OTCQB: REEMF

Rare Element Resources

Upton Open House

Rare Earth Demonstration-Scale Processing and Separation Plant and the Bear Lodge Project

Progress Update

October 2023

Disclaimer

This presentation contains forward-looking statements and forward-looking information (collectively, the “forward-looking statements”) within the meaning of securities legislation in the United States and Canada. Except for statements of historical fact, certain information contained herein constitutes forward-looking statements. Forward-looking statements are usually identified by our use of certain terminology, including "will", "believes", "may", "expects", "should", "seeks", "anticipates", "plans", "has potential to", or "intends" (including negative or grammatical variations thereof) or by discussions of strategy or intentions. Such forward-looking statements include statements regarding our vision and strategic near-term and longer term objectives, the planned progress of our rare earth demonstration plant, including the likelihood of the continuation of the financial award from the U.S. Department of Energy or grant from the Wyoming Energy Authority/State of Wyoming and ability to progress through go/no-go decision points, the planned demonstration plant timing, cost and expected outcomes, plans to advance toward full-scale production, current and future demand and supply affecting the rare earth element markets, and other aspects of our business and our prospects as well as those of industry participants.

Our forward-looking statements are based on assumptions and analyses made by us in light of our experience and our perception of historical trends, current conditions, expected future developments, and other factors that we believe are appropriate under the circumstances. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause our actual results or achievements to be materially different from any future results or achievements expressed or implied by such forward-looking statements. These statements are subject to numerous known and unknown risks and uncertainties that may cause actual results to be materially different from any future results or performance expressed or implied by the forward-looking statements. 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, 2022, and our quarterly and other filings with the Securities and Exchange Commission, which are incorporated by reference in this presentation. Many of the forward-looking statements in this presentation relate to events or developments anticipated to occur numerous years in the future, which increases the likelihood that actual results will differ materially from those indicated in such forward-looking statements. The forward-looking statements made in or in connection with this presentation speak only as of the date hereof. Except as required by law, we disclaim any obligation subsequently to revise any forward-looking statements to reflect events or circumstances after the date of such statement or to reflect the occurrence of anticipated or unanticipated events. Certain information contained in this presentation has been obtained by the Company from its own records and from other sources deemed reliable, however no representation or warranty is made as to its accuracy or completeness.

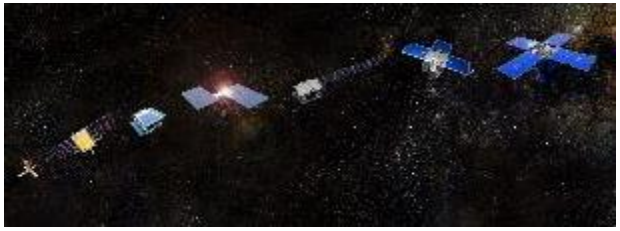
The technical information relating to the Project disclosed herein is based upon a historical technical report prepared and filed pursuant to National Instrument 43-101 – Standards for Disclosure of Mineral Properties (“NI 43-101”) and other publicly available information regarding the Company, including the Company’s technical report entitled, “Pre-Feasibility Study Report on Reserves and Development of the Bull Hill Mine, Wyoming,” filed on October 10, 2014, available on the Company’s website and under its profile at www.sedar.om (“SEDAR”). This historical technical information must be update and should not be deemed current or reliable.

World-Class Technology Team

GENERAL ATOMICS

A leading global defense and diversified technologies company operating on five continents; affiliate of GA is RER's majority shareholder

Aircraft Launch & Recovery



Space Systems & Technology

Missile Defense

U.S. DEPARTMENT OF ENERGY

Mission is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions

UIT UMWELTLEISTUNGEN

A part of GA's global network who brings innovation, experience and creativity to projects worldwide

