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June 8, 2010

Dr. Stephen Chu
Secretary
U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Dear Mr. Secretary,

The Northwest Mining Association (NWMA) appreciates the opportunity to respond to the Department of Energy's (Department) Request for Information (RFI) on the use of rare earths in clean energy technologies. As the Department develops its strategic plan for addressing the role of rare earths and other materials in energy technologies and processes, we would like to stress the critical nature of rare earths and the importance of establishing a domestic rare earths materials and permanent magnet manufacturing supply chain.

NWMA is a 115 year old, 2,000 member, non-profit, non-partisan trade association based in Spokane, Washington. NWMA members reside in 40 states and are actively involved in exploration and mining operations on public and private lands, especially in the West. Our diverse membership includes every facet of the mining industry including geology, exploration, mining, engineering, equipment manufacturing, technical services, and sales of equipment and supplies. NWMA's broad membership represents a true cross-section of the American mining community from small miners and exploration geologists to both junior and large mining companies. More than 90% of our members are small businesses or work for small businesses. Most of our members are individual citizens.

NWMA corporate member Molycorp, Inc. owns the world's largest rare earth project outside of China, and is well positioned to lead the way in establishing a secure domestic supply of critical rare earth materials and magnets. NWMA fully endorses Molycorp's June 7, 2010 response to the Department's RFI.

SUPPLY

Rare earth elements are an essential component in a wide array of emerging technologies. Unfortunately, the U.S. is now dangerously dependent upon one nation – China – for an estimated 97 percent of the rare earths we need. As China continues to signal its intent to reduce its rare earth exports and direct them toward its own aggressive development of renewable energy technologies and to meet their own domestic needs, the U.S. faces a potential shortage of these mission critical resources in as little as three years. By 2011, Chinese export quotas may limit Chinese rare earths to a level lower than rest-of-world demand. Virtually all experts who follow global rare earth supply trends agree that this is a serious threat, with profound implications for America's economic, energy and national security.

The U.S. must be able to compete to attract and retain manufacturing firms that need access to rare earth elements. Given China's near monopoly of the rare earth supply, and their willingness to restrict exports and force manufacturers to locate in China, the only way for the U.S. to ensure steady access to these critical minerals is to mine them here at home as a first step in a mine to magnet product supply chain. A secure domestic supply of rare earth minerals is critical throughout the entire supply chain from mining to processing to manufacturing a finished product.

Molycorp's Mountain Pass, California facility has an existing, robust production capability, a fully developed infrastructure and the high-tech processing facilities needed to ramp up production quickly. In fact, Molycorp is on track to produce sufficient rare earth materials to match or exceed U.S. demand by the middle of 2012.

Re-establishing a U.S. supply of rare earth elements and a domestic rare earth magnet supply chain also will significantly boost the ability of the U.S. to expand our domestic wind turbine manufacturing base, which could lessen our dependence upon foreign manufacturers of wind turbine systems and create thousands of manufacturing jobs here at home in a variety of industries.

Molycorp is working around-the-clock to re-establish a strategically vital U.S. Rare Earth Magnet Supply Chain. Their project involves development and deployment of many new and significantly improved technologies that will set U.S. rare earth material and magnet production apart from that of other nations with regard to environmental performance. Molycorp's breakthrough technologies greatly improve the environmental performance, carbon footprint and system efficiency of the rare earth magnet supply chain.

In fact, Molycorp's Mountain Pass project provides a high-profile example of how the application of cutting-edge environmental mitigation technologies can *decrease*, rather than increase, production costs and make the U.S. cost-competitive, even with China.

Other than rare earth oxide (REO) production from China, the former Soviet Union and Molycorp's Mountain Pass facility, the only other major supply of rare earths that can be expected to come online in the next few years is Australia's Mount Weld deposit.

The ability to economically extract rare earths from any given resource is dependent upon several factors, including ore grade, amenability to concentration, metallurgy, processability, processing costs and the impurities present in the ore.

