and production of seabed mineral resources" found in the OCS.[55]

International (ABNJ) Governance Frameworks for Seabed Mining



The CCZ, a polymetallic nodule-rich area in the Pacific Ocean.[56]

There are two major international entities that regulate ABNJ seabed mining, in addition to the U.S.'s own regulatory scheme in international waters. Each system is described below:

1. *UNCLOS*. In 1982, the United Nations (UN) "established a framework governing activities on, over, and under the world's ocean."[57] UNCLOS "considers minerals collected from ABNJ as the common heritage of mankind, meaning seabed resources are available for everyone's use and benefit, including Small Island Developing States, Landlocked Developing Countries, and Least Developed Countries."[58] UNCLOS entered into force in 1994. The U.S. did not ratify UNCLOS and is not a party to the convention.[59]

[55] The White House, "Unleashing America's Offshore Critical Minerals and Resources," April 24, 2025, https://www.whitehouse.gov/presidential-actions/2025/04/unleashing-americas-offshore-critical-minerals-and-resources/.
[56] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[57] *Id.*
[58] *Id.*
[59] *Id.*

2. *ISA*. UNCLOS established the ISA as "an autonomous organization that regulates and controls mineral-related activities in ABNJ for parties to UNCLOS."[60] Because the U.S. is a member of the UN, it holds observer delegate status at the ISA, despite not being party to UNCLOS.[61] The ISA has "issued 31 exploration contracts to public and private mining enterprises for seabed mineral resources," including 17 "for polymetallic nodules in the [CCZ]."[62] The ISA "has yet to develop a regulatory regime for extraction of seabed minerals and therefore has not issued exploitation contracts" for the extraction of deep-sea minerals.[63] The ISA is currently working to establish this regulatory regime. Notably, China and Russia are both parties to UNCLOS and hold exploration contracts issued by the ISA in the CCZ. China, in particular, has actively sought "seabed mining partnerships far beyond its shores," raising security concerns for the U.S., as China's seabed exploration activities generate data that can be used for future deep-sea mineral harvesting and military purposes.[64]

3. *U.S. Law and NOAA*. NOAA regulates U.S. seabed mining activity beyond the boundary of the U.S. EEZ. In 1980, Congress passed DSHMRA, establishing a framework for "authorizing U.S. citizens to explore for and recover minerals from the seabed in ABNJ" by enabling NOAA "to issue exploration licenses and commercial recovery permits to U.S. citizens for deep-seabed mining activities."[65] NOAA must "prepare and publish an environmental impact statement" for issuing exploration licenses or commercial recovery permits under the National Environmental Policy Act.[66] To be clear, "the lack of accession by the [U.S.] to UNCLOS does not preclude NOAA from issuing exploration licenses or commercial recovery permits pursuant to DSHMRA."[67] In fact, in 1984, "NOAA issued exploration licenses for four sites located in the CCZ."[68] Two of these exploration licenses, USA-1 and USA-4, were renewed in 2022 and are still held by Lockheed Martin.[69] However, these licenses were issued before UNCLOS entered into force and before the establishment of the ISA.[70] Today, it is unclear whether new NOAA recovery permits would be recognized as legitimate by UNCLOS parties, and it is possible that the ISA could attempt to issue permits to other companies from UNCLOS party nations in the same areas as U.S. companies permitted by NOAA.[71]

   Nevertheless, leading American scholars claim that NOAA's regulatory scheme is sufficient to allow American companies to mine the deep sea without the U.S. ratifying

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[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *Id.*
[64] Caitlin Keating-Bitonti and Jared G. Tupuola, "Seabed Mining Interests Across the Pacific Islands," Congressional Research Service, April 17, 2025, https://www.crs.gov/Reports/IF12974.
[65] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324; *see also* 30 U.S.C. § 1412; 15 C.F.R. § 970 – 71.
[66] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324; *see also* 30 U.S.C. §1419(d).
[67] Caitlin Keating-Bitonti, "Seabed Mining in Areas Beyond National Jurisdiction: Issues for Congress," Congressional Research Service, July 15, 2025, https://www.crs.gov/Reports/R47324.
[68] *Id.*
[69] *Id.*
[70] *Id.*
[71] *Id.*