LNV an Arcadis Company

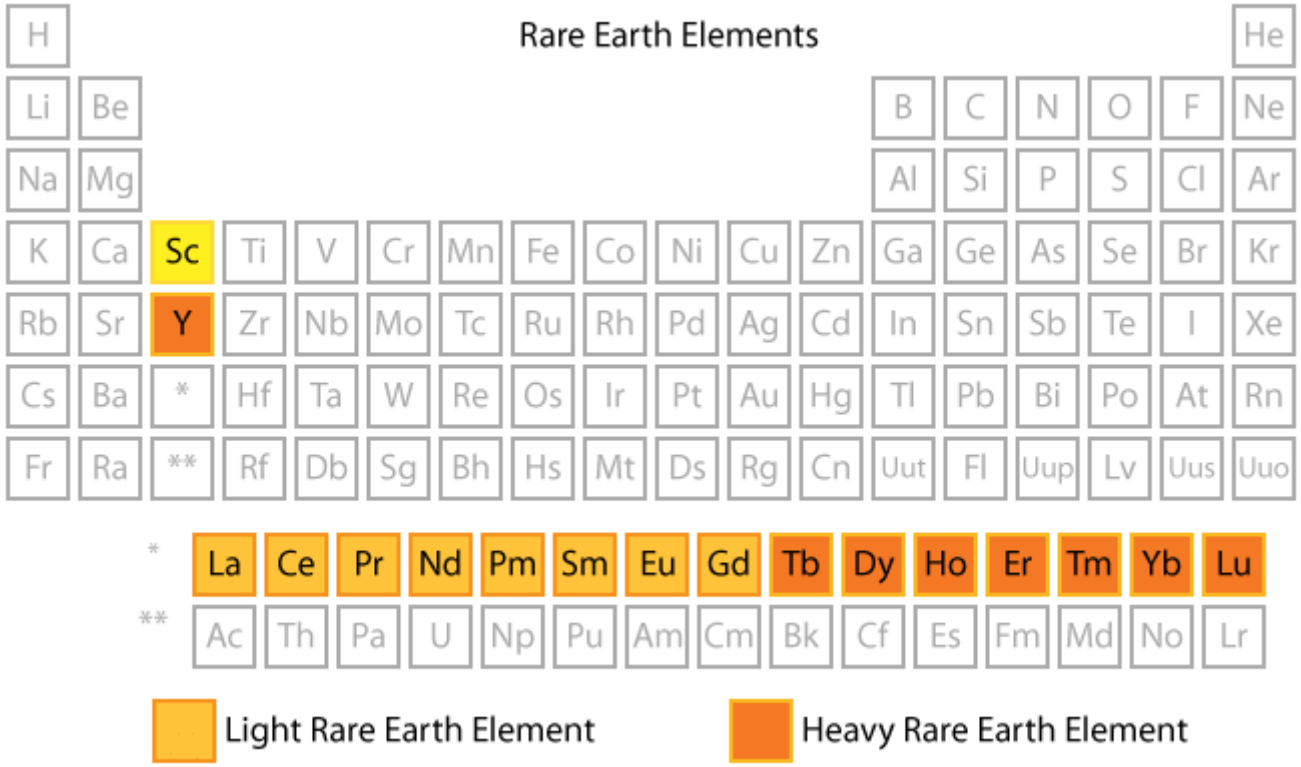
A multi-discipline team of experts, engineers, and design professionals dedicated to delivering a unique balance of experience and innovation

Rare Earth Supply Chain

- What are rare earths?
- What are they used for?
- Where do they come from?
- How does this relate to future-facing technologies?
- How is the rare earth market different from others?
- What are critical minerals / materials?
- What could this mean for Wyoming?

Rare Earth Elements

- Defined by their location in the periodic table
- Lanthanides with the addition of scandium and yttrium



Rare Earth Element Applications

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MAGNETICS

Computer Hard Drives
Disk Drive Motors
Anti-Lock Brakes
Automotive Parts
Frictionless Bearings
Magnetic Refrigeration
Microwave Power Tubes
Power Generation
Microphones & Speakers
Communication Systems
MRI

Nd Tb Dy Pr

METAL ALLOYS

NiMH Batteries
Fuel Cells
Steel
Super Alloys
Aluminum/Magnesium

Nd Y La Ce Pr

DEFENSE

Satellite Communications
Guidance Systems
Aircarft Structures
Fly-by-Wire
Smart Missiles

Nd Eu Tb Dy Y Lu Sm Pr La

CATALYSTS

Petroleum Refining
Catalytic Converter
Fuel Additives
Chemical Processing
Air Pollution Controls

Nd La Ce Pr

GLASS & POLISHING

Polishing Compounds
Pigments & Coatings
UV Resistant Glass
Photo-Optical Glass
X-Ray Imaging

