Setback for U.S. Rare Earth Industry: China Tightens Export Laws on Key Technologies, Impeding American Efforts to Gain Independence Despite Financial Incentives

written by Jack Lifton | December 21, 2023

Reviving the Domestic American Rare Earth Permanent Magnet Industry

Bad news for those who think that the shortage of rare earth processing in America can be resolved by the injection of "free" money (A/K/A subsidies [also known as taxpayer's money]) into the "free" market as, drum roll, please, "tax credits," grants, and loans. The Chinese have decided not to give up their decades-long, learned by trial and error as much as by science and engineering, dominance in rare earth processing. China has announced a (further) tightening of its strict laws against the export of rare earth themed industrial technology. In particular, this means that technologies for producing rare earth metals, alloys and MAGNETS may not be shared with ANY foreign (to China) entity as a matter of national security!

Indeed, most of the mining, refining, processing, and fabricating technology for rare earths and their commercial products originated in Europe and the United States between the end of World War II and the early 1980s, but, at that time a

combination of newly exploited deposits in China and the need to lower costs for the rapid expansion of the rare earth permanent magnet industry drove rare earth processing and manufacturing engineering to China and Japan.

By the end of the twentieth century, the rare earth permanent magnet manufacturing industry had essentially vanished from the West. By two decades later, it has become even more narrowly confined to China.

Scientists in the West (more and more of whom are of Asian origin) certainly understand the science behind rare earth permanent magnets. Still, the manufacturing engineers who produce products based on this “science” are a vanishing breed. Since they have had little or no employment in the specialty of the mass production of rare earth permanent magnets since the late twentieth century, their numbers have diminished to below replacement level; in other words, the specialty is dead.

Of course, none of this is of interest either to our technologically illiterate governing class (the self-serving aristocrats previously known as politicians), or to their subservient academic mob of backbiting “advisors.” The Field of Dreams, also known as the U.S. Congress, goes by the mantra, “We will fund it, and it will happen. So, let it be enacted, so let Wall Street prosper.”

But, no amount of money, high fashion, good dining, or good looks (Have you ever seen the staffers in the House and Senate office buildings or the young Wall Streeters?) can substitute for legacy engineering, where the older experienced generation of manufacturing engineers has nurtured a younger generation to carry on and avoid the inevitable mistakes and costly dead ends so common to the well educated but inexperienced. Of course, engineering is of no interest to the table-top and bench-scale

“scientists” who plague our society and influence our governors with their innovation and disruptive technology!

The tiny remaining rump of Western rare earth permanent magnet makers are mostly smoke and mirror specialists; they buy magnet alloy “blanks” from Chinese manufacturers and finish them into end-user forms in their non-Chinese home countries. Thus, this makes such products count as “domestic.”

I don’t see how such magnets can pass the “non-Chinese produced mandate of the IRA, so users of them will not qualify for the Bidenomic “tax credits.” And, I suspect, that if the U.S. tax rebate (subsidy) on domestic magnet production now before Congress is enacted, then China will simply terminate the sale of such blanks to foreigners, or for export, cutting off the scam of importing such blanks into the U.S. and calling the magnets then produced domestic.

What’s going to happen if and when the Chinese government declares such exports to simply be “technology” forbidden for export as an impediment to (Chinese) national security?

I think we’re about to find out.