



An Overview of Ucore's Alaskan-centric REE Domestic Supply Chain Development Plan

■ American Critical-Metals Independence Starts Here

CAUTIONARY NOTES & DISCLAIMERS

This presentation includes certain statements that may be deemed “forward-looking statements”. All statements in this presentation (other than statements of historical facts) that address future business development, technological development and/or acquisition activities (including any related required financings), timelines, litigation outcomes, events, or developments that the Company expects, are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance or results and actual results or developments may differ materially from those in forward-looking statements. The Company has assumed that it will be able to procure or retain additional partners and/or suppliers, in addition to the wholly owned Innovation Metals Corp. (“IMC”), as suppliers for Ucore’s expected future Alaska Strategic Metals Complex (“SMC”). Ucore has also assumed that sufficient external funding will be found to prepare a new National Instrument 43-101 (“NI 43-101”) technical report that demonstrates that the Bokan Mountain Rare Earth Element project (“Bokan”) is feasible and economically viable for the production of both REE and co-product metals at the then prevailing market prices based upon assumed customer off-take agreements. Ucore has also assumed that sufficient external funding will be secured to develop the specific engineering plans for the Alaska SMC and its construction. Factors that could cause actual results to differ materially from those in forward-looking statements include, without limitation: IMC failing to protect its intellectual property rights associated with the RapidSX™ technology; the RapidSX technology failing to demonstrate commercial viability in large commercial-scale applications; Ucore not being able to procure additional key partners or suppliers for the Alaska SMC; Ucore not being able to raise sufficient funds to fund the specific design and construction of the Alaska SMC and/or the continued commercial rollout of RapidSX technology; adverse capital-market conditions; unexpected due-diligence findings; the emergence of alternative superior metallurgy and metal-separation technologies; the inability of Ucore and/or IMC to retain its key staff members; a change in the legislation in Alaska and/or in the support expressed by the Alaska Industrial Development and Export Authority (“AIDEA”) regarding the development of Bokan and/or the Alaska SMC; the availability and procurement of any required interim and/or long-term financing that may be required; and general economic, market or business conditions.

For more information about Ucore Rare Metals Inc., please see the information that is available on SEDAR (www.sedar.com). Please also see the risk disclosures that are found in Ucore’s most recent Management Discussion & Analysis document (filed on April 30, 2021).

For more information about Ucore’s mineral resources and related technical information regarding the Bokan Project, please see Ucore’s NI 43-101 technical report (a preliminary economic assessment) filed on SEDAR on March 14, 2013 and Ucore’s mineral resource update filed on SEDAR on October 15, 2019. Information about the quantity and grades of the indicated and inferred mineral resources are described in these documents and are available therein. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Qualified Person: Michael L. Schrider, P.E., VP & COO of Ucore, has approved the scientific and technical content of this presentation and is the Qualified Person responsible for its accuracy. Mr. Schrider, is a registered professional engineer in the State of Louisiana, holds a BS degree in engineering from the University of New Orleans and a MEng in mining engineering (mineral process emphasis) from The University of Arizona.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined by the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this presentation.

