

# Building the Cornerstone to a Domestic Rare Earth Supply Chain

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- *Proprietary rare earth recovery/separation process advancing to a demonstration-scale plant to produce >99.5% pure Nd/Pr oxide for high-strength permanent magnets*
- *General Atomics, majority shareholder and strategic partner, well known for advancing leading-edge technology into commercial development*
- *Bear Lodge Project – a well-defined, domestic mineral deposit, rich in rare earths critical to magnet technologies used in defense and renewable energy applications*
- *Federal and State support, with Department of Energy (\$21.9M) and Wyoming Energy Authority (\$4.4M) participation in funding the demonstration plant*

Rare Element Resources' (RER) Bear Lodge Project, in northeast Wyoming, is positioned to be a significant North American rare earth elements (REE) producer. The quantity and quality of the mineral deposit at Bear Lodge makes it a world-class mining district, giving it the ability to be a dependable, long-term domestic source of REE. The proprietary technology for REE recovery/separation developed by the Company and being advanced with General Atomics (GA) and its technology partners, has successfully separated REE oxides into saleable products, such as neodymium/praseodymium (Nd/Pr) oxide. Indications are that it will do so with greater efficiency and lower environmental impact than current industry methods. These factors give RER and Bear Lodge the opportunity to be the leading domestic source of the critical REE essential to advanced energy technologies.

## Rare Earths – The Seeds of Technology

Known as “the seeds of technology,” REE make possible today’s technology – from the miniaturization of electronics, to the enabling of “green” and medical technologies, to supporting essential defense, telecommunications, and transportation systems. REE have unique magnetic, phosphorescent, and catalytic properties. In permanent magnets, they radically boost magnetic strength benefiting a wide range of uses.



## Importance of a Reliable Domestic Rare Earth Supply

In 2022, China was responsible for 85% of the world’s refined supply of REE products and 92% of the global magnet products.<sup>1</sup> Because of REE importance in both defense applications and technology advancements, this monopoly has raised significant concern. In February 2021, President Biden’s administration acknowledged that developing U.S. sources of REE is a matter of national security.

<sup>1</sup> U.S. DoE Report, “Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment,” 2/24/22

## Bear Lodge Positioned to be a Secure Rare Earth Source

A domestic supply chain must start with a world-class mineral deposit. The Bear Lodge Project fits the bill.

- **Outstanding Mineralized District** – Not only does the Project have a well-defined and drilled mineral asset, it is also one of the highest-grade deposits for critical magnet REE – Nd/Pr. These elements are expected to see the largest demand growth over the next 10

Rare Element Resources and its partners, through development of the Bear Lodge Project, are striving to become the cornerstone of a domestic REE supply chain, providing a consistent, high-quality source of critical components to advanced technology applications.

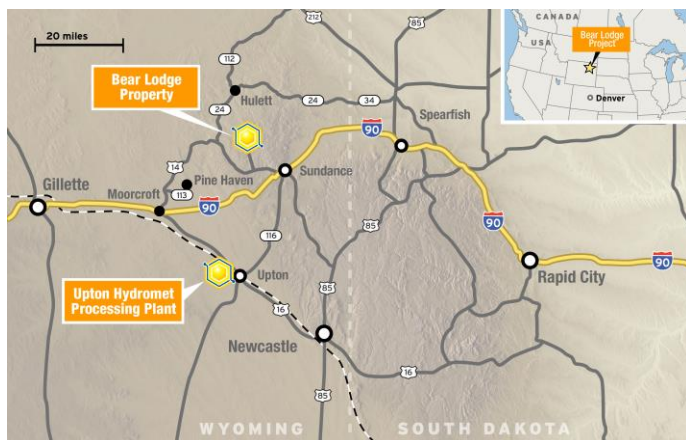
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years due to their importance in green technologies, like electric vehicles and wind turbines.

- **High-Grade Zone** – An identified near-surface, high-grade zone, if mined initially, would accelerate early cash flows.
- **Additional Targets Already Identified** – Exploration drilling has been done on two additional targets located within RER’s claims. These targets represent excellent potential to extend the Project’s life.
- **Exceptional Location** – Wyoming’s rich history of mineral development and pro-business focus makes it an excellent location. It also had a readily available, skilled workforce and business-friendly tax climate. In 2022, the Wyoming Energy Authority (WEA) granted \$4.4M in support of the demonstration plant. This strong statement of support demonstrates Wyoming’s ongoing commitment to job creation and diversification, both well represented by the demonstration plant and the Bear Lodge Project.



- **Excellent Existing Infrastructure** – easy access to a major interstate, transcontinental rail, natural gas, water and low-cost power.
- **Permitting Work** – Significant work had been done, and relationships built, by RER while pursuing permits for the Bear Lodge Project prior to the decision to suspend activities in 2016 due to market conditions. RER believes these efforts will set a good foundation when permitting work resumes.

## Leading Edge Technology and Outstanding Partners

In 2017, an affiliate of General Atomics (GA), one of the largest, most advanced technology companies in the world, took an equity position in RER. As a leader in new technology development, both commercially and for national security, GA is aware of the importance of developing a secure, domestic supply of critical REE. RER, our proprietary recovery process and the Bear Lodge Project are the cornerstones of their efforts.

Since then, GA and its partners have brought the full force of their technology development team to refine and enhance the recovery/separation process. In 2020, the first high-grade, separated REE product was produced from Bear Lodge material. This was done at a lower cost and in a more environmentally sound way than traditional industry methods.

In pilot plant testing, the first two steps of the process upgraded the sample to 92%-97% REE. Next the radionuclides, naturally occurring with REE, were reduced to below regulatory standards and the cerium was removed. The final step, a high-efficiency solvent extraction process, produced a >99.5% pure Nd/Pr oxide with other REE oxides amenable to further processing.

## Advancing Rare Earth Demonstration Plant Plans

Because of this success, the decision was made to proceed to demonstration scale with design, construction, and operation of a plant in Upton, WY. A previously stockpiled sample from the Bear Lodge Project will provide feed, and the data collected will confirm scalability and create the framework for commercial plant development.

Design work is complete, long-lead time equipment is being procured and permitting and licensing are advancing. Construction is expected to begin later in 2023, following receipt of the final operating license. DoE and WEA funding are expected to cover over half of the cost of construction. Once in operation, the plant is projected to produce up to 15 tons of high-purity Nd/Pr oxide.

This document contains forward-looking statements within the meaning of U.S. and Canada securities legislation. Except for historical fact, certain information constitutes forward-looking statements, and are based on assumptions and analyses made by us in light of our experience and perception of historical trends, current conditions, expected future developments, and other factors that we believe are appropriate. Such forward-looking statements involve risks, uncertainties and other factors which may cause actual results or achievements to be materially different from future results or achievements expressed or implied. These risks and uncertainties include those described in the "Risk Factors" section of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, and our quarterly and other filings with the Securities and Exchange Commission, which are incorporated by reference in this presentation. Certain information herein has been obtained by us from our own records and from other sources deemed reliable, however no representation or warranty is made as to its accuracy or completeness. Mineralized asset information is derived from our historical 43-101 and must be updated to be deemed reliable.