

Bear Lodge Critical Rare Earth Project

Developing a Secure, Domestic Supply of Critical Rare Earth Products for High Tech Applications



Corporate Update

March 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 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.

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Company Strengths

Developing the Cornerstone to a Secure, Domestic Rare Earth Supply Chain to Support Critical, High Tech Applications

Bear Lodge (WY) has a well-defined resource with excellent concentrations of critical rare earth elements (REEs) essential to magnet material technology

World-class, technology-leading majority shareholder, a General Atomics (“GA”) affiliate, partnering on advancing proprietary REE recovery/separation process

Strong Federal and State support, including over \$26M in funding for demonstration plant

REE fundamentals continue to improve especially for non-Chinese producers as allied countries look for secure supply sources mined responsibly

Experienced management team and partners continue to derisk project by scaling up technology up through demonstration plant

RER is an Emerging REE mineral development company with Proprietary Technology for Recovery & Separation

Vision:

To become a long-term, secure, reliable and sustainable domestic source of separated REEs

Near-Term Objective:

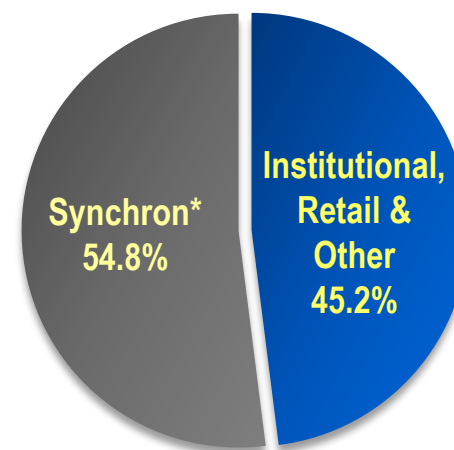
Successfully develop REE processing and separation demonstration plant project, utilizing proprietary technology, while advancing the Bear Lodge Project as a world-class, domestic resource of strategic REE materials

Capital Structure

Ticker	REEMF
OTCQB trailing 3-mth. daily trading average	87,900
Common shares outstanding	212,515,951
Common shares subject to options	5,180,000
Fully diluted shares	217,695,951

Current Financials	September 2022
Cash and cash equivalents	\$18.81M
Current liabilities	\$0.59M

Ownership



* General Atomics' affiliate, owns 116.4M shares



General Atomics is a global leader in the research, design and manufacturing of first-of-a-kind technology innovations

- ◆ Became separation technology partner in 2017 through share acquisition
- ◆ Vision to secure a domestic supply of REEs to support their extensive future-facing technologies, both defense and commercially related
- ◆ Dedicated team focused on advancing technology and working with management on the development of the Bear Lodge Project
- ◆ Enhanced process by successfully completing and improving extensive pilot plant testing
- ◆ Strong governmental relationships critical in securing \$22M federal funding for demo plant in 2022
- ◆ Completed demo plant design work and received “go” decision in late 2022



Addressing the Issue of Security of Supply while Sourcing REEs through Environmentally Responsible Development

Scott Forney, President, General Atomics Electromagnetic Systems:

On supply chain disruptions of critical materials - “General Atomics can and does invest and manage many of these issues as we deliver products on time to support America’s warfighters”*

On the role of Bear Lodge in the supply chain - “RER’s Bear Lodge deposit is endowed with critical rare earth elements essential for high-strength permanent magnets, electronics, fiber optics, laser systems for health and defense, and commercial technologies such as electric vehicles, solar panels, and wind turbines.”**

On the advantages of the development team - “Along with RER and our partners, this team brings the resources, experience and technologies together to efficiently design, construct and operate a facility for the separation and processing of rare earth ore to meet the nation’s requirements.”**

**Testimony before the US Senate Committee on Energy & Natural Resources 4/7/22*

***General Atomics news release of March 16, 2021.*

Overview of Market Conditions

REE Materials Critical for Rapidly Growing Technology Uses

Automotive

Cars, HEVs, EVs

Vital inputs for vast range of future-facing products



Multi-billion-dollar market for high intensity magnets

Energy

Wind Turbines



Direct-drive wind turbines to be one of biggest drivers of future demand*

Defense

Aircraft Parts



80% of REEs used in US between 2016 and 2019 from China**

Computers

Cloud Technology



A domestic supply is critical to US interests

High-Speed Transit

MagLev Technology



*Source: Wood MacKenzie, Jan 2022

** Source: U.S. Geological Survey in S&P Global Market Intelligence, February 25, 2021

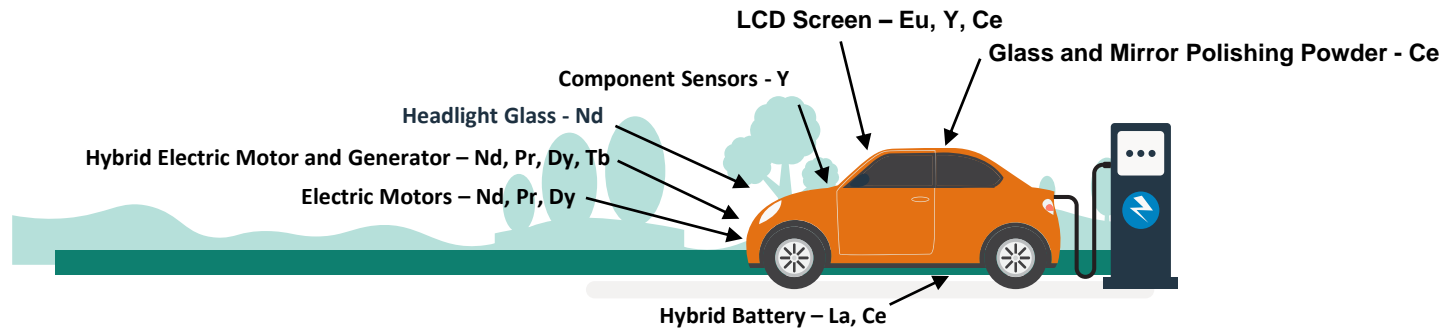
Example - EVs Driving Demand

Rare Earth Elements are Essential to Hybrid-Electric and Electric Vehicle Technology