ACRONYMS & DEFINITIONS

- **AIDEA** – Alaska Industrial Development and Export Authority
- **AK** – State of Alaska
- **ASMC** – Alaska SMC, LLC
- **ATVM** - Advanced Technology Vehicles Manufacturing
- **Bokan or Bokan Project** – Bokan-Dotson Ridge Rare Earth Element Project
- **C \$** - Canadian Dollars
- **CAPEX** - Capital Expenditures
- **DOD** – US Department of Defense
- **DOE** – US Department of Energy
- **ESG** – Environmental, Social & Governance Principles
- **EV** – Electric Vehicles
- **FS** – Feasibility Study
- **FY** – Fiscal Year
- **GHG** – Green House Gases
- **HREE** – Heavy Rare Earth Elements
- **IMC** - Innovation Metals Corp.
- **IP** – Intellectual Property
- **IRS** – US Internal Revenue Service
- **JV** – Joint Venture
- **KW** – Kilowatt
- **LREE** – Light Rare Earth Elements
- **M** – Million
- **Near Shovel Ready** - engineering complete and permitting well underway
- **NI 43-101** – National Instrument 43-101
- **OPEX** – Operating Expenditures
- **PEA** – Preliminary Economic Assessment
- **PRC** - People's Republic of China
- **PFS** – Pre-Feasibility Study
- **PMSM** – Permanent Magnet Synchronized Motor
- **R&D** – Research & Development
- **REE** – Rare Earth Elements
- **REO** – Rare Earth Oxides
- **S&P** – Separation & Processing
- **SMC** – Strategic Metals Complex
- **SX** – Solvent Extraction
- **TPA** – Tonnes Per Annum
- **TREO** – Total Rare Earth Oxides
- **US** – United States
- **US \$** - United States Dollars
- **USG** – United States Government
- **WIP** – Work-In-Progress

ABOUT UCORE



Founded: 2006

- A proven and resilient leader in the REE sector



Mergers & Acquisitions

- 2007 – Landmark Minerals, Inc. (TSXV:LML)
- 2020 – IMC (a private Canadian company)



Current Focus on Development of a Domestic REE Supply Chain

I. Next Generation REE Separation Technology Implementation

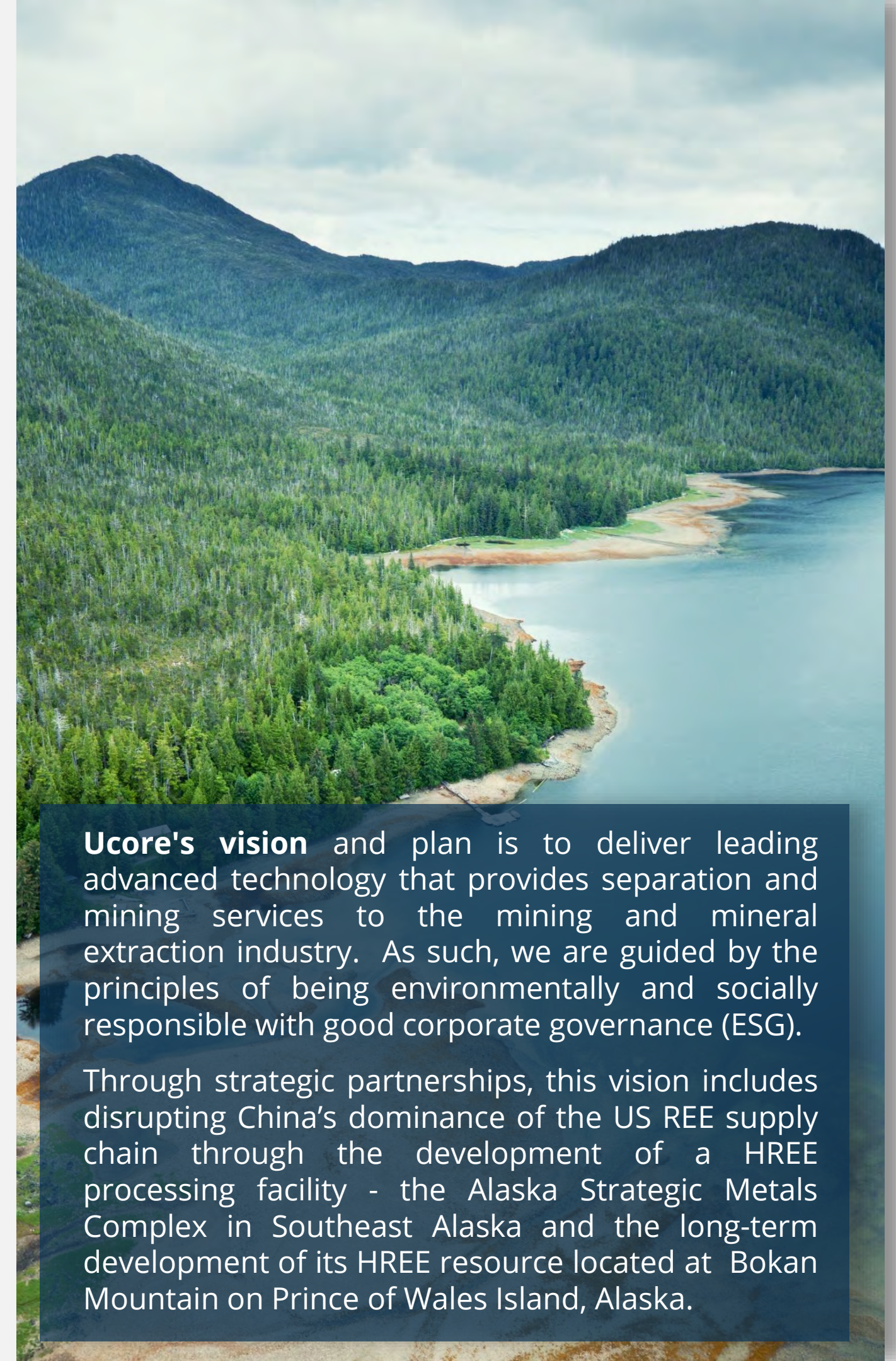
- Reinforce IMC's commercial deployment and independent licensing model of the RapidSX™ separation technology platform for REE
- Support IMC's development of RapidSX™ separation technology for EV battery and other technology metals, such as Li, Co, Ni, et al.

