Who Will Buy All of America's Rare Earth Magnets?

written by Jack Lifton | November 22, 2026

I have been involved in the production, processing, trading, and marketing of critical minerals and metals for more than sixty years, and I have learned that the most dangerous number in the mining and metallurgical industries is the one that appears in a promotional presentation without any explanation of how it was derived. Today, promoters of critical mineral projects, their financial backers, and, increasingly, government agencies seem to be competing to announce the largest possible production capacities in the shortest possible times. The numbers are getting bigger, the projected construction and commissioning times are getting shorter, and the relationship between these announcements and industrial reality is becoming increasingly difficult to discern.

Nowhere is this more apparent than in the American government's campaign to establish a domestic rare earth permanent magnet supply chain. The stated objective is reasonable. The United States should be able to manufacture the critical components its defense and civilian industries require, and it cannot safely remain heavily dependent on foreign suppliers. But the relationship between that objective and the enormous production capacities now being announced is, to me, almost nonexistent.

The open literature now contains announcements of plans and potential expansions totaling at least 40,000 metric tons of annual rare earth permanent magnet manufacturing capacity in the United States. In fact, an investor-seminar Q&A published by the Japanese vacuum equipment manufacturer **ULVAC, Inc. (TSE: 6728)** in April 2026 described a target of approximately 45,000 tons of

American capacity by 2030. The individual announcements include U.S. capacity targets of 10,000 tons each from MP Materials Corp. (NYSE: MP), USA Rare Earth, Inc. (NASDAQ: USAR), and Vulcan Elements Inc., along with additional production proposed by VACUUMSCHMELZE GmbH & Co. KG, JS Link, Inc. (KOSDAQ: 127120), and others. These are proposed annual capacities, not actual production, much less qualified production sold to paying customers. Nevertheless, they are routinely discussed as though their announcement were equivalent to their eventual realization.

My first question is simple. Who will buy all these magnets?

Some buyers have been identified, and some production has already been sold. MP Materials has a ten-year government-backed offtake agreement for its 10X facility and commercial supply agreements with **General Motors Company (NASDAQ: GM) and Apple Inc. (NASDAQ: AAPL)**. USA Rare Earth has reported its first commercial sales of sintered neodymium-iron-boron magnet blocks. What remains unclear, so far as I can determine, is whether the full proposed volume has customers at economically sustainable prices.

This does not mean that there are no estimates of American magnet consumption. In its February 2022 supply chain assessment, the United States Department of Energy estimated total American demand for selected neodymium-iron-boron permanent magnet applications at about 16,100 metric tons in 2020 and projected it might reach 37,000 tons in 2030 under a high-growth scenario. But those figures include magnets incorporated into imported finished products and assemblies. They are not measurements of the market available to American manufacturers of magnets. Nor are they commitments by American manufacturers to purchase domestically produced magnets.

This distinction is fundamental, and its neglect may be the most serious error in the entire American rare earth industrial policy.

A rare earth permanent magnet manufactured in China and installed in an electric motor manufactured in Japan, Korea, Mexico, or China, and subsequently imported into the United States as part of an automobile, is certainly part of American consumption of rare earth permanent magnets. But it is not necessarily part of the American market for domestically manufactured magnets. The customer for that magnet was the motor manufacturer, not the American purchaser of the automobile. Unless the motor manufacturer is willing and able to qualify and purchase an American-made magnet, the fact that the automobile is eventually sold in the United States does not create a market for American magnet production.

The same problem applies to wind turbines, industrial machinery, appliances, electronic devices, robotics, and countless other manufactured products. The United States imports enormous quantities of products containing rare earth permanent magnets, but those magnets have already been purchased, qualified, and incorporated into assemblies elsewhere. Counting their weight as potential demand for American magnet manufacturing is wishful thinking unless there is a realistic plan to enter existing international supply chains or manufacture the downstream assemblies domestically.

Another problem with the numbers is almost never discussed. Rare earth permanent magnets are not a single interchangeable commodity. For this discussion, I would divide them into what I call commodity magnets and specialized magnets. By commodity magnets, I mean magnets manufactured for applications that can accommodate a range of magnetic properties and dimensional tolerances. By specialized magnets, I mean those whose chemical

composition, magnetic properties, thermal stability, coatings, dimensional tolerances, and long-term performance must meet tightly defined requirements set by the end user.

These are not necessarily formal industry classifications, but the distinction is commercially essential. A magnet suitable for an ordinary consumer product is not automatically suitable for an electric vehicle traction motor, a wind turbine generator, or a military system. Even among the latter applications, the requirements can differ substantially. The fact that two manufacturers produce neodymium-iron-boron magnets does not mean that their products are interchangeable.

In my experience, specialized magnets are not sold simply by offering a certain quantity of material at a certain price. The customer must qualify it, often after extensive testing, and incorporate it into an assembly whose design and performance may depend on very specific magnetic characteristics. The qualification process can be expensive and time-consuming, and it may require modifications to the manufacturing process itself. The manufacturer who announces an annual capacity of 10,000 tons has told us almost nothing about how much of that capacity can produce magnets that particular customers will accept.

Yet the public discussion of future American magnet demand rarely distinguishes among these categories. We are given estimates of total tonnage, often accompanied by predictions of extraordinary growth in electric vehicles, wind turbines, robotics, and defense applications. We are seldom told how much of the projected tonnage represents ordinary commercial magnets, how much represents specialized magnets, how much is already supplied through established foreign manufacturing relationships, and how much could realistically be transferred to American production.