Critical REE

- Nd – Neodymium
- Eu – Europium
- Dy – Dysprosium
- Tb – Terbium
- Y – Yttrium
- Pr – Praseodymium

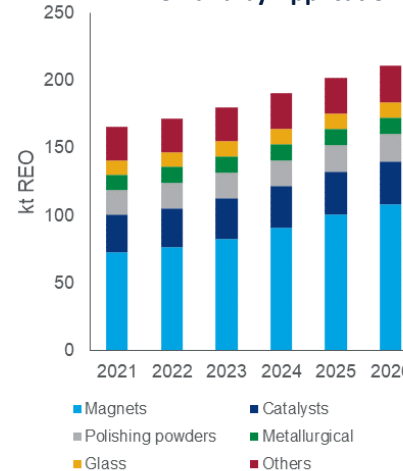
- Ce – Cerium
- La – Lanthanum



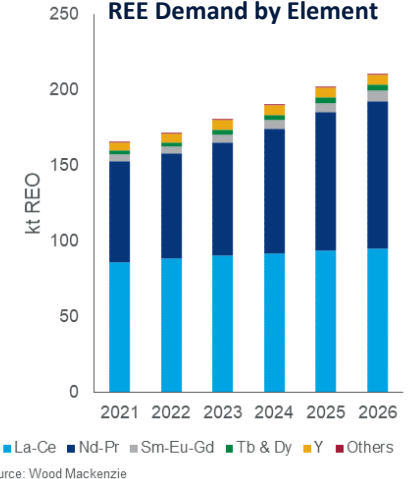
- ◆ Mandate for sustainability and energy efficiency will drive REE demand growth
- ◆ Environmental responsible sourcing will become key as sector grows
- ◆ REEs are recyclable and can be reused

* S&P Global Mobility

REE Demand by Application



REE Demand by Element

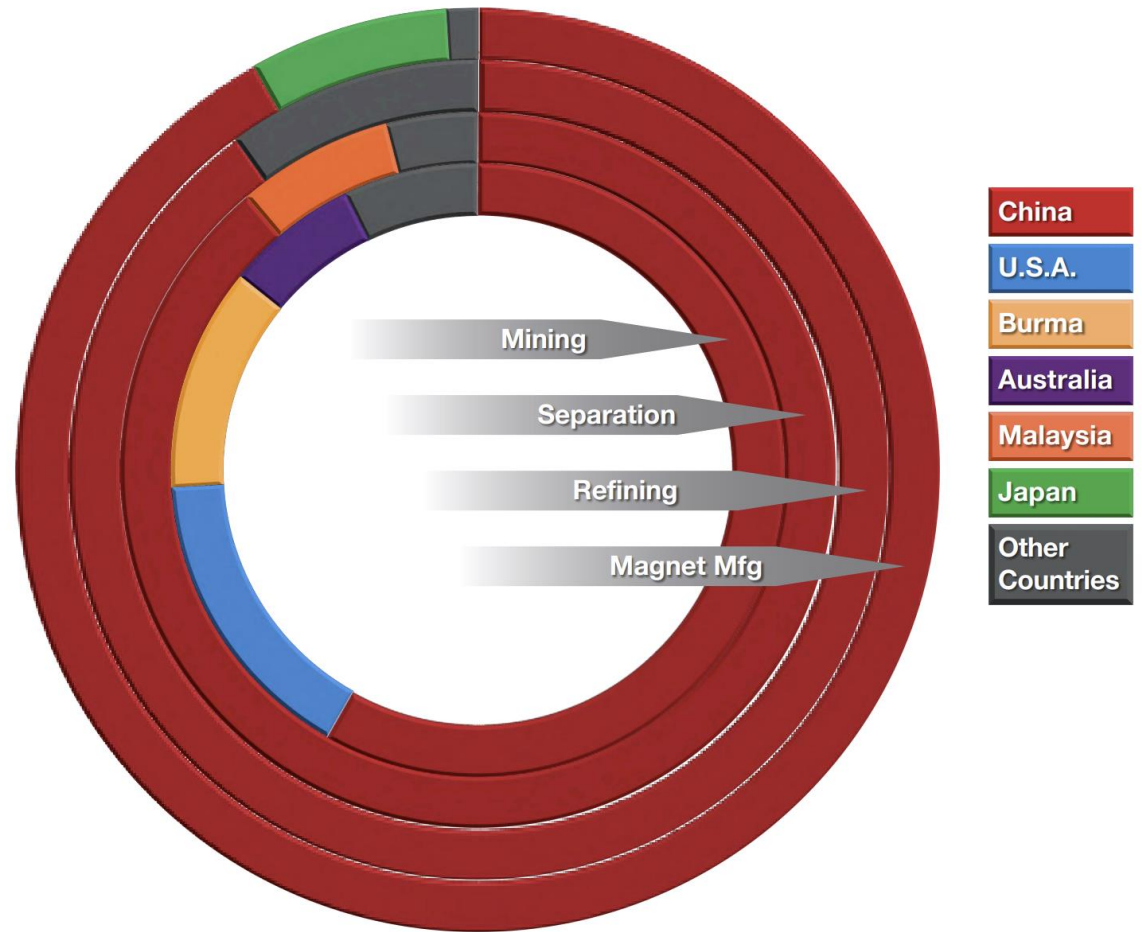


Source: Wood Mackenzie

Source: Wood Mackenzie

China Dominance – Risk to Supply

- ◆ No US source for separated or refined REEs
- ◆ Geopolitical/trade issues could make availability risky for key defense and “green” applications
- ◆ China only now instituting any environmental controls
- ◆ Portion of Chinese supply from illegal, completely unregulated sources
- ◆ China has recently become a net importer of mined REE materials*



