Does Subsidizing the Production of Rare Earths Stifle Innovation?

written by Jack Lifton | July 29, 2026

In his book, *The Economic Government of the World: 1933–2023*, Martin Daunton states: “In 1982, Anne Krueger became the chief economist for the World Bank. She was best known for the notion of **rent-seeking behavior.**[2] That is, higher profits or rents could be achieved by lobbying governments for tariffs, subsidies, and barriers to entry of new firms than by investing in new technology. She argued that the result was a vicious circle, for new firms can only succeed by engaging in the same process, with political implications of casting doubt on the fairness of the market system.”[1]

Based on this type of thinking, I think that we should question whether subsidies for rare earths are impeding the development of new, more efficient, lower-cost technologies for processing rare earths in the United States.

I think that the answer is yes—but with an important qualification. Krueger’s analysis provides a very useful framework for thinking about the current American rare earth industry, although it does not automatically imply that all subsidies are harmful.

The question is not whether subsidies exist. The question is **what behavior they reward.** Krueger’s argument was that firms maximize returns by seeking political favor rather than improving productivity. Once that becomes the rational business strategy, innovation slows because improving political access is cheaper and less risky than improving technology.

In today's rare earth industry, one can certainly see elements of that phenomenon. Instead of asking, "How do we reduce the cost of separating dysprosium?" many companies may instead ask, "How do we qualify for another Department of Defense grant?" Instead of asking, "Can we invent a solvent extraction system requiring half as many stages?" they ask, "Can we write a proposal that fits the latest government funding program?" Those are fundamentally different incentives. One of the recurring themes in my writing has been that governments often confuse **capacity** with **capability**.

There is a distinction between capability and commercial viability. Subsidies frequently reward the construction of facilities. Markets reward facilities that can actually compete. Those are not the same thing. A solvent extraction plant that costs three times as much to build and twice as much to operate as a Chinese plant has increased American capacity, but it has not necessarily increased American industrial capability if it cannot survive without permanent government support.

There is the technology problem. Ironically, today's dominant rare earth separation technology is almost unchanged from the chemistry developed decades ago. Most Western projects propose enormous solvent extraction plants requiring hundreds or thousands of mixer-settlers. Those plants work. They also require huge capital investments. If subsidies make those economics acceptable, entrepreneurs have less incentive to discover something radically better.

History suggests that transformative technologies often emerge only when economic pressure makes existing methods unacceptable. Consider analogous industries: Aluminum production became vastly more efficient only because electricity costs mattered. Copper extraction changed dramatically through solvent extraction/electrowinning when economics favored lower-cost

methods. Semiconductor manufacturing evolved continuously because no government permanently guaranteed profitability. Rare earths may be approaching a similar point.

There are promising areas of research: membrane separations, continuous ion-exchange systems, molecular recognition chemistry, improved extractants, electrochemical methods, plasma and microwave-assisted processing, and bio-based separation techniques.

Many remain laboratory-scale because existing government programs frequently reward scaling known technologies rather than replacing them. But there is another side. Ms. Krueger was writing primarily about mature markets. Rare earths are different because China does not merely have lower costs; it possesses decades of accumulated industrial experience, supplier networks, downstream customers, and economies of scale. A purely free market today would probably result in little or no new rare earth separation capacity being built in North America.

That creates a genuine national-security concern. The question therefore becomes: Should subsidies exist, or should subsidies be designed differently? Those are very different questions.

If the objective is permanent industrial capability rather than temporary capacity, government might better reward outcomes than construction. For example, instead of subsidizing the construction of a separation plant, government could reward demonstrated reductions in operating cost, lower reagent consumption, higher recovery rates, lower capital intensity, reduced environmental footprint, and/or successful qualification by major OEM customers.

That changes the incentive. Companies compete through engineering rather than lobbying.

The greatest value in rare earths is seldom created by simply owning a mine or constructing another conventional solvent extraction circuit. It is created by discovering ways to make every downstream step cheaper, faster, cleaner, and more reliable. A company that reduces the cost of separating heavy rare earths by 40% creates far more long-term value than one that receives a grant to duplicate yesterday's technology.

There is an even broader point. Krueger's work can be updated from **rent-seeking** to what might be called **subsidy-seeking**. The modern rare earth industry often appears to reward four different business models: Finding better ore, finding better chemistry, finding better customers, and/or finding better government programs. The first three create wealth. The fourth redistributes it.

One could argue that the long-term competitiveness of the Western rare earth industry will depend on shifting incentives away from subsidy-seeking and back toward technological innovation and industrial efficiency. That would be very much in keeping with Krueger's original insight: societies prosper when firms earn profits by creating more value, not by becoming more adept at obtaining political favor.

[1] Martin Daunton, *The Economic Government of the World: 1933–2023* (London: Allen Lane Publishing, 2023), 867

[2] Anne O. Krueger, "The Political Economy of the Rent-Seeking Society," *American Economic Review* 64, no. 3 (June 1974): 291–303.