The Department of Energy's 2030 high-growth projection is particularly instructive. Of the 37,000 tons of estimated American consumption, approximately 10,100 tons were attributed to offshore wind turbines and another 10,200 tons to electric vehicles. Together, these two applications accounted for more than half the projected demand. But a projection made under assumptions about the future growth of particular industries is not an order book. Changes in energy policy, vehicle purchasing patterns, manufacturing locations, motor technologies, and the economics of competing products can substantially alter the result. And even if the projected consumption materializes, there is still no reason to assume that American magnet manufacturers will capture it.

The distinction between capacity and capability is just as important. A company may construct a factory with equipment theoretically capable of producing 10,000 tons of magnets annually. That does not establish that the factory can operate continuously at that rate, that its products will meet customer specifications, that it can obtain the necessary metals and alloys in the required quantities and qualities, or that it can manufacture those products at internationally competitive costs.

A primary rare earth permanent magnet supply chain begins with mineral resources and proceeds through mining, beneficiation, chemical processing, separation, metal production, alloy production, magnet manufacture, and finally the qualification and sale of the magnet to an industrial customer. Each stage has its own technical and economic requirements. Each must be synchronized with the others. A 10,000-ton magnet factory is of little value if its suppliers cannot deliver the necessary qualified alloys, and an alloy factory is of little value if the magnets made from its products cannot be sold.

This is why I have repeatedly argued that industrial supply

chains must be built backward from the requirements of original equipment manufacturers, not forward from the ambitions of miners, metallurgists, financial promoters, and politicians. The customer determines the product. The product determines the manufacturing process. The manufacturing process determines the materials required. Reversing this sequence may attract investment, but it is a poor way to build a sustainable industry.

I am also struck by the extraordinary confidence with which completion dates are announced. Projects involving technologies never demonstrated commercially at the proposed scale are routinely described as though construction were the principal remaining obstacle. The history of the metallurgical industries tells us otherwise. Scaling a process from laboratory demonstration to pilot plant, from pilot plant to demonstration plant, and finally to sustained commercial production is not simply a matter of purchasing larger equipment. It involves discovering and solving problems that may not have been apparent at smaller scales.

The people best qualified to evaluate these problems are those who have actually built, commissioned, and operated comparable facilities. Yet I see remarkably little evidence that such individuals are subjecting the announced production schedules and capacities to rigorous independent evaluation. Financial analysts seem increasingly willing to substitute the size of a proposed facility for an assessment of its technical feasibility, and government agencies appear to have adopted much the same practice.

The financial consequences are obvious. A project promising 10,000 tons of annual production can support a much larger valuation and a much more impressive presentation than one proposing 1,000 tons. A project promising commercial production

in two years is more attractive to investors and politicians than one admitting that five or more years may be necessary. The incentives therefore favor the largest possible numbers and the shortest possible schedules, whether or not they relate reasonably to industrial experience.

Government financing can make this problem worse, not better. When subsidies, loans, loan guarantees, price supports, and procurement commitments are available, the promoter’s objective may shift from demonstrating a commercially viable business to demonstrating eligibility for public support. The size of the announced project then becomes a political and financial asset in itself. The public is told how much capacity is being created, how many jobs are projected, and how much private capital is supposedly being attracted. It is rarely told how much qualified product has actually been sold at a price that covers the full cost of production.

I am not suggesting that the United States should abandon the effort to restore its rare earth permanent magnet manufacturing capability. Quite the contrary. I believe such a capability is essential for national security and for restoring a competitive American industrial economy. But national security does not require building the largest possible number of factories. It requires the reliable production of the specific materials and components that American industry and the military actually need.

A modest facility that consistently produces qualified specialized magnets for identified customers may be far more strategically valuable than a much larger factory producing commodity magnets for which no competitive market exists. Success should be measured not by the factory’s nameplate capacity but by the quantity, quality, reliability, and cost of the products it delivers to customers who need them.

Before another multibillion-dollar magnet manufacturing project receives public support, I would like to see a few numbers that are conspicuously absent from most of the announcements. What is the current annual American demand for magnets purchased as magnets, rather than embedded in imported assemblies? How much of that demand is for specialized magnets? Who are the customers, what are their specifications, and how much material have they committed to purchase? What percentage of the proposed production has been qualified? What is the demonstrated operating yield? What is the delivered cost of a qualified magnet compared with its established international competitors? And what portion of the proposed output can realistically be exported if domestic demand proves insufficient?

These are not unreasonable questions. Any experienced industrial purchaser or investor should ask them before committing capital to a manufacturing enterprise.

The numbers that matter in industry are not the numbers that appear in promotional presentations. They come from operating records, customer qualification programs, purchase orders, production yields, costs, and cash flows. A factory’s capacity states what its equipment might produce. Capability is what it can reliably produce. Its commercial viability depends on what customers will buy at a price that lets the producer remain in business.

I fear we are witnessing the financialization of American industrial policy, in which announcing ever-larger production capacities has become an end in itself. The promoters announce the numbers, the financial community values them, and the government subsidizes them. The actual industrial market, which should have determined those numbers in the first place, is treated almost as an afterthought.

The United States does not need 40,000 or 45,000 tons of announced rare earth permanent magnet capacity. It needs enough economically sustainable, technically qualified production to satisfy identified strategic and commercial requirements, with the ability to expand as genuine demand develops.

Until someone can demonstrate that the proposed capacity matches that demand, I can only conclude that much of the announced American rare earth permanent magnet capacity remains on paper.

It is numbers.