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

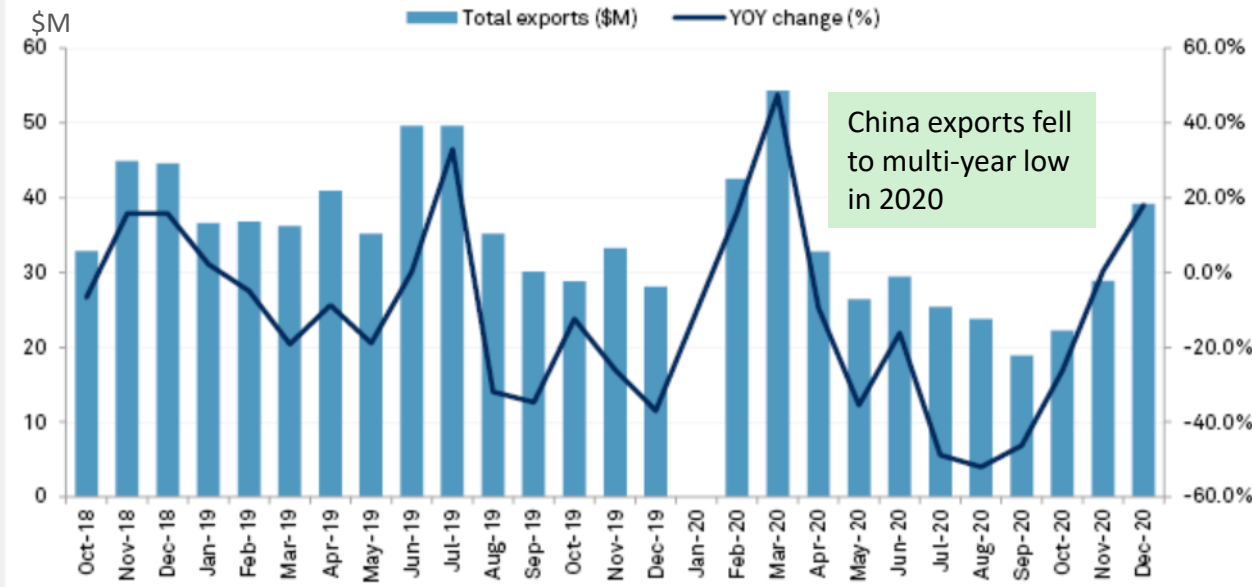
* Wood McKenzie, Jan. 2022

** US DoE Report, “Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment,” 2/24/22

China Exports Volatile



Chinese exports of rare earths

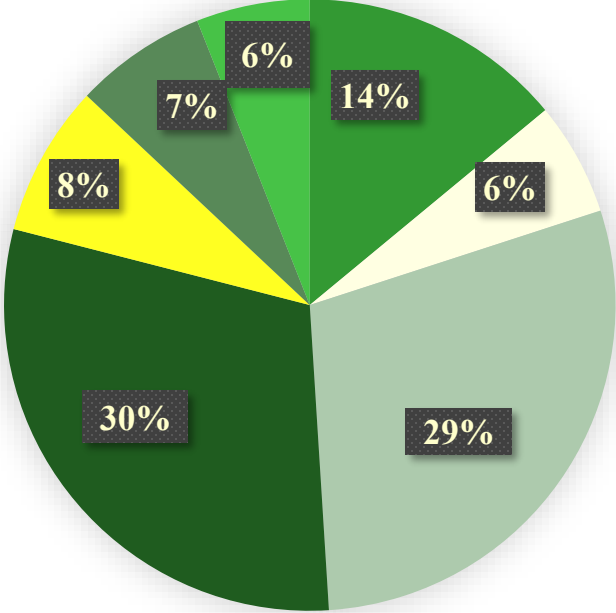


Data accessed Feb. 24, 2021.
Data from China General Customs Administration figures.
The Chinese government published January and February 2020 figures on a combined basis due to COVID-19.
Source: Panjiva, a business line of S&P Global Market Intelligence

Chart source: S&P Global Market Intelligence, February 25, 2021

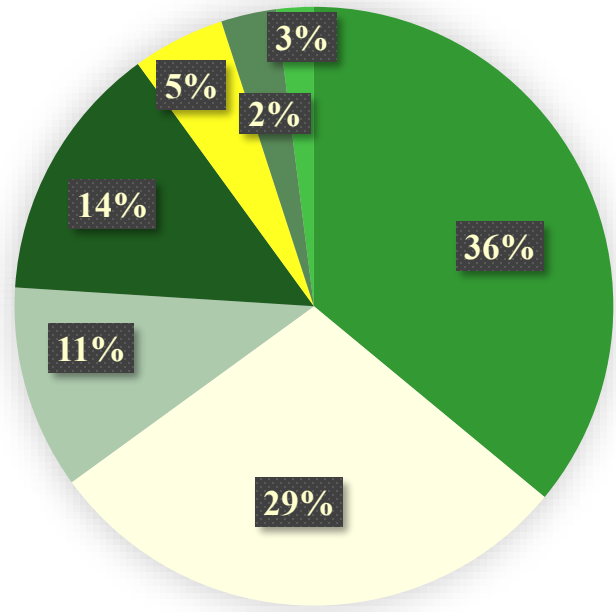
Green Technologies to Shift Projected Demand by 2030

% of Global Demand for Magnet Materials 2020



- Off shore Wind Turbines
- Electric Vehicles
- Consumer Electronics
- Industrial Motors
- Non-drivetrain Motors
- Bonded Magnets
- Other Sintered Magnets