Nd Gd Er Ho La Ce Pr

CERAMICS

Capacitors
Sensors
Colorants
Scintillators
Refractories

Nd Y Eu Dy Lu Gd La Ce Pr

PHOSPHORS

Display phosphors-
CRT,LPD,LCD
Fluorescents
Medical Imaging
Lasers
Fiber Optics

Nd Eu Tb Y Er Gd Ce Pr

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, June 2020

China's Dominance – An Economic & Security Risk

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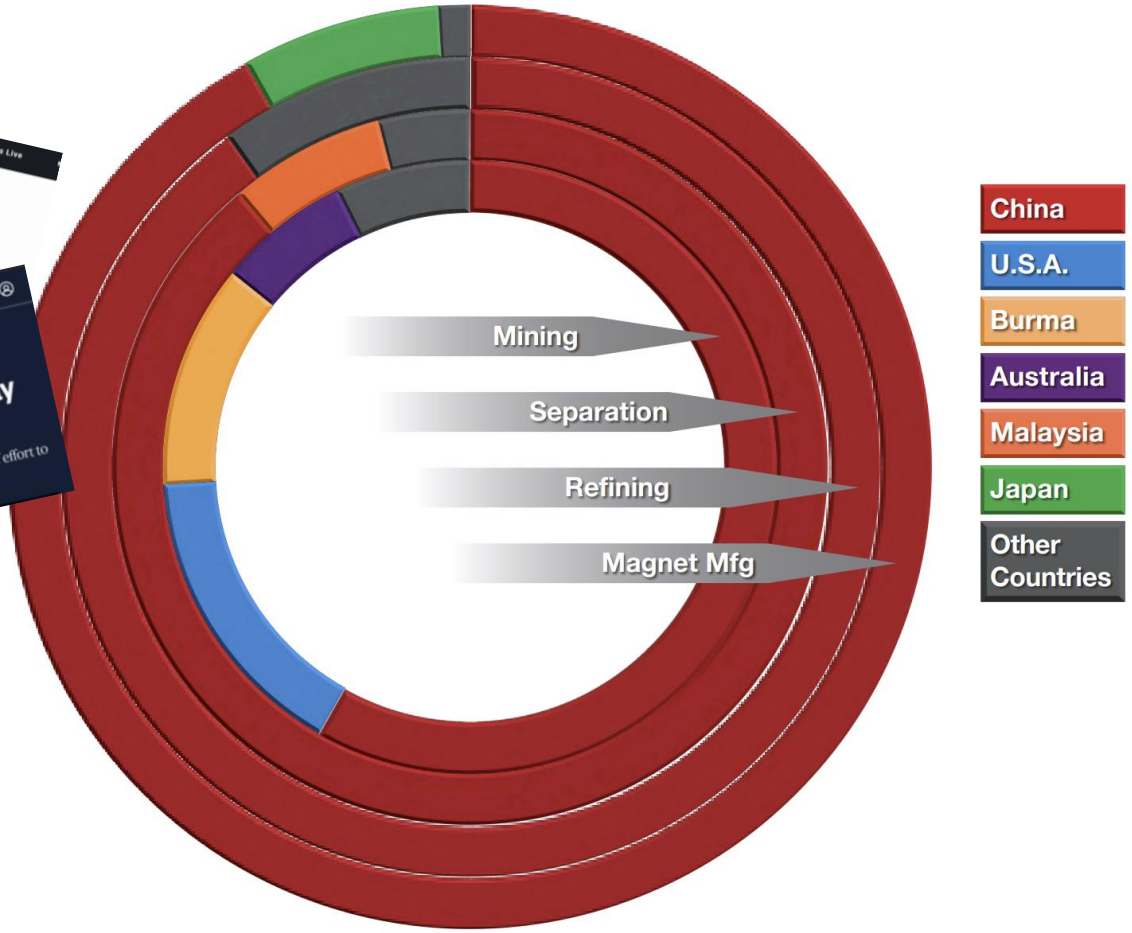


Geographical concentration of supply chain stages for sintered NdFeB magnets
From center: Rare Earth mining, oxide separation, metal refining, & magnet manufacturing*

** US DOE Report, "Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment" 2/24/22*

Growing REE End Uses

REEs Critical for Essential and Rapidly Growing Technology

Computers

Cloud Technology

Multi-billion-dollar market for high intensity magnets

Defense

Aircraft Parts

High-Speed Transit

MagLev Technology

Vital inputs for vast range of future-facing products

Automotive

Cars, HEVs, EVs

Green technologies will drive significant growth in demand[1]

Energy

Wind Turbines

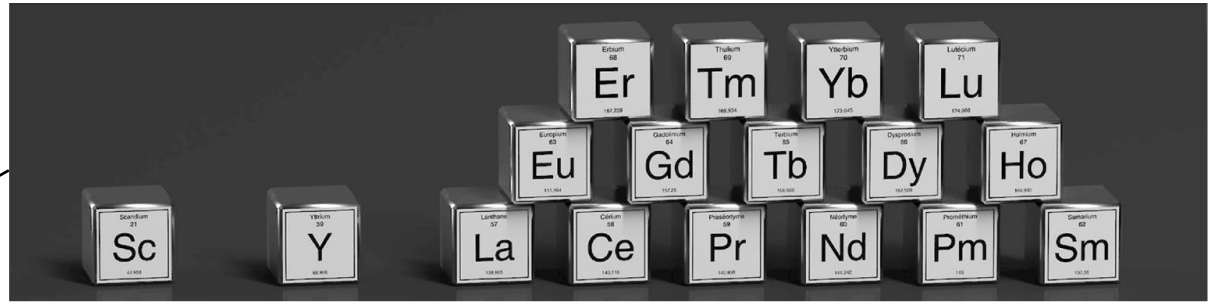
[1]*Wood Mackenzie, Global Rare Earths Short-Term Outlook February 2023*

Rare Earth Markets

World Production 2022*

(in Metric tons)

Iron ore 2.6B
Aluminum 69M
Copper 26M
Manganese 20M
Nickel 3.3M
Rare Earths 300K
Cobalt 190K
Lithium 130K
Gallium 0.6K
Rhenium 0.1K