II. REE Processing & Metalmaking in North America

- Development of the Bokan Project's first component –
 - The Alaska SMC separation and purification plant for the production of REO
- Through strategic alliances, develop additional REO production opportunities with potential downstream alloy and metal making

III. Domestic Resource Security

- US-Allied Feedstock Supply Agreements
- Bokan resource extraction
- Other REE sources



Ucore's vision and plan is to deliver leading advanced technology that provides separation and mining services to the mining and mineral extraction industry. As such, we are guided by the principles of being environmentally and socially responsible with good corporate governance (ESG).

Through strategic partnerships, this vision includes disrupting China's dominance of the US REE supply chain through the development of a HREE processing facility - the Alaska Strategic Metals Complex in Southeast Alaska and the long-term development of its HREE resource located at Bokan Mountain on Prince of Wales Island, Alaska.

PRINCIPAL BUSINESSES AND TECHNOLOGY



ASMC is an Alaska corporation and the wholly owned Ucore subsidiary established to build and operate the Alaska SMC



Corporate parent to existing subsidiaries and prospective joint ventures



IMC is a wholly owned subsidiary of Ucore with a separate management team and a dedicated business plan



IMC's patent-pending & proprietary, environmentally sound, and 21st century critical metal separation technology platform founded on time-tested SX technology for REE, Li, Co, Ni, et al.

HISTORICAL ACTIONS



Bokan-Dotson Ridge REE Project:

- 100% ownership rights
- US \$145M AIDEA bond financing authorization by the AK legislature ([SB 99, 2014](#))
- C \$35M invested to:
 - Explore, validate & establish an NI 43-101 inferred & indicated mineral resource of 1.05M tonnes @ 0.603% TREO and 4.79M tonnes @ 0.602% TREO, respectively
 - develop the PEA¹, published in 2013
- Drove the need to establish an efficient & environmentally friendly technology for REE separation to lower the economic feasibility threshold for Bokan and other REE project opportunities to compete head-to-head with PRC producers

REE Separation Technology IP Development & Acquisition

- C \$17.6M to date on internal R&D and acquisition of best-in-class technology for REE separation towards the development of the Alaska SMC and IMC's independent business pursuits

Market Cultivation & Development:

- Upstream feedstock identification and analysis (US allied nations)
- Other potential plant sites in the United States
- Downstream utilization & deployment (metals, alloys, magnets & components)

¹A PEA is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

REE MARKET SECTOR OVERVIEW

The Opportunity

Adamas Intelligence forecasts that the value of global magnet REO consumption will rise five-fold by 2030, from US \$2.98 billion in 2020 to US \$15.65 billion at the end of the decade.

