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A CEO's bird eye view of rare earth metals industry in the USA vis-a-vis China's dominance

Presently the USA is way behind China. It likely has a window of a few years to wean itself off its current complete dependence on China; the world's dominant producer of rare earths, a group of 17 minerals used to make consumer products such as computers, televisions, batteries, and electric cars. They are also used to manufacture fighter jets, tanks, and other military equipment. The U.S. Geological Survey claim that the majority of U.S. imports of rare earths come from China. This overdependence is serious. A recent report also suggested that the U.S. is vulnerable to China's rare-earth minerals dominance and claimed that the communist nation could even use its top standing as a geopolitical weapon. The Wall Street Journal in July 2020 cited a report compiled by Horizon Advisory, which said China knows full well that its dominance in rare earths — which are used in the technology, electric vehicle, and even the military industries — is a significant advantage. "China's rare earths positioning both implicates and threatens the entire global system," the report reads. It has wide economic implications. It is not just a national security issue. It's also about the economy and jobs.

It is game on. In July 2020, China raised its mining quota for rare earth minerals by 6.1% in 2020 to a record annual high, the natural resources ministry said, in the effort to ramp up production of the prized minerals. The quotas are closely watched as a supply indicator and typically issued twice a year. The full-year rare earth mining quota has been set at 140,000 tonnes for 2020, up from 132,000 last year and includes 120,850 tonnes of light rare-earth ore and 19,150 tonnes of heavy rare earth ore, the Ministry of Natural Resources said in a notice on Wednesday, Reuters reported. That includes a 66,000-tonne quota granted for the first half of the year and implies a quota of 74,000 tonnes for mining in the second half of 2020, up from 72,000 tonnes the same period in 2019. China has raised the annual quota for three years in a row.

In May 2021, USA Rare Earth completed a Series C Funding round of \$50 million and is now funded through the completion of the Definitive Feasibility Study (DFS), which includes the Pre-Feasibility Study (PFS), the Pilot Plant and a Demonstration Plant to be built at the Round Top site later this year which will include test heap leach pads and continuous ion exchange (CIX) processing.

The Company is also fully funded to re-commission the sintered rare earth permanent magnet manufacturing system that it acquired last year, which was formerly owned and operated by Hitachi Metals America, Ltd in North Carolina, and is the only neo magnet plant of its kind in North America.

Round Top hosts a wide range of critical heavy rare earth elements, high-tech metals, including lithium, gallium, zirconium, hafnium and beryllium. Based on the Preliminary Economic Assessment (PEA) dated August 16, 2019) projects a pre-tax net present value using a 10% discount rate of \$1.56 billion based on a 20-year mine plan that is only 13% of the identified measured indicated and inferred resources. The PEA estimates an internal rate of return of 70% and average annual net revenues of \$395 million a year after average royalties of \$26 million a year payable to the State of Texas. Based on the cost estimates set forth in the PEA, Round Top would be one of the lowest-cost rare earth producers, and one of the lowest cost lithium producers in the world. The Round Top Deposit hosts 16 of the 17 rare earth elements, plus other high-value tech minerals (including lithium), including 13 of the 35 minerals deemed "critical" by the Department of the Interior and contains critical elements required by the United States, both for national defense and industry. Round Top is well located to serve the US internal demand. In excess of 60% of materials at Round Top are expected to be used directly in green or renewable energy technologies. In 2020 USA Rare Earth opened a rare earth and critical minerals processing facility in Wheat Ridge, Colorado and in April 2020 USA Rare Earth acquired the neodymium

iron boron (NdFeB) permanent magnet manufacturing system formerly owned and operated in North Carolina by Hitachi Metals America, Ltd.

The demonstration plant will support the DFS and permitting as well as producing representative materials for evaluation by prospective customers. The Round Top joint venture has received construction storm water permits from the Texas Commission on Environmental Quality (TCEQ) and has commenced a 20,00- tonne bulk sample to support the feasibility studies and the demonstration plant. Being funded for completion of the Round Top DFS is an important milestone for USA Rare Earth, the Project and the United States. “The Demonstration Plant will establish detailed engineering plans and provide representative product samples to support off take agreements with customers. This will enable USA rare earth to expedite bringing Round Top into production and provide the necessary materials for EV’s and advanced manufacturing, including the essential materials for chipsets, semiconductors and 5G, all of which are



Round top rare earth project is located outside El Paso, Texas, USA.
Image from USA Rare Earth.

hosted at Round Top and are the focus of President Biden’s recent executive order.

For more information about USA Rare Earth, visit www.usare.com

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