Projected % of Global Demand for Magnet Materials 2030

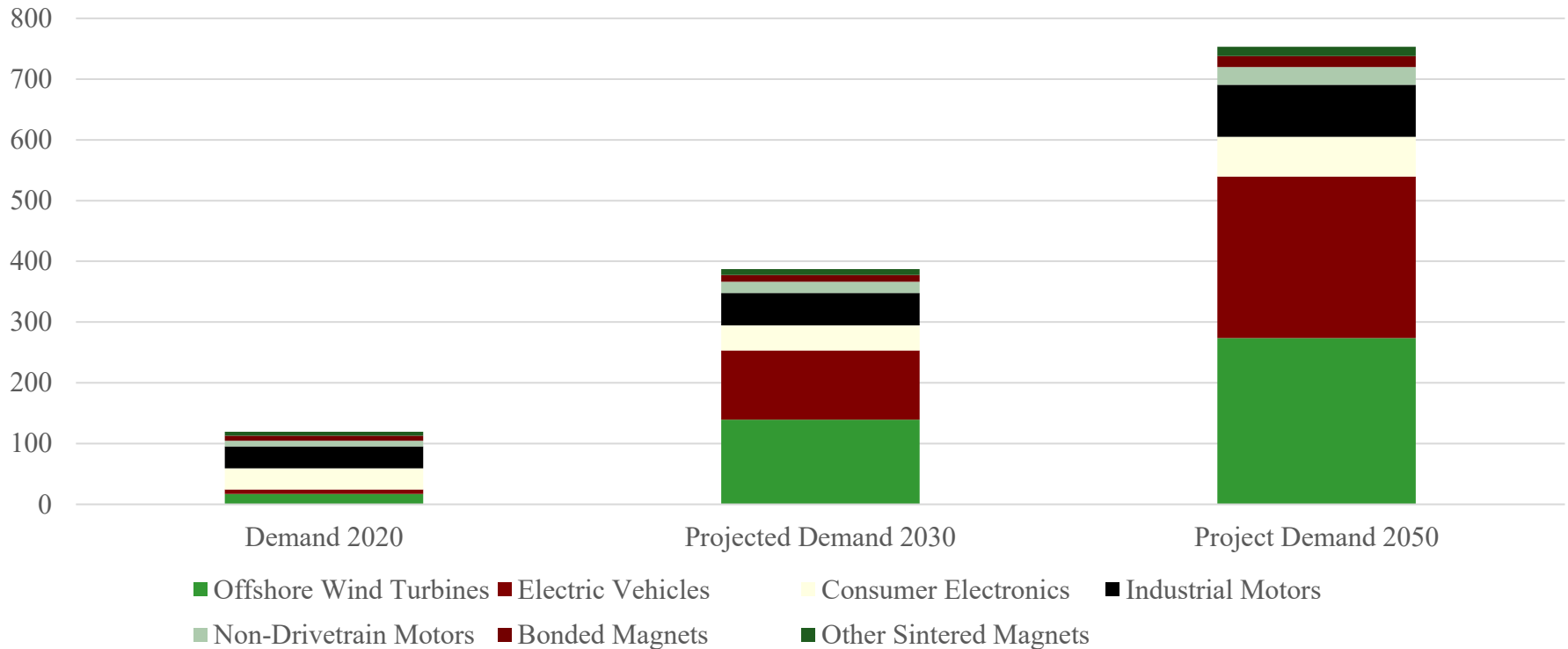


* US DoE Report, "Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment," 2/24/22. Based on NdFeB demand

Decarbonization Goals to Drive Global Demand



Projected Global Demand Growth for Magnet Materials Under Aggressive Decarbonization Goals*



Green Technologies Dependent on REE Magnet Materials Expected to Drive Significant Demand Growth

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

Growing Concern

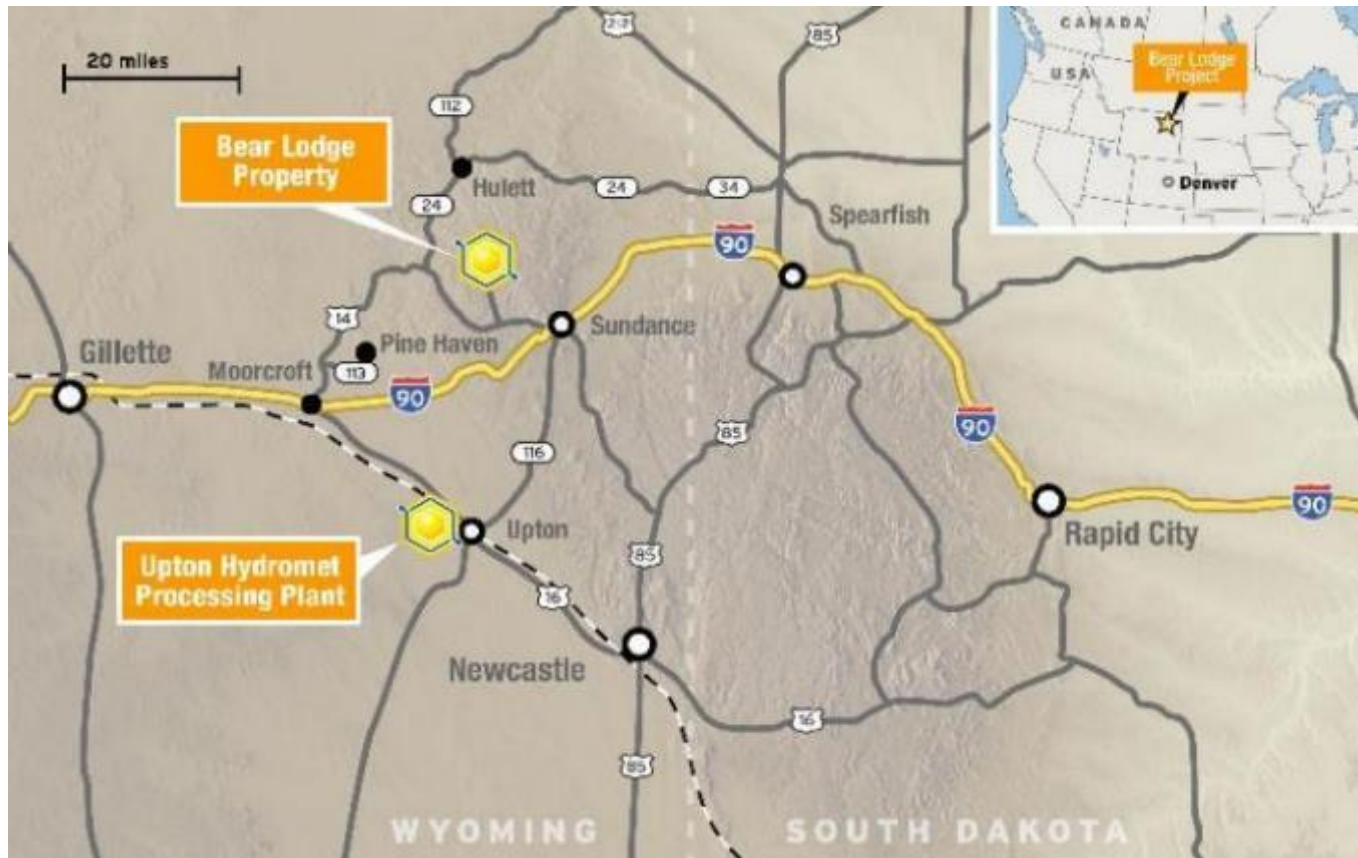
- ◆ 7 US Presidential Determinations regarding necessity of US supply of critical materials, including REEs
- ◆ June 2021 Executive Order calls for:
 - Investment in sustainable domestic and international production and processing of critical minerals
 - Recommends Congress take actions to recapitalize and restore the National Defense Stockpile of critical minerals
- ◆ Over \$30M in Federal and State investment in demo plant
- ◆ If mining and separation at Bear Lodge “were expanded to the level planned in the 2014 pre-feasibility study for Bear Lodge, production could increase to about 4% of current world Nd/Pr production”*