- Critical REE metals are the “new oil” needed to keep North America competitive in an EV world
- Establishing an integral stake in the REE supply chain secures market position for the 21st Century
- The most significant value-added revenue in the REE supply chain is in producing separated REO
- A transformative technology, like the RapidSX separation technology, can break the PRC stranglehold on REE separation

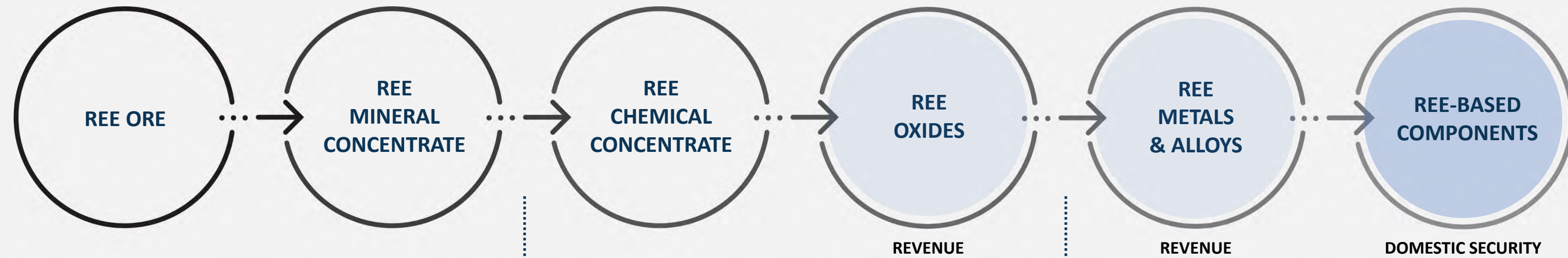
The Challenge

The PRC controls over 80% of all worldwide REE resources, manufactures over 90% of all REE-based components and will eventually consume all of the REE that they produce, as they manipulate and control global REE pricing.

- The flight from fossil fuels is occurring faster than most even thought possible
- Decarbonization is the industrial challenge of this century
- China has exploited its dominant position in the REE market by coercing industries that rely on these elements to locate their facilities, IP, and technology in China

