



AM Insight: Heavy rare earth development vital to US

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PITTSBURGH (Asian Metal) 16 Mar 12 – On Tuesday, the US, along with Japan and the European Union (EU), filed an official complaint with the World Trade Organization (WTO) against China. The three bodies claim that China's strict hold over the rare earth industry and the export policies that it has enacted violate the country's commitment to the organization and free trade.

Given the continued increase in volatility of the market, more emphasis should be placed on the development of deposits containing heavy rare earths, which are anticipated to experience the largest growth and remain in shortest supply in the near-term. Development of properties with the potential of having sizeable quantities of these materials is paramount to green energy policy and national defense in the US, as well as economic progress across many industries.

Beginning in January 2012, the US began phasing out the use of incandescent light bulbs, which use more electricity and produce radiant heat. As a result, focus has shifted to the production and sale of light emitting diodes (LED), halogens and fluorescents, some of which use rare earths like yttrium, terbium and europium. Additional similar initiatives abroad should also likely increase the need for heavies to meet demand for lighting, which accounts for approximately 20% of domestic electricity needs.

Also in 2012, China introduced a dichotomy between heavy and light materials, accounting for just 15% of anticipated quotas for the former despite expected upticks in demand. Although LEDs use little-to-no rare earths, fluorescent lights and phosphors are rich in the materials. Dysprosium, used in the manufacturing of permanent magnets, is added to increase temperature resistivity. Such applications like electric and hybrid vehicles use up to 20-25kg of magnets in each car. Although current investigations look to reduce permanent magnet usage in motors, such change-over has not been widespread among manufacturers.

Given the potential severity of a worsening shortage and uncertainty in supply of key elements, such as dysprosium or yttrium, several projects in the US are currently underway to test heavy rare earth content. Some domestic examples include Ucore Rare Metals' Bokan Mountain project in Alaska, Texas Rare Earth Resources' Round Top Mountain site in Texas, and Elissa Resources Thor project in Nevada. These properties account for three among several others that could play a vital role in the nation's supply-chain.

"Surface assays represented ten percent heavy rare earths. If we can [identify] that below in the deposit, it would be very significant. It is very important that the US creates a resource of heavies as the vast majority are coming out of China," Paul McKenzie, President and CEO of Elissa Resources, reported to Asian Metal. "The country is at the mercy of what China will do with its exports and who will get them. If

the supply-chain is interrupted, there is no way around these issues. Many military applications are reliant on China for the supply. [These materials are] critical for economic and military security.”

Despite the apparent need and expected growing demand, consumption of most heavy materials still takes place in China where large manufacturers produce light bulbs, phosphors and flat screens, which will ultimately be consumed in the US. Presently, Sylvania makes halogen lights in a Pennsylvania plant that formerly made incandescent bulbs. In order to promote security of supply of rare earths and the industries that utilize the materials, it is also necessary to promote domestic manufacturing.

“[The federal government] should promote industry and use of these materials here in the US, and make sure that there is a climate that is supportive of keeping these factories open in the US,” McKenzie added.

Al Shefsky, President and CEO of Pele Mountain Resources, recently announced a letter of intent to purchase rare earth claims bordering current producer Molycorp in Mountain Pass, California. At present, Pele’s flagship site is in Elliott Lake, Canada, the only former rare earth producer in the country and once the source of over one-third of the world’s yttrium supply.

“Heavy rare earths are strategically critical for green energy, defense and other high tech applications,” Shefsky reported to Asian Metal. “There will not be enough even after Molycorp goes into production, so they will remain in short supply. I cannot overstate the importance of them being produced in the US.”

“Bokan Mountain is one of the key opportunities in the country. Luckily, the US has good neighbors that are friendly, so that is an opportunity for end-users to work with Canadian deposits to help fast-track development. Canada might be the next producer in North America,” Shefsky added.

As the US, Japan and EU grapple over export policies in China, more emphasis must be placed on developing projects with heavy rare earth potential. Litigation could take years at the WTO. In the meantime, the Asian government is going to pursue a strategy that is beneficial and fruitful for its own people and industry, and that is putting 1.3 billion people to work, as well as increasing high-valued manufacturing within the country.

“I think China will continue to do what is in its best interest. The country is getting so much benefit from its policies by restricting exports, which is causing companies to open manufacturing. There is just too much economic incentive for the country to change what it doing,” explained Shefsky.

With the increased volatility of the industry and uncertainty over future supply, companies have now undertaken investigation at over 400 properties around the world. Several factors will ultimately determine each success, including mineralogy, metallurgy and logistics, such as available infrastructure. Properties with a heavy rare earth potential could likely prove most attractive, as well as light deposits with substantial size or favorable infrastructure and metallurgy.

“Companies that can produce light rare earths cheaply, or those that have a strong representation in heavies, have a significant added advantage,” McKenzie concluded.