* US DoE Report, “Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment,” 2/24/22.

Overview of the Bear Lodge Project

Premier Wyoming Location

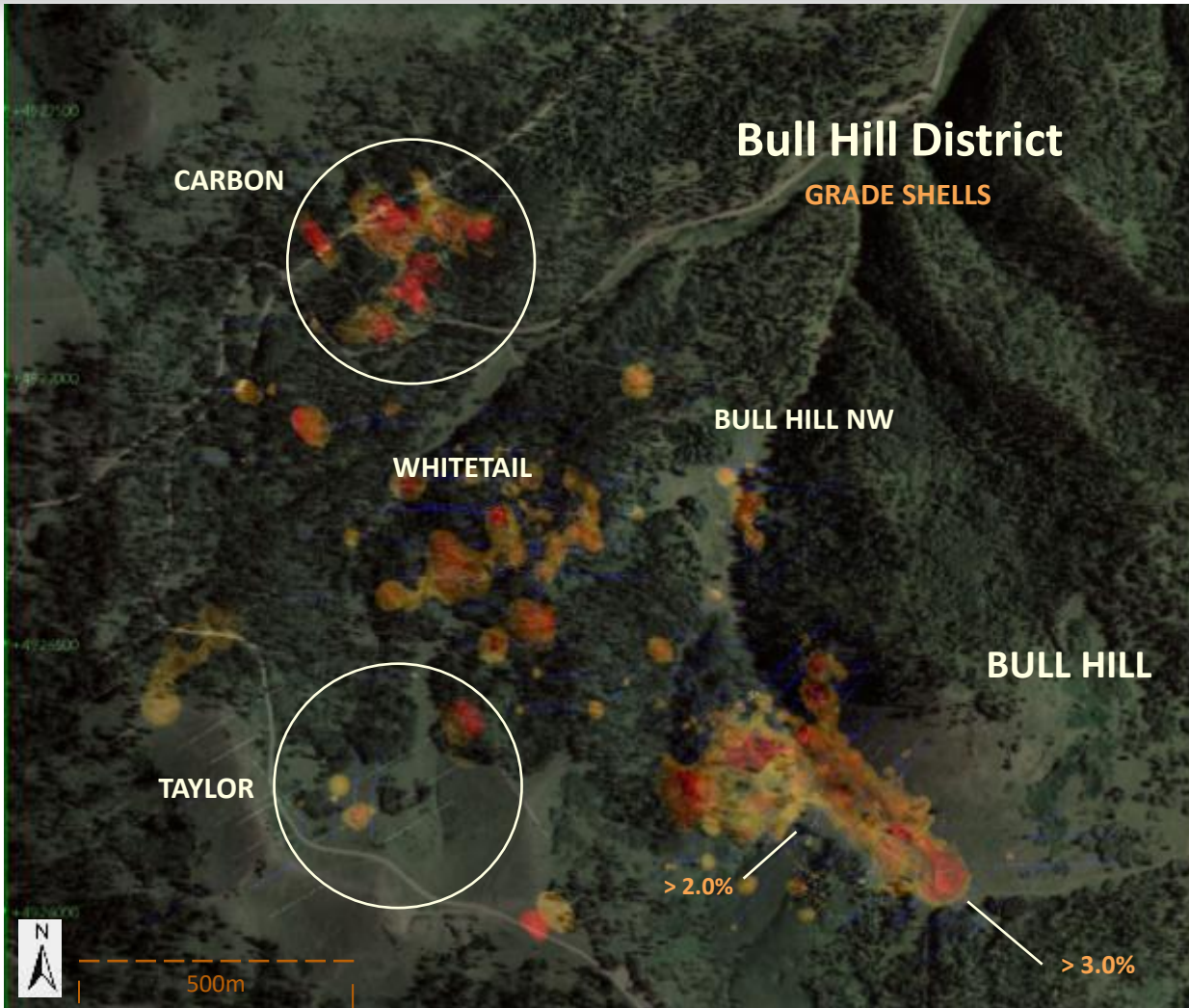
**Mining-friendly State / Good infrastructure / Low-cost power /
Ready workforce**



Support from Local and State Leaders

Bear Lodge – A World-Class Resource

- ◆ Well-outlined resource with identified targets for potential expansion
- ◆ Royalty-free mineral rights
- ◆ 1,000-ton bulk sample, with 10% REE oxide content, ready for demo plant
- ◆ High-grade zone to be mined in early years
- ◆ One of the highest-grade Nd/Pr oxide deposits in the world



LeapFrog image showing the distribution of the +2.0% (orange) and +3.0% Total Rare Earth Oxides (TREO) (red) grade shells at the Bear Lodge Project. White circles indicate targets.