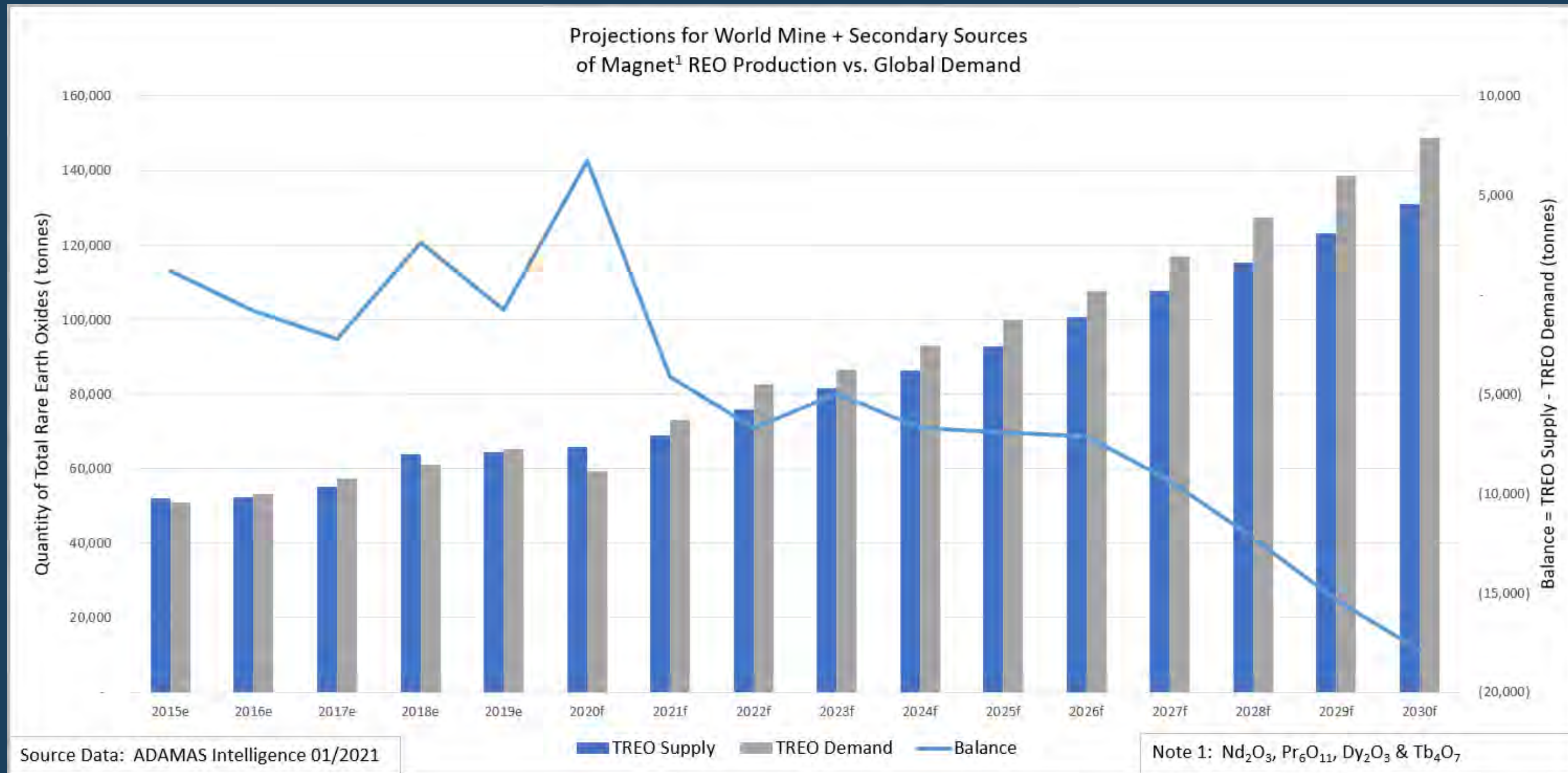
REE MARKET SECTOR OVERVIEW

The Solution: Ucore's Vision of a Domestic REE Supply Chain



GLOBAL PRODUCTION AND CONSUMPTION OF REO

Inherent Domestic Risks to the Current PRC Dominant Supply Chain



Supply Risks with PRC Dominance

- **Control of the Complete Domestic REE Supply Chain** – North America can't just dig ore and produce oxides
- **Political Unrest** – Trade wars
- **Climate Change** – Hurricanes, floods & wildfires
- **Protectionist Strategies** – China keeps what China needs
- **The Unforeseen** – Rail blockades & COVID-19

THE UCORE PLAN OF EXECUTION



UCORE RARE METALS INC. & THE STATE OF ALASKA

Critical Metals Discussion



BOLT EV

Three Pillars of Development Opportunity:



Alaska Strategic Metals Complex



RapidSX™ Critical Metals Technology



Bokan Mountain Complex

Glass and mirrors polishing powder | UV cut glass
• Cerium

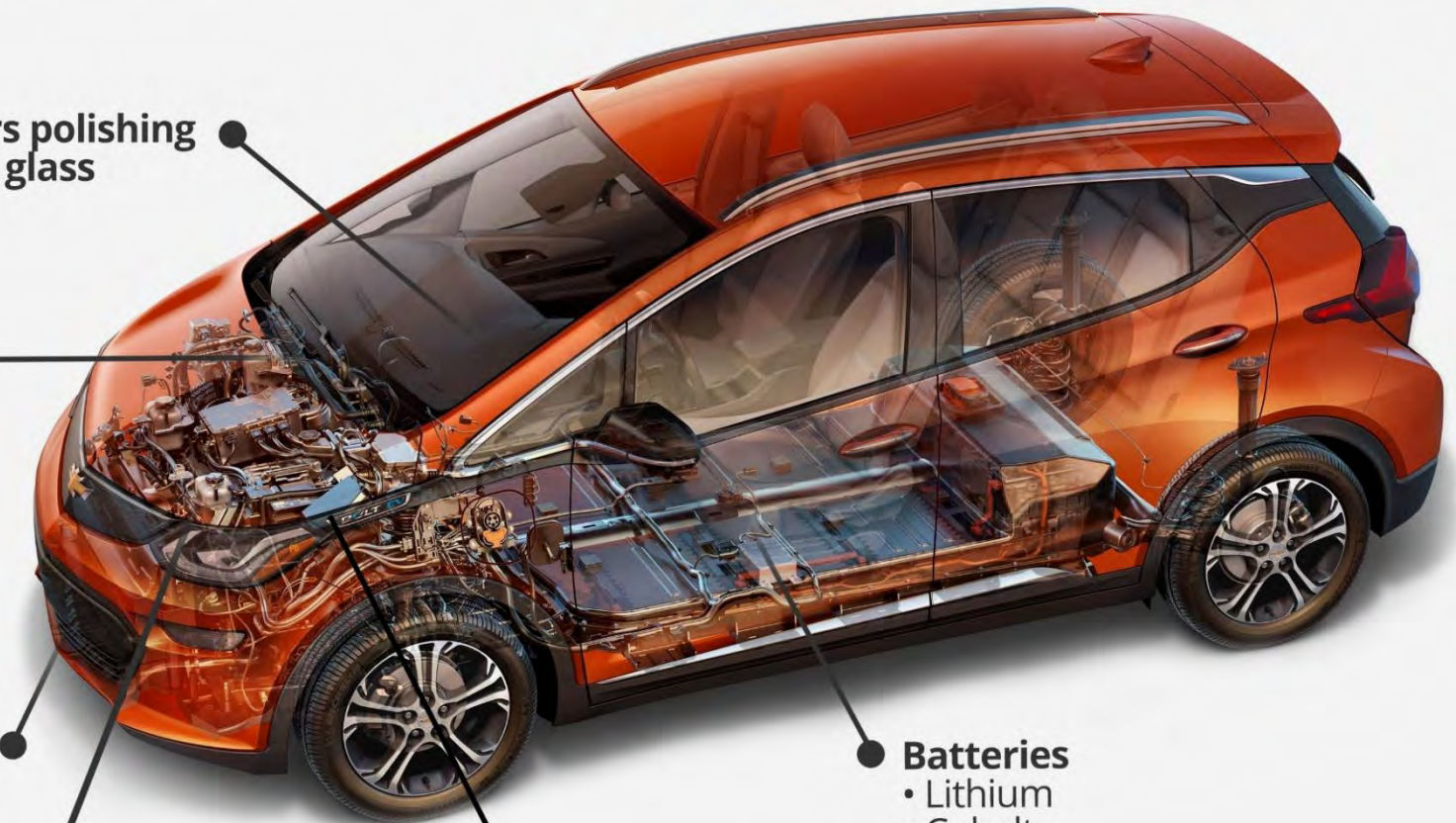
LCD Screen
• Europium
• Yttrium
• Cerium

Component Sensors
• Yttrium

Electric motor
• Neodymium
• Praseodymium
• Dysprosium
• Terbium

Batteries
• Lithium
• Cobalt
• Nickel

25+ electric motors throughout vehicles
• Neodymium magnets



THE ALLIANCE
Linking Alaska's Resources to Alaska's People

ALASKA2023 BUSINESS MODEL

Developing an independent American REE supply chain

Comprised of three primary initiatives:



Feed

Securing a US-allied REE feedstock source and in parallel, continuing to advance the prospective HREE mine at the Bokan Project toward a feasibility study and permitting;



Technology

Developing the Alaska SMC HREE & LREE separation plant in Southeast Alaska through the wholly owned subsidiary Alaska SMC, LLC, utilizing IMC's patent-pending and proprietary RapidSX critical metals separation technology platform;



Market

North American market development and cultivation of the tiered supplier and customer base for REE products in the Western World, disrupting PRC dominance.