** US Geological Survey, Mineral Commodity Summaries 2023*

Materials Critical to Clean Energy Technologies

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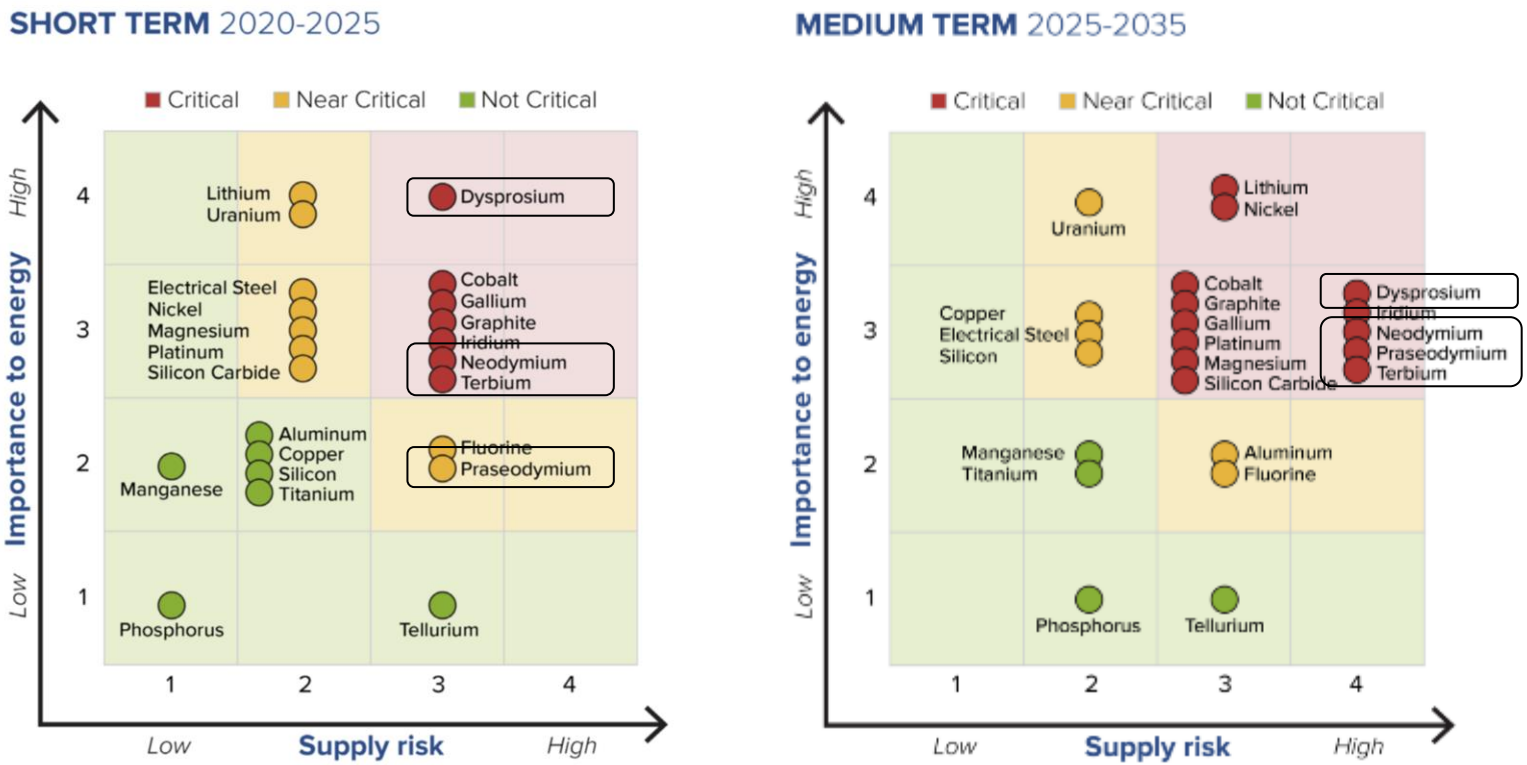
DOE Criticality Matrix*