Bear Lodge Distribution – Magnet Materials Drive Value

Bear Lodge Project Mineralized Material Projected Distribution by Weight¹

Critical Rare Earth Elements ²	Distribution by Wt.
Neodymium (Nd)	17.9%
Europium (Eu)	0.7%
Dysprosium (Dy)	0.5%
Terbium (Tb)	0.1%
Yttrium (Y)	1.3%
Praseodymium (Pr)	<u>4.9%</u>
Subtotal CREOs	25.4%

Total Rare Earth Elements	Distribution by Wt.
CREOs	25.4%
Cerium (Ce)	43.0%
Lanthanum (La)	26.8%
Gadolinium (Gd)	1.6%
Samarium (Sm)	3.0%
Other REEs ³	0.2%
Total Rare Earth Oxides	100%

1. 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.
2. Rare earths identified as "critical" by US Dept. of Energy, Critical Materials Strategy Report, including Pr due to use as a raw material for high-intensity, permanent magnets.
3. Other REEs include Holmium, Erbium, Thulium and Ytterbium

Ore Collected for Demo Plant



- ◆ Trenching exposed near-surface dyke
- ◆ Sampled along 300-foot length



- ◆ Bulk samples ranged from 3.65% to 14.65% TREO
- ◆ Average grade of 10.1% TREO



- ◆ 1000-Ton bulk sample extracted for demo plant
- ◆ Trench reclaimed

Bear Lodge – Project History



Bench recovery tests completed; drilling defines large, high-grade ore zone

Successful first phase pilot plant test for RE separation; USFS projects Record of Decision by end of 2016

Synchron invests \$4.8M for 34% stake in RER* Focus shifts to refining and improving IP

2012

2013

2014

2015

2016

2017

Prelim. Feasibility Study (PFS) completed; Plan of Operations submitted to US Forest Service (USFS) for permitting

Updated PFS for expanded resource and metallurgical advances

Draft Environmental Impact Statement issued by USFS; Bear Lodge put on care and maintenance due to poor market conditions

- *Synchron is a General Atomics' affiliate*

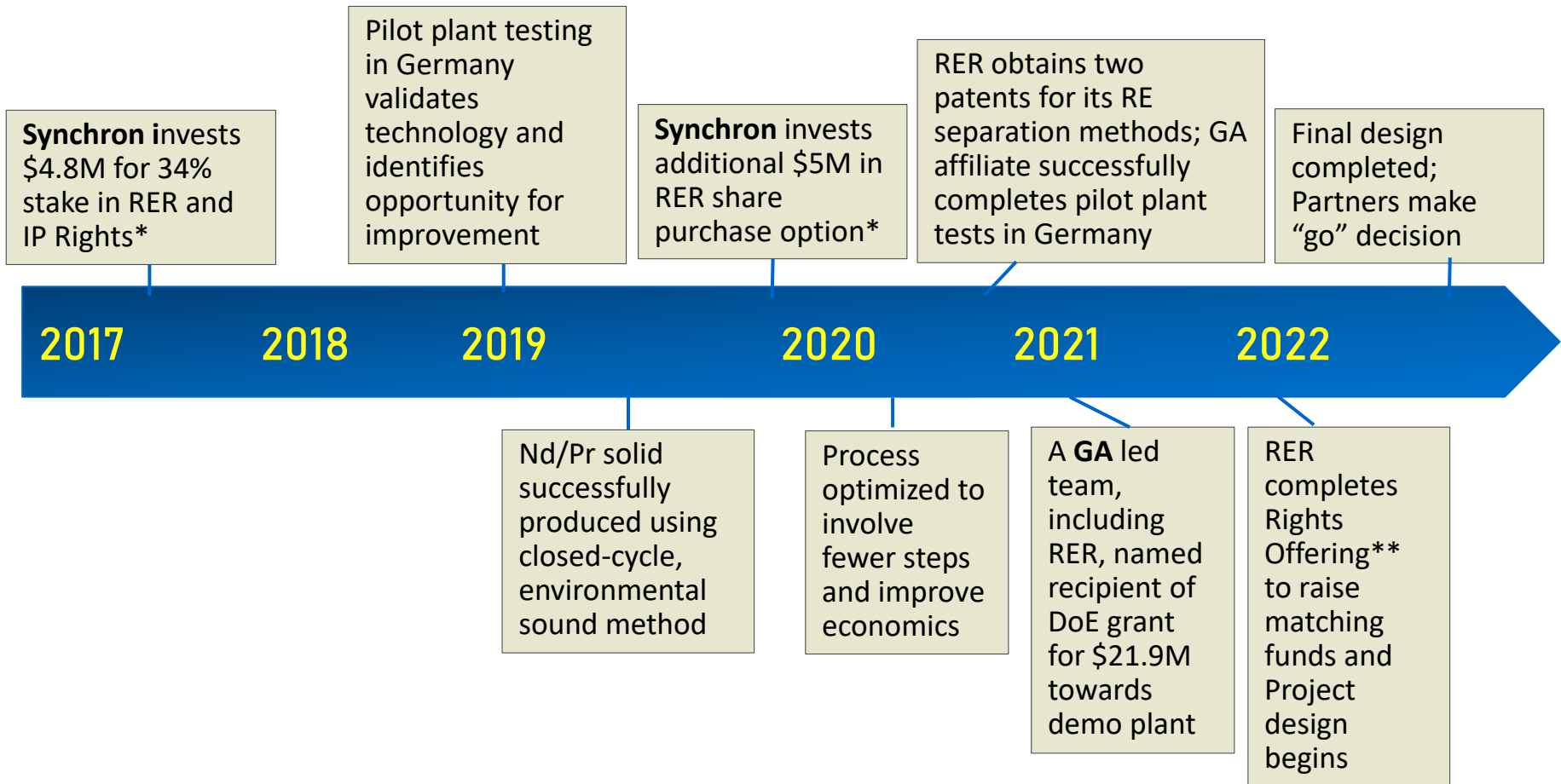
Cornerstone Project for Building US Rare Earth Supply Chain

- ◆ World-class, long-lived ore body identified
- ◆ Ideal location in mining-friendly Wyoming with extensive infrastructure and skilled labor in close proximity
- ◆ Exploiting higher-grade material in early years expected to accelerate payback
- ◆ Rich in magnet materials
- ◆ Known targets represent opportunity for resource growth
- ◆ Permitting efforts expected to resume in 2023/2024