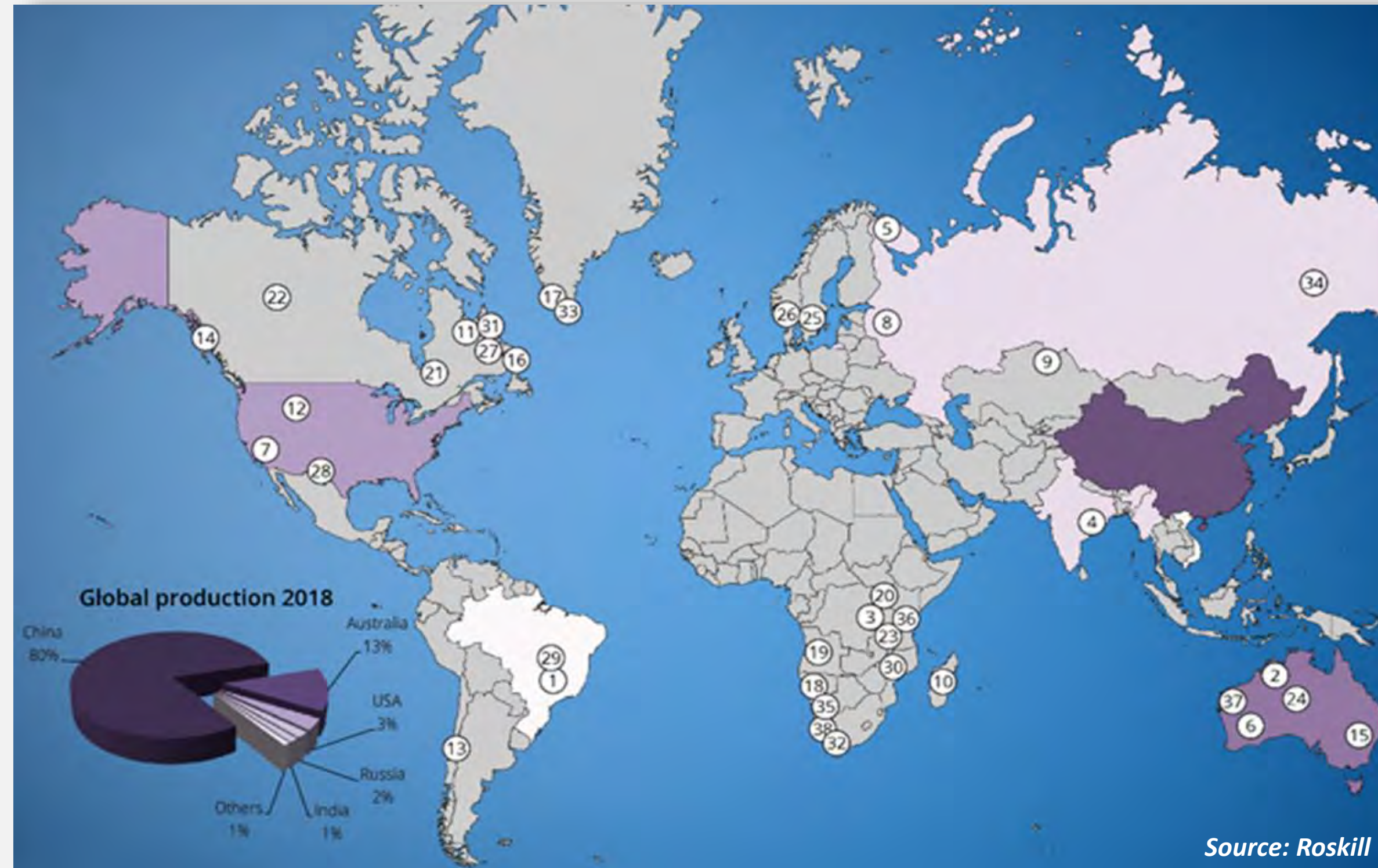


ALASKA2023 BUSINESS MODEL



Alaska Strategic Metals Complex

Existing & Developing Non-PRC Feedstock Sources



Roskill

Non-PRC rare earths

Operating mines

- 1 Araxá (*suspended*)
- 2 Browns Range
- 3 Gakara
- 4 India Rare Earths
- 5 Karnasurt
- 6 Mount Weld
- 7 Mountain Pass
- 8 Novogorod
- 9 SARECO (*suspended*)

Rare earth projects

- | | |
|-------------------|---------------------|
| 10 Ambato | 25 Norra Kärr |
| 11 Ashram | 26 Porsgrunn |
| 12 Bear Lodge | 27 Red Wine Complex |
| 13 Bio Lantanidos | 28 Round Top |
| 14 Bokan | 29 Serra Verde |
| 15 Dubbo | 30 Songwe Hill |
| 16 Foxtrot | 31 Strange Lake |
| 17 Greenland Min. | 32 Steenkampskraal |
| 18 Lofdal | 33 Tanbreez |
| 19 Longonjo | 34 Tomtor |
| 20 Makuutu | 35 Warmbad |
| 21 Montviel | 36 Wigu Hill |
| 22 Nechelacho | 37 Yangibana |
| 23 Ngualla | 38 Zandkopsdrift |
| 24 Nolans | |

Source: Roskill

ALASKA2023 BUSINESS MODEL



Alaska Strategic Metals Complex

A Planned 2,000 TPA HREE & LREE Separation & Purification Facility for the Production of REO

- The first constructed component of the Bokan Project
- Initially designed for currently available US-allied feedstock
- Expandable capacity to at least 5,000 tpa of feedstock throughput
- The processing plant will incorporate the RapidSX separation technology platform



Artist Rendering