UNCLOS.[72] Because of this confidence, at least one American company, The Metals Company USA, has applied with NOAA "for exploration licenses and commercial recovery permits under existing U.S. legislation."[73] Moreover, President Trump's April 2025 seabed mining E.O. directs DOC, through NOAA, to "expedite the process for reviewing and issuing seabed mineral exploration licenses and commercial recovery permits in areas beyond national jurisdiction."[74] This expedited process seeks to explicitly reinvigorate NOAA's ABNJ regulatory authority, which gives companies like The Metals Company USA the conviction, predictability, and competitiveness necessary to lead the world in seabed mineral exploration, identification, and collection.[75][76]

Regulatory and Permitting Reform is Essential for Successful Seabed Mining Operations

Navigating domestic and international regulatory frameworks to mine minerals from the seafloor poses unique challenges for seabed mining stakeholders. Additionally, efficiently processing and refining these minerals once recovered is a vital consideration for mining operators, but it still lacks a clear solution, barring permitting reform that would streamline domestic construction of the necessary processing and refining facilities. Today, although some foreign mineral processing facilities can extract minerals from polymetallic nodules, no such facility exists in the U.S. Further, no purpose-built facility exists to effectively extract all the valuable minerals found in each nodule brought up from the sea floor.[77] According to experts, just one purpose-built facility could unleash polymetallic nodule processing capabilities and create approximately 1,500 direct and 10,000 indirect jobs.[78]

Seabed mining efforts by U.S. entities, in the U.S. EEZ and in ABNJ, collectively represent a willingness to dive deep and use natural resources effectively. As technological innovation advances at a rapid pace, costs will continue to decline. As collaboration in the seabed mining industry continues, the U.S. could not only become the global leader in exploration and recovery of these vast mineral resources but also expand the application of these technologies.

As in most sectors, new technology has historically driven the mining industry. Today, promising innovations in the areas of withstanding the pressures exerted at extreme depths, artificial

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[72] Steven Groves, "The U.S. Can Mine the Deep Seabed Without Joining the U.N. Convention on the Law of the Sea," The Heritage Foundation, December 4, 2012, https://www.heritage.org/report/the-us-can-mine-the-deep-seabed-without-joining-the-un-convention-the-law-the-sea.
[73] National Oceanic and Atmospheric Administration, "Deep Seabed Mining: Notice of Receipt of Applications for Deep Seabed Mining Exploration Licenses and Announcement of Public Comment Period and Virtual Public Hearings," Federal Register, December 23, 2025, https://www.federalregister.gov/documents/2025/12/23/2025-23795/deep-seabed-mining-notice-of-receipt-of-applications-for-deep-seabed-mining-exploration-licenses-and.
[74] The White House, "Unleashing America's Offshore Critical Minerals and Resources," April 24, 2025, https://www.whitehouse.gov/presidential-actions/2025/04/unleashing-americas-offshore-critical-minerals-and-resources/.
[75] *Id.*
[76] National Oceanic and Atmospheric Administration, "'The next gold rush': President Trump unlocks access to critical deep seabed minerals," April 25,2025, https://www.noaa.gov/news-release/next-gold-rush-president-trump-unlocks-access-to-critical-deep-seabed-minerals.
[77] *See* Duncan Wood, et al., "The Mosaic Approach: a Multidimensional Strategy for Strengthening America's Critical Minerals Supply Chain," https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdf.
[78] Notes from conversation with stakeholder group on file with the Committee.

intelligence, mapping, data, processing, and refining efficiencies promise to upend the industry just as updates in machinery, robotics, and basic safety equipment did in years past.[79]

Now is the time to examine existing legal and regulatory frameworks to ensure that they will position the U.S. to unleash technological innovation, enable responsible seabed mining projects, and secure reliable, resilient American mineral supply chains. The U.S. cannot afford to allow China to dominate in the production of seabed minerals. We must actively compete to augment domestic minerals supply chains to meet national and energy security needs and bolster industrial and economic competitiveness.

[79] Miranda Barker, "Innovation Can Disrupt the Mining Industry. These Sustainable Start-Ups are Leading the Way," World Economic Forum, November 29, 2024, https://www.weforum.org/stories/2024/11/13-innovations-making-the-mining-and-metals-industry-more-sustainable/.