Report focused only on those materials critical to clean energy technologies

* U.S. DOE, Critical Materials Assessment 2023, July 2023

Decarbonization Goals to Drive Significant Demand

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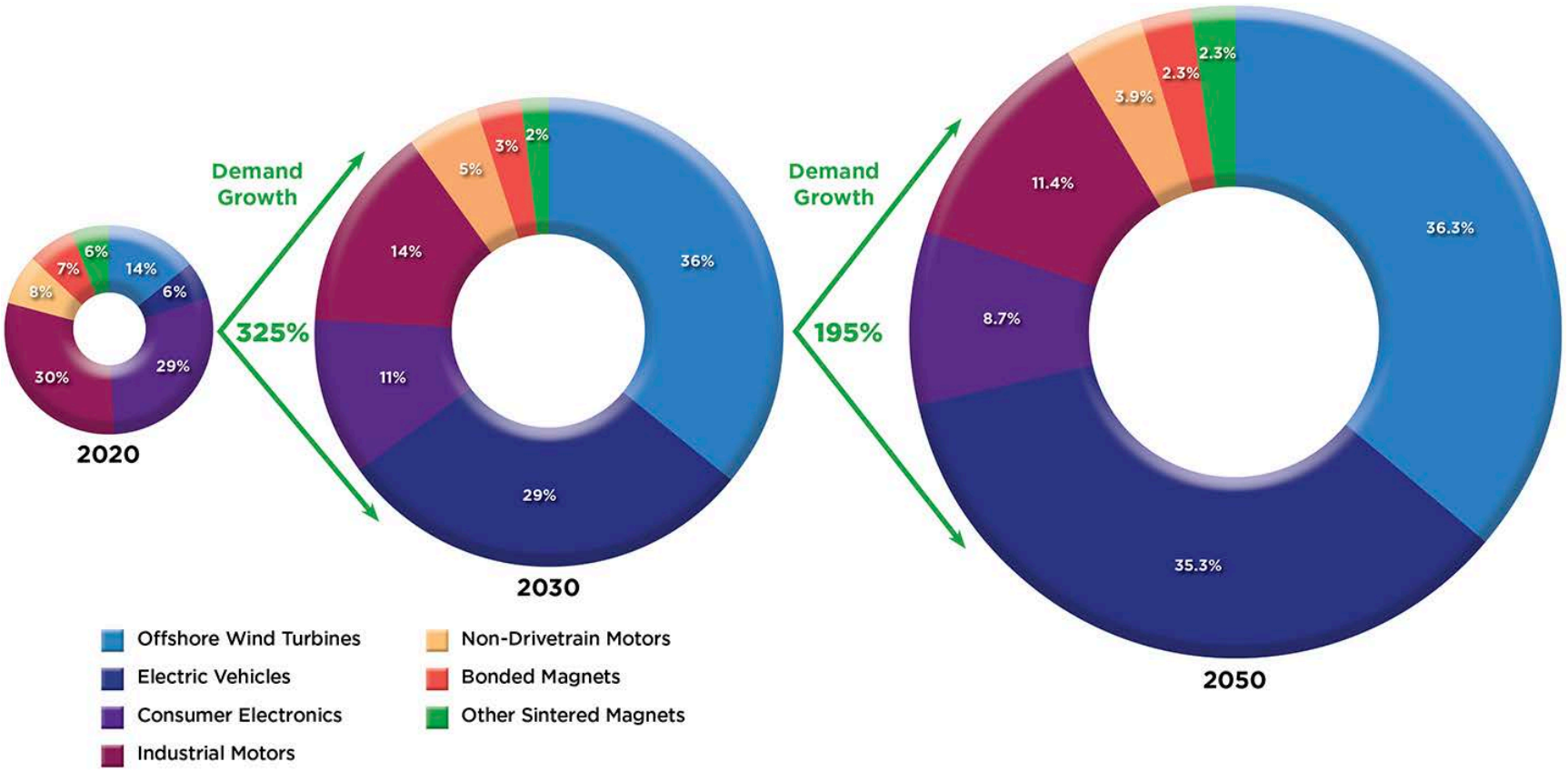
Unprecedented Projected Demand Growth for Rare Earth Magnet Materials*



