Is China's 'reported' potential ban of rare earth magnet technology a paper tiger?

written by Matt Bohlsen | April 9, 2023

On April 6 Nikkei Asia reported: "China weighs export ban for rare-earth magnet tech. Beijing looks to strike back after Washington's chip restrictions". Some investors may have concerns that this news may potentially severely disrupt western markets as they rely heavily on the Chinese rare earths and magnets supply chain.

The unconfirmed report stated: "*China is considering prohibiting exports of certain rare-earth magnet technology in a move that would counter the U.S.'s advantage in the high-tech arena……The revisions* ***would either ban or restrict exports of technology to process and refine rare-earth elements.*** *There are also proposed provisions that* ***would prohibit or limit exports of alloy tech for making high-performance magnets derived from rare earths****.…….In all, there are 43 amendments or additions in the draft list first announced in December by the commerce and technology ministries. Officials have finished taking public comments from experts, and the changes are expected to go into force this year."*

Note: Bold emphasis by the author.

The rare earths market remains heavily

dependent on China

Remember China produces about 70% of all rare earths globally. Rare earths magnets are a key factor in modern day equipment that uses powerful lightweight electric motors. These range from numerous military applications, smartphones, PCs, to wind turbines and electric motors used in many electric vehicles and also in conventional cars.

If China went further to ban the final rare earths and magnet products, a supply chain disruption could have the potential to cause chaos globally.

Assuming the report is correct and the changes go through, what would be the implications on western markets

Well actually the other is 'nothing' to 'no impact' was the feedback experts shared with me from the Critical Minerals Institute (CMI) Board that I am a new member of, the debate seemed to offer a consensus that this was nothing more than a paper tiger.

My colleagues reason that the West is no longer dependent upon China technology to process rare earths or to make magnet rare earths. In fact, these processes are already being done in the West in multiple locations. For instance, rare earths are refined in Estonia by Neo Performance Materials Inc. (TSX: NEO) and in France by Solvay SA. In Japan, examples ranged, I was reassured that the technology to refine rare earths is well known outside China for both light and heavy rare earths.

While the level of impact ranged in opinions, it was communicated to me that bonded **neodymium magnets** (also known as NdFeB, NIB or Neo magnet), which the the most widely used of the

rare earth permanent magnets, are made in Japan, Korea, the Philippines, Thailand, Germany, the UK and the U.S. Rare earth oxides are converted to metals in Vietnam and Thailand. NdFeB alloys are made in Vietnam, Thailand, Japan, Germany and the UK. The highest performance sintered magnets in the world are made in Japan.

InvestorIntel reached out to rare earths leaders in the Western world for comments

Tracy Weslosky, and Executive Director of the Criticals Mineral Institute (CMI) comment that "Any threat from any country must be taken seriously if only to identify what they are prioritizing. We have a 1.2 trillion EV market demand by 2030 pressing down on the rare earth permanent magnet sector. To build these electric vehicles, finding a magnetic materials such as neodymium (Nd) for instance must be more than identified in the ground, it must be extracted. Qualified professionals, and competitive technologies for what experts describe as a 4-5 step process is much more tech than mining, but all stages clearly rely on each other. Collaborative technologies, and qualified professionals are required and we need more of both."

The CMI Co-Chairman and Co-Founder Jack Lifton, adds: "What we are seeing is 'technology nationalism.' For the entire 21st century China has been whittling away at America's lead in innovative technology as measured by the number of patents granted in each nation. America's legal system prohibits the theft of intellectual property by imposing severe financial penalties on such perpetrators. China's legal system theoretically protects international patent holders from such theft, but in reality, it has always been ineffective and heavily weighted towards the Chinese defendants.

China’s dominance of the supplies and processing into industrially useful forms of the critical minerals for the ten technologies it has targeted for domestic self-sufficiency by 2025 is the reason for the latest move. China does not want the rest of the world to know how close it may be to accomplishing its goal of technological self-sufficiency, so to its unofficial but very real critical minerals resource nationalism it is now adding selected technology nationalism. The ultimate goal, a Chinese economy independent of the rest of the world for resources and technology, is being advanced by deglobalization and the reformation of regional trading blocks.”

Closing remarks

Global supply chains are very interconnected for the vast majority of consumer products made today. This means any threats to this chain send investors into a panic. on this occasion the loss of China ‘processing technology’ for rare earths and magnets is a non-issue. The technology is already out and the leader in magnet technology is in fact Japan, not China. For example, smartphones cannot be assembled in China without imported Japanese and increasingly, Korean rare earth containing components.

Western rare earths experts all agree the Nikkei Asia story is sensational and misleading. There is nothing to worry about says some; however, if China was to go a big step further and ban all rare earths and rare earth magnet exports then everyone agrees, we would have a real problem. This is why the West is moving to build up their own independent supply chains, not only in the rare earths sector, but also across numerous other critical materials and components in the supply chain.