Recovery and Separation Advancements



Partnership to Advance Technology



- Synchron is a General Atomics' affiliate
- Rights Offering raised a total of \$25.4M in December 2021

#1

92 – 97% recovery of REEs from Bear Lodge run-of-mine material

#2

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

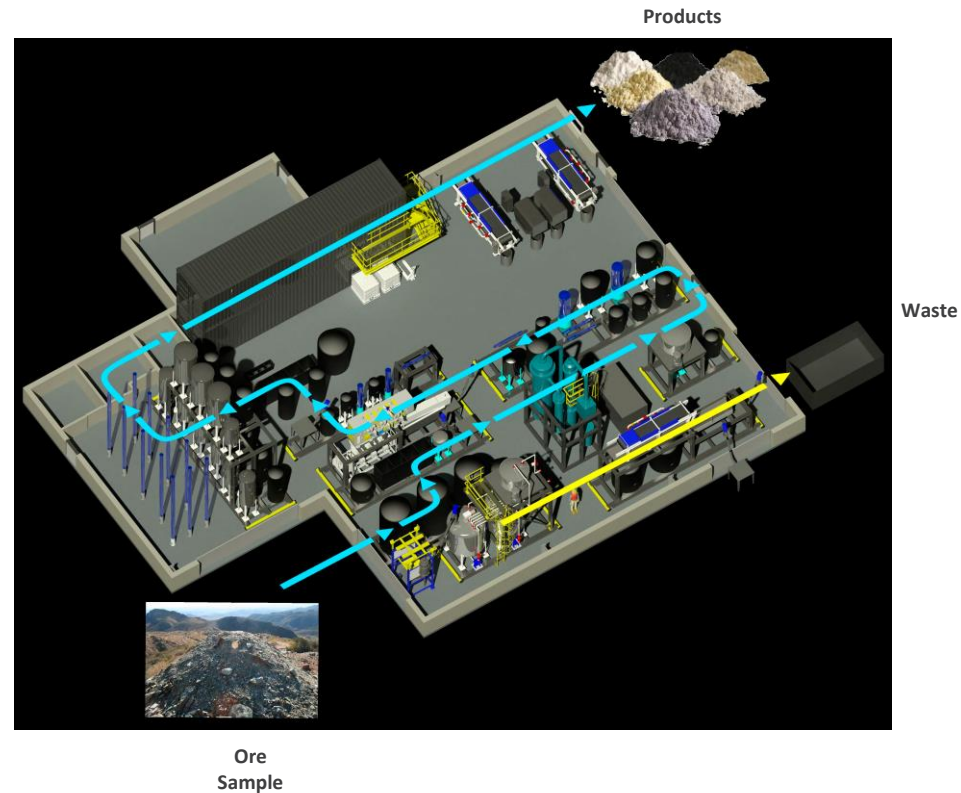
#3

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

#4

100% separation of radionuclides for disposal at licensed facility

Production of High-Purity, Critical Rare Earth Materials



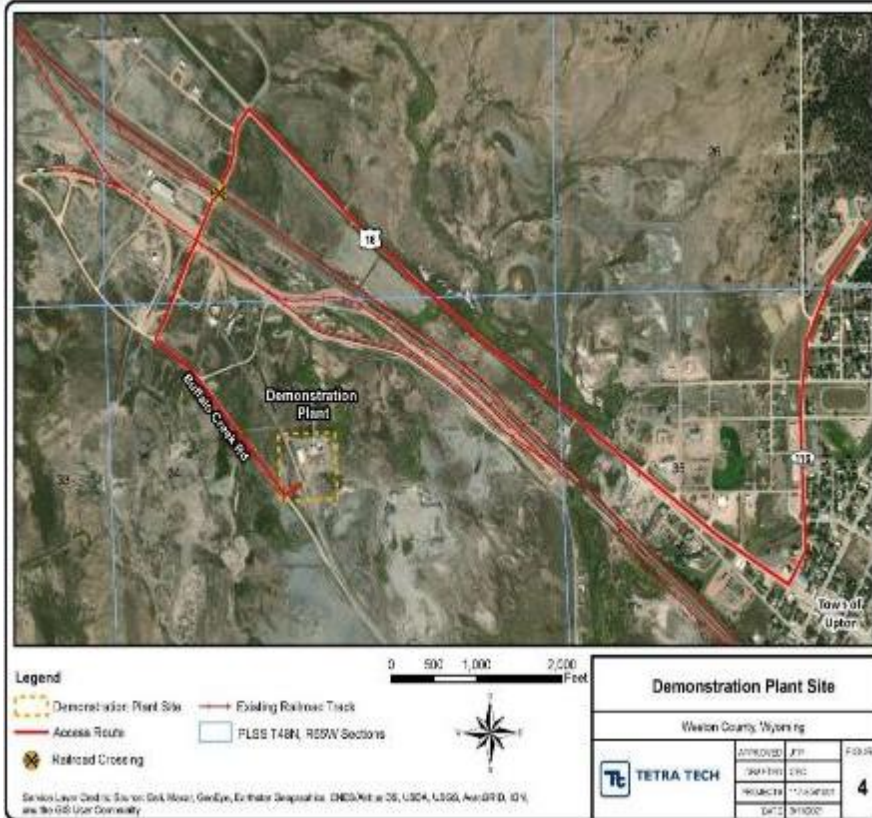
Next Step - Demonstration Plant Collaborative Effort

2023/2024 - Construct and Operate RE Demonstration Plant

Goal: Gather data and confirm process flow sheet for full-scale operations, including equipment sizing and reagent requirements

- ◆ Final Engineering and Design completed; DoE “go” decision received – 12/22
- ◆ NRC license expected mid-2023
- ◆ NEPA review immediately following NRC license
- ◆ Certain long-lead time equipment already secured
- ◆ Sample ore to be moved from Bear Lodge to plant site in summer 2023
- ◆ Data gathered will inform details of full-scale commercial operations
- ◆ Construction expected to take 10 to 12 months
- ◆ Operations expected for 8 to 10 months