Department of Energy Participating on Recovery & Separation Demonstration Plant

** US DOE Report, "Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment," 2/24/22. Based on NdFeB demand*

Significant Diversification Opportunity

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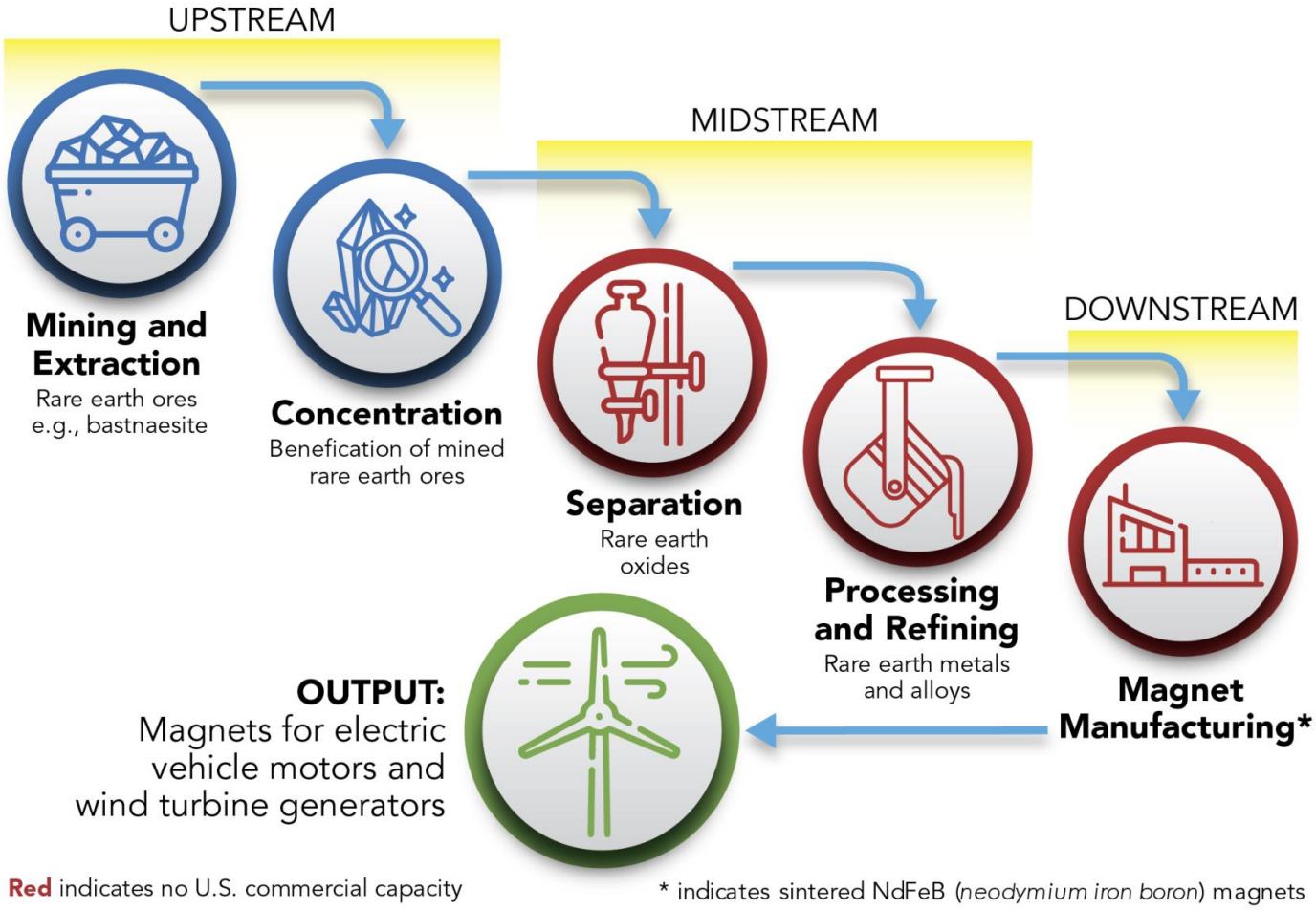
Mining to Magnets



DOE Advanced Manufacturing Office – Achieving American leadership in the Rare Earth Magnets Supply Chain, 2/24/22

Bear Lodge Project

Cornerstone of A
Domestic Rare Earth Supply Chain

Exceptional Location

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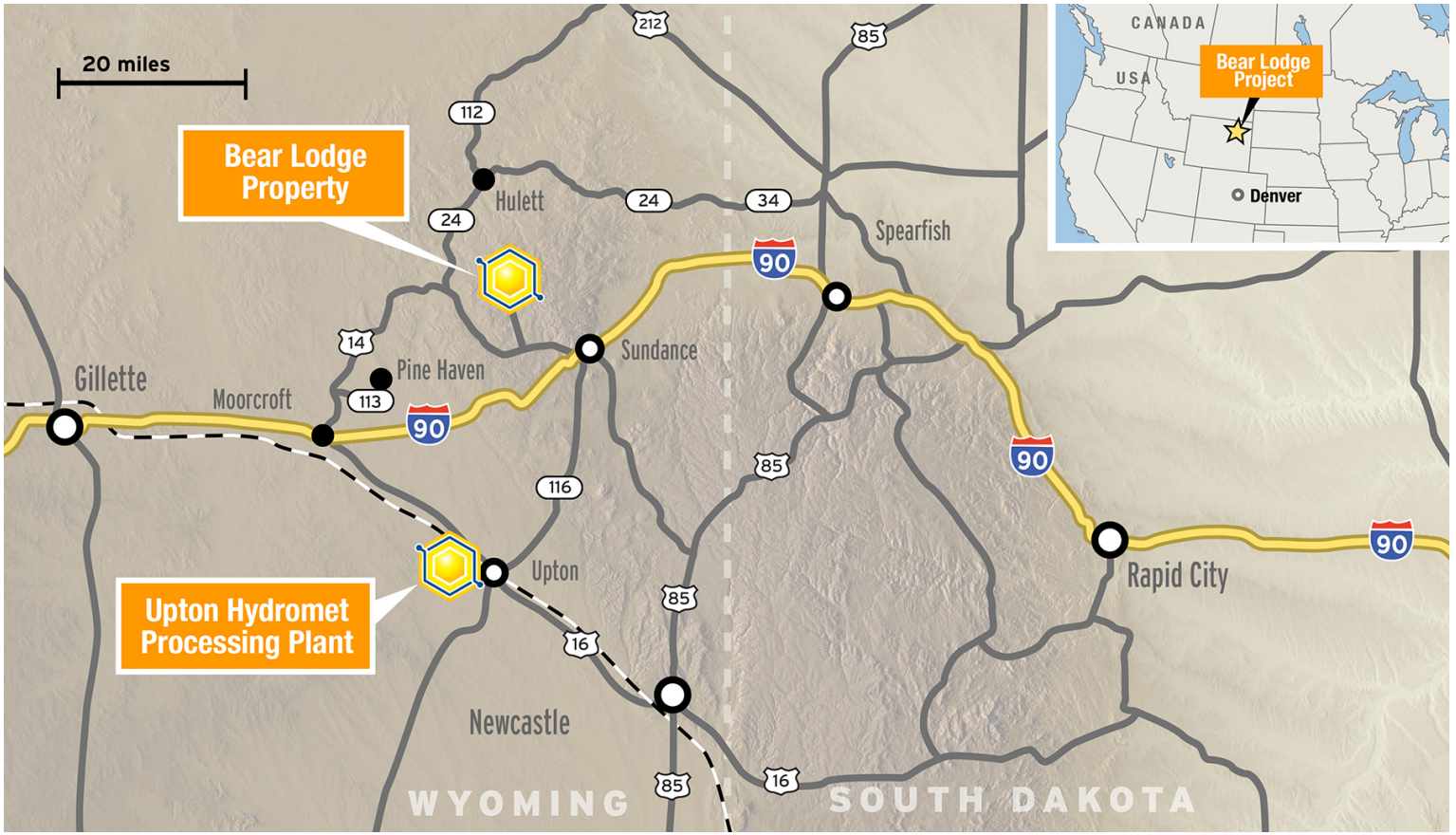
Infrastructure in Place

