

Japan Rare Earth Push Risks Environmental Harm for Uncertain Returns

Tokyo's resource-security drive raises environmental and economic questions as Arctic and deep-sea rare earth projects face uncertain viability.

CA, UNITED STATES, June 30, 2026 /EINPresswire.com/ -- Japan's intensifying drive to secure rare earth elements is steering the country toward two of the planet's most fragile environments — the Arctic and the deep ocean floor — in pursuit of supply security that may never materialize at commercial scale.

This summer, a delegation including Japan's Ministry of Economy, Trade and Industry (METI), major trading houses, and the Japan Organization for Metals and Energy Security (JOGMEC) is scheduled to assess heavy rare earth potential at the Tanbreez deposit in southern Greenland during July and August. Separately, Japan in early 2026 carried out a world-first trial, led by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), to lift rare-earth-rich mud from roughly 6,000 meters below the surface near Minamitorishima.

Both efforts are framed as steps toward reducing dependence on China, which dominates global rare earth supply and has tightened export controls. The strategic logic is understandable. But the environmental and economic case deserves far harder scrutiny than it has received.

A radioactive complication in the Arctic

In Greenland, rare earth deposits are frequently bound up with radioactive elements such as uranium and thorium — one reason Greenland's parliament restricted uranium-bearing mining in 2021, stalling the Kvanefjeld project. Extraction in such a setting raises legitimate concerns about toxic tailings and the contamination of water sources in an already stressed Arctic ecosystem. Building mining infrastructure across carbon-rich permafrost carries its own climate risks.

The practical obstacles are equally severe. Independent analysts, including Wood Mackenzie, note that Greenland has no operating rare earth mines, minimal infrastructure, a tiny labor pool, and capital requirements that make projects uncompetitive against Canada, Australia, and the United States. More than a decade after exploration began, not a single commercial mine is in production.

Daunting economics on the ocean floor

The deep-sea picture is no more reassuring. Seabed ecosystems at these depths evolve over

thousands of years and recover poorly, if at all, from disturbance. Sediment plumes generated by extraction can spread well beyond the mining site.

Meanwhile, the economics remain forbidding. Extraction yields only about two kilograms of rare earth elements per tonne of mud; the research vessel Chikyu costs tens of millions of yen per day to operate; and some analyses put production costs many times higher than China's onshore operations, with payback periods stretching well over a decade. Even JAMSTEC has acknowledged that mining so far from the mainland offers little near-term prospect of profitability or price competitiveness.

A pattern of announcements outrunning delivery

There is also reason to question whether political signaling is outpacing industrial fact. Japan has repeatedly unveiled ambitious resource-security measures in moments of crisis, yet the gap between announcement and delivery is hard to ignore: the Kvanefjeld project in Greenland has been stalled for more than a decade after uranium-content restrictions took effect in 2021, and not a single commercial rare earth mine is in production anywhere on the island despite years of exploration. The deep-sea effort is at an even earlier stage, with no commercial extraction ever achieved at such depths and a demonstration phase only tentatively scheduled for 2027. Some Japanese commentators have argued that the timing of announcements around the Minamitorishima trial served domestic political ends as much as supply-chain ones.

Seen against this record, the latest plans risk repeating a familiar cycle — generating headlines and absorbing public funds while delivering little measurable progress, and adding environmental risk along the way. None of this means Japan should abandon its pursuit of resource security. But the more credible path runs through recycling, processing efficiency, and the development of alternative materials. Tokyo would be better served by halting its riskiest overseas and deep-sea ventures until their commercial viability is proven, and concentrating first on the technologies it can actually deliver.

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