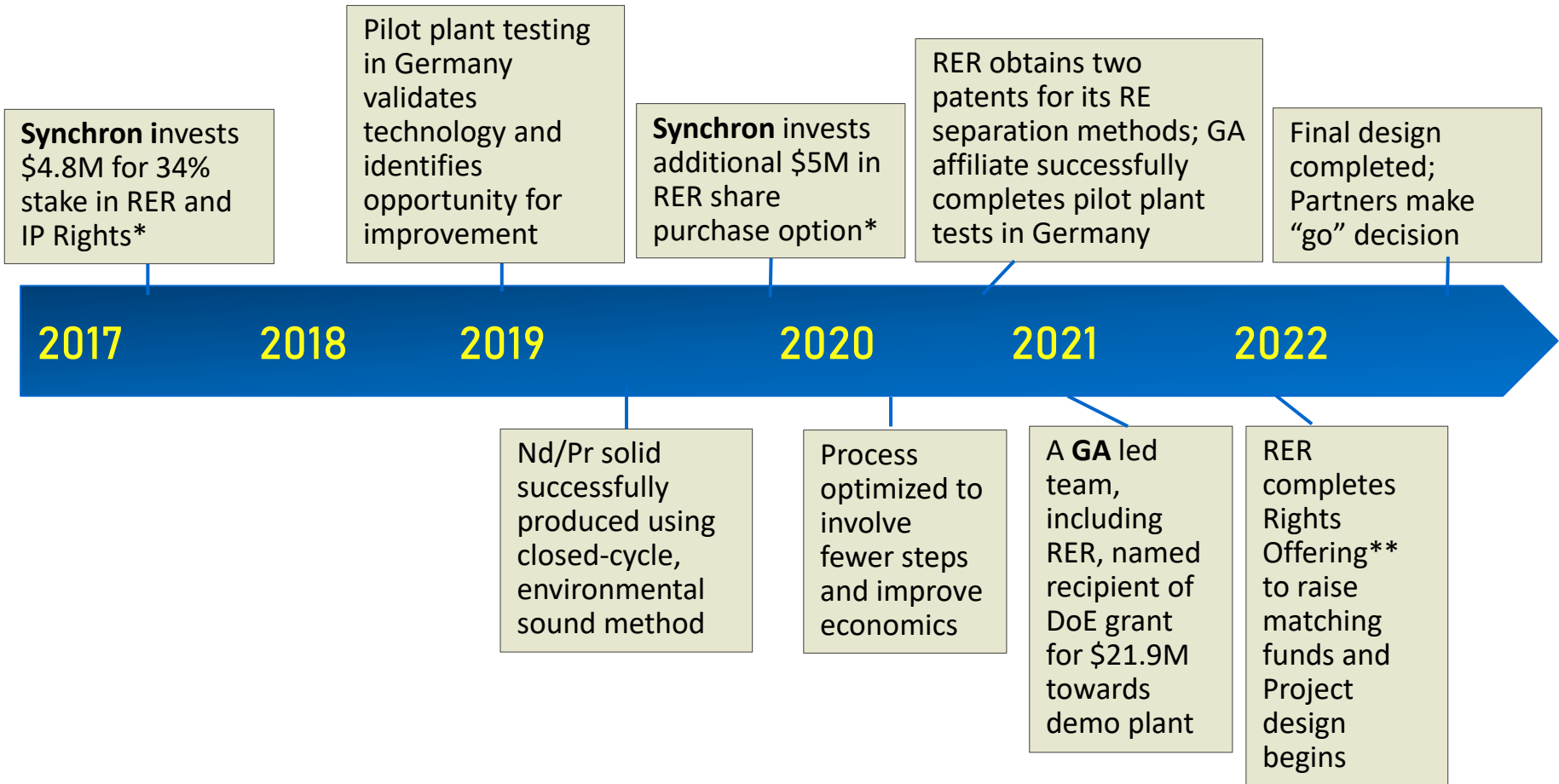
Demonstration Plant Location- Upton, Wyoming



- ◆ Upton Logistics Industrial Center - 8.2 Acre Brownfields Site
- ◆ Approximately 15 demo plant employees to transition to commercial operations
- ◆ Commercial scale plant would be located on optioned land across the street



Demo Plant Timeline



- Synchron is a General Atomics' affiliate
- Rights Offering raised a total of \$25.4M in December 2021

Project Timeline

Task	'21	2022					2023					2024				'25		
REE Demonstration Plant	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4	Q4	Q1	
Design & Engineering	█																	
Procurement					█													
Construction							█											
Operations													█					

NRC License
 DoE NEPA

Demo Plant – Permitting and Licensing



- ◆ US Forest Service (USFS) – Road Use Permit required for movement of ore sample to demo plant location *summer 2023*
- ◆ Wyoming Department of Environmental Quality (WDEQ)
 - Air Quality Permit – *complete*
 - Sample re-handling, crushing/screening
 - Hydrometallurgical process, calcination
 - Separation process
 - Asbestos inspection
 - Water Quality Permit – *expected 2Q23*
 - Storm water (Wyoming PDES)
 - Process water recycling
- ◆ US Nuclear Regulatory Commission (USNRC)
 - Source Materials License Application Process – *expected 3Q23*
 - Performance Based License

All solid waste generated by the process will be neutralized, conditioned and shipped off-site to licensed disposal facilities

Building the Cornerstone for a Secure, Domestic REE Supply Chain that Supports High Tech Applications

- ◆ Demo plant will continue to advance innovative technology that produces REE products at a lower cost and in a more environmentally sound way than traditional recovery methods
- ◆ World-class strategic partners share vision and continue to make technological advancements as well as create R&D partnerships with federal agencies
- ◆ Premier North American deposit, high in the REEs critical for the fast growing, high-strength permanent magnet market
- ◆ Significant resource with upside in already identified targets
- ◆ Wyoming location exceptional for cost-effective infrastructure, availability of highly skilled workforce and ongoing local and state support