Power / Energy / Ready and Able Workforce



Rich in Magnet Materials

- Most advanced resource in state
- Over 500 holes drilled resulting in 285,000 ft of core evaluated
- A high-grade Nd/Pr oxide deposit
- High-grade zone will boost returns in early years
- Additional targets already identified for potential expansion

Bear Lodge Project Mineralized Material Projected Distribution by Weight**

Rare Earth Elements	Distribution by Wt
Neodymium (Nd)*	17.9%
Praseodymium (Pr)*	4.9%
Dysprosium (Dy)*	0.5%
Terbium (Tb)*	0.1%
Samarium (Sm)	3.0%
Magnet Materials	**26.4%**
Europium (Eu)	0.7%
Yttrium (Y)	1.3%
Cerium (Ce)	43.0%
Lanthanum (La)	26.8%
Gadolinium (Gd)	1.6%
Other REEs***	0.2%
Total Rare Earth Oxides	100.0%

**Identified magnet materials per U.S. DOE, Critical Materials Assessment 2023, July 2023. Sm included because of its use in samarium/cobalt magnets.*
***Allocation based on RER's historical technical report prepared and filed pursuant to National Instrument 43-101 - Standards for Disclosure of Mineral Properties ("NI 43-101") and other publicly available information regarding the Company, including the Company's technical report entitled, "Pre-Feasibility Study Report on the Reserves and Development of the Bull Hill Mine, Wyoming," filed on October 10, 2014, available on the Company's website and under its profile at www.sedar.com ("SEDAR"). The historical technical information must be updated and should not be deemed current or reliable.*
**Other REEs include Holmium, Erbium, Thulium, Lutetium, Scandium and Ytterbium*

Demonstration-Scale Processing and Separation Plant

Advancing Innovative
Processing and Separation Technology

Project Objectives

Provide a Basis for Scale-up to, and Economic Assessment of, a Commercial Capacity Plant

- Demonstrate the separation of NdPr and other REEs at high purity
- Produce up to 15 tons of NdPr at >99.5% purity as well as La, SEG & heavy rare earth element concentrates, which would be subject to further refining
- Provide clear pathways for the separation of other rare earths, including Sm, Dy, and Tb
- Demonstrate a process capable of treating REO concentrate from other sources, either in the US or obtained as a result of initiatives from allied countries

Process Advantages

#1

92 – 97% recovery of from run-of-mine material

#2

High-efficiency solvent extraction producing >99.5% pure Nd/Pr and other rare earth oxides