Notwithstanding Molycorp's team of rare earth scientists and engineers, there is a scarcity of expertise outside of China with regard to the highly complex skills needed to separate and process high-purity rare earth oxides, metals, alloys and products such as permanent magnets. This fact adds significant uncertainty to predictions concerning when other rare earth deposits might be brought online.

DEMAND

Two clean energy applications can be expected to drive significantly higher demand for rare earth elements:

- Permanent magnet generator wind turbines
- Hybrid electric vehicles (HEV), plug-in HEV's and all-electric vehicles

Construction and deployment of wind turbines globally could potentially increase the forecasted demand for rare earth neodymium in 2015 from 35-40,000 tons to 40-45,000 tons, requiring additional processing of about 30-50,000 tons of REO. That additional amount of REO represents between 23 and 39 percent, respectively, of 2010's estimated total global REO production of 127,000 metric tons.

In addition, China has announced a goal of increasing its wind-generated power as well as subsidizing the purchase of energy-efficient vehicles, both of which will place enormous additional strain on the rare earth element supply chain.

In general, each hybrid vehicle uses approximately 10-15-kilograms of rare earths. If production of HEV's, plug-in HEV's and all-electric vehicles increase as many analysts believe, this will drive an entirely new level of demand for many rare earths.

Demand for rare earths traditionally tracks closely with Gross Domestic Product (GDP). China's current and forecast economic growth, coupled with its strategy to encourage (require?) rare earth-dependent manufacturing to locate in China, points to stronger internal demand for China's rare earths, and a continuation of the rare earth export restrictions that China has in place. The Industrial Metals Company of Australia estimates that China's share of global consumption will grow from 60 percent in 2008 to 66 percent in 2015. Demand will grow at a rate of 2 to 4 percent per annum in the rest of the world, compared with 10 to 15 percent per annum in China.

Furthermore, China has announced a national stockpile program, as has South Korea; and Japan has increased its stockpile program. The U.S. Department of Defense is conducting a study, expected to be completed by September 2010, to determine its rare earth requirements and supply chain vulnerabilities and whether to build a strategic stockpile. All of these stockpile programs will likely accelerate the pace of the projected global rare earth element deficit.

Global demand for rare earths is not expected to be mitigated in the near future through substitution strategies or recycling given that rare earths provide a significant amount of the functionality of technologies that utilize them and satisfactory substitutes for rare earths in many applications have yet to be developed after more than two decades of research. Rare earth recycling technologies are still in the earliest research and development stages.

COSTS AND AVAILABILITY

As a result of the global economic crisis, rare earth product prices declined by approximately 50 percent during 2008 and through the third quarter of 2009. According to the industry publication *Metal Pages*, since the beginning of the fourth quarter of 2009 prices have risen by approximately 60 percent.

There are several drivers supporting projected rare earth product price increases over the next twenty years, including but not limited to:

- Projected supply/demand imbalances;
- Production costs;
- Capital costs for mine development;
- Capital costs for processing and manufacturing facilities; and
- Compliance with government regulation.

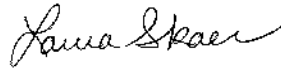
On the supply side, there is the strong possibility of future constraints in global supply, which will provide upward pressure on rare earth material prices.

CONCLUSION

The United States once was the world's preeminent source of rare earth information, technology and expertise but has ceded that advantage over the past decade, as its position in the industry has become subordinate to China and other countries in East Asia. The federal government can play a pivotal role in reestablishing that institutional knowledge and expertise and sharing it with a wider audience of researchers, scholars and practitioners. NWMA believes the Department should include in its strategic plan the establishment of rare earth research facilities in the United States.

Thank you for the opportunity to provide input on the Department's strategic plan for rare earths. Please contact us if we can be of further assistance.

Sincerely,



Laura Skaer
Executive Director