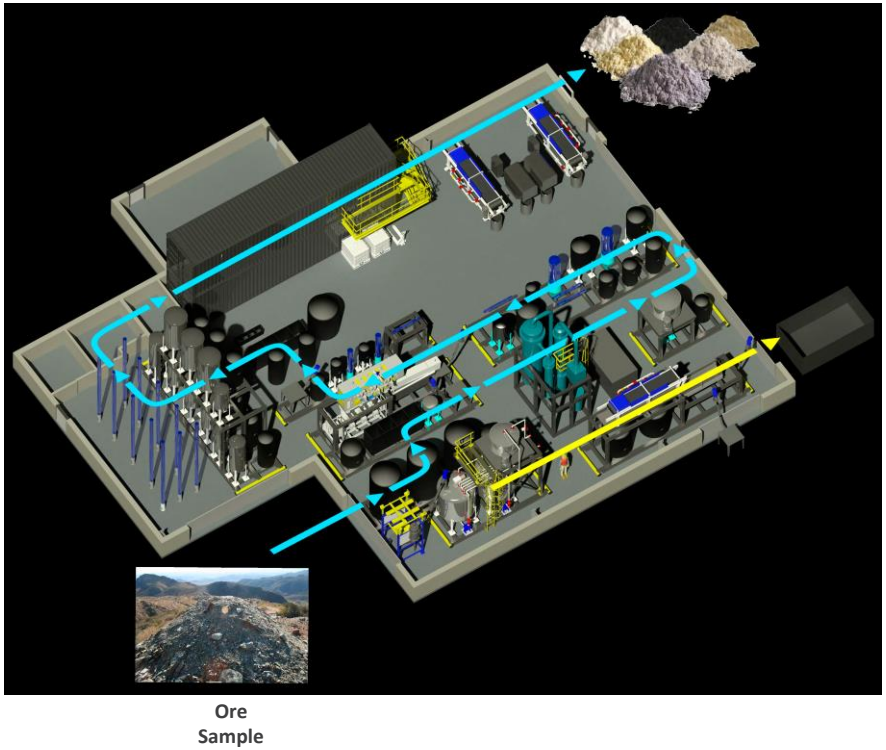
#3

First-of-a-kind, real-time control software for process optimization

#4

100% separation of radionuclides for disposal at licensed facility

Production of High-Purity, Critical Rare Earth Minerals



Project Related Activities

- Design complete
- Process modeling and economic assessment complete
- Delivery and assembly of long lead time process equipment underway
- Site clean up completed
- Key NRC license secured
- Bear Lodge road access upgrades completed
- Expect DOE NEPA review to be completed shortly
- Expect DOE approval of construction and operating budget in Oct/Nov

Oxalic Acid Reactor

Chemical Holding Tanks

Centrifuge, Primary Process Reactors

Project Timeline

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Task	2021	2022				2023				2024				2025		
REE Demonstration Plant	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Design & Engineering																
Procurement																
Construction																
Operations											8-10	months				
Decommissioning																

- Offsite integrator fabricating skids with equipment
- Plant construction expected to take ~7 months
- Equipment on site by end of March
- Operations anticipated to start in 2Q24 and planned for 8 to 10 months

Demonstration Plant Location- Upton, Wyoming

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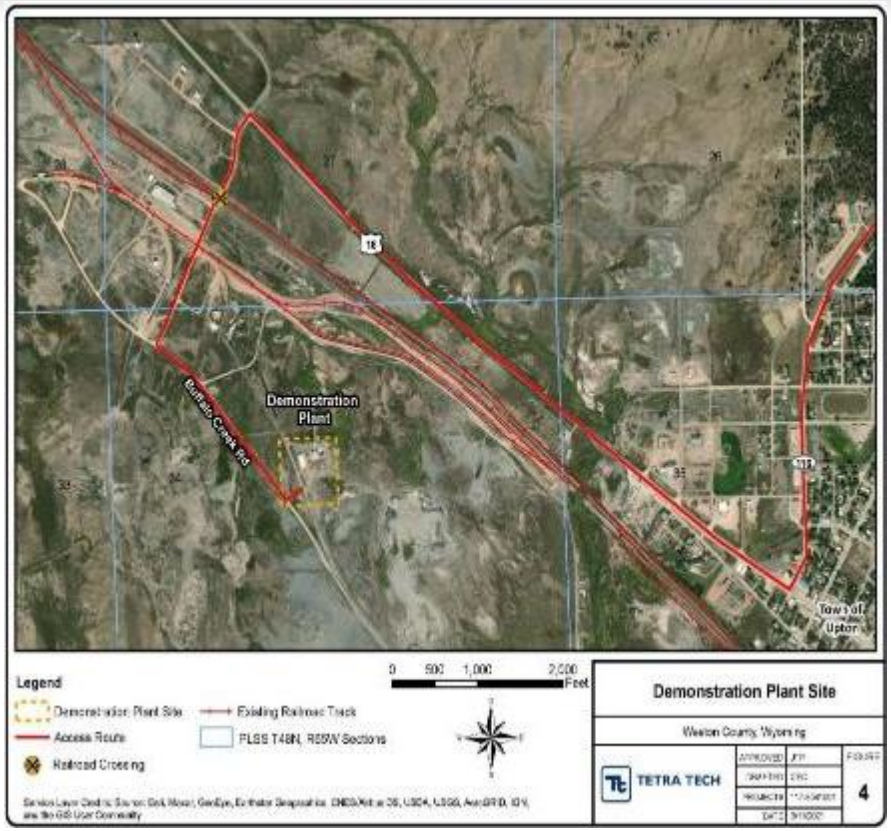

- Upton Logistics Industrial Center - 8.2 Acre Brownfields Site
- Site clean up completed, utilities being upgraded
- ~15 demo plant employees expected to transition to commercial operations

The Future of Critical Minerals Extraction

Building the Cornerstone for a Secure, Domestic REE Supply Chain

- Advanced innovative REE recovery technology being further refined through demo plant operations
- Strong technology partners advancing technology while providing access to federal agency participation
- Premier North American deposit, high in the REEs critical to addressing growing demand for magnet materials
- Exceptional location with existing infrastructure, low-cost power and available skilled workforce
- Demonstrated support from state and local officials with long-term vision of a diversified economic base for Wyoming