US or Allied Feedstock will Transit Through Seattle or Prince Rupert



Located in Southeast Alaska

- Within a 50-mile radius (the IRS 'Mining' Limit) of Bokan – likely within the Ketchikan Gateway Borough
 - Located on a worldwide shipping corridor
 - Closest Alaska port to Seattle and Prince Rupert
 - Capitalize on an industrious work force & existing infrastructure (i.e. ports, roadways, water, electrical, broadband, etc.)



Alaska SMC Development

Generic Planned Product Specifications

- REO meeting the exact specifications of our downstream offtake partners and/or the commercial spot markets

Economics

- Head-to-Head competitive with Chinese REO producers
- Secure long-term supply and offtake agreements

Annual Projected REO Production & Permanent Magnet Synchronized Motor Contribution

REO Grade	REO	≈ Annual No. of 100 kw PMSM @ 2,000 Tonnes REO Per Annum	≈ Annual No. of 100 kw PMSM @ 5,000 Tonnes REO Per Annum	Assumptions
	Lanthanum	12	30	
	Cerium	32	81	
99.50%	Praseodymium	5	27,000	0.7 kg mined 75%Nd25%Pr oxide per motor ¹
99.50%	Neodymium	24	46,000	0.7 kg mined 75%Nd25%Pr oxide per motor ¹
	Samarium	21	53	
	Europium	5	12	
99.50%	Gadolinium	45	112	
99.99%	Terbium	16	482,000	1g of Tb for every 3g of Dy
99.50%	Dysprosium	123	1,205,000	102g mined Dy oxide per motor ¹
99.50%	Holmium	27	69	
	Erbium	82	206	
	Thulium	11	29	
	Ytterbium	68	171	
	Lutetium	10	24	
	Yttrium	666	1,666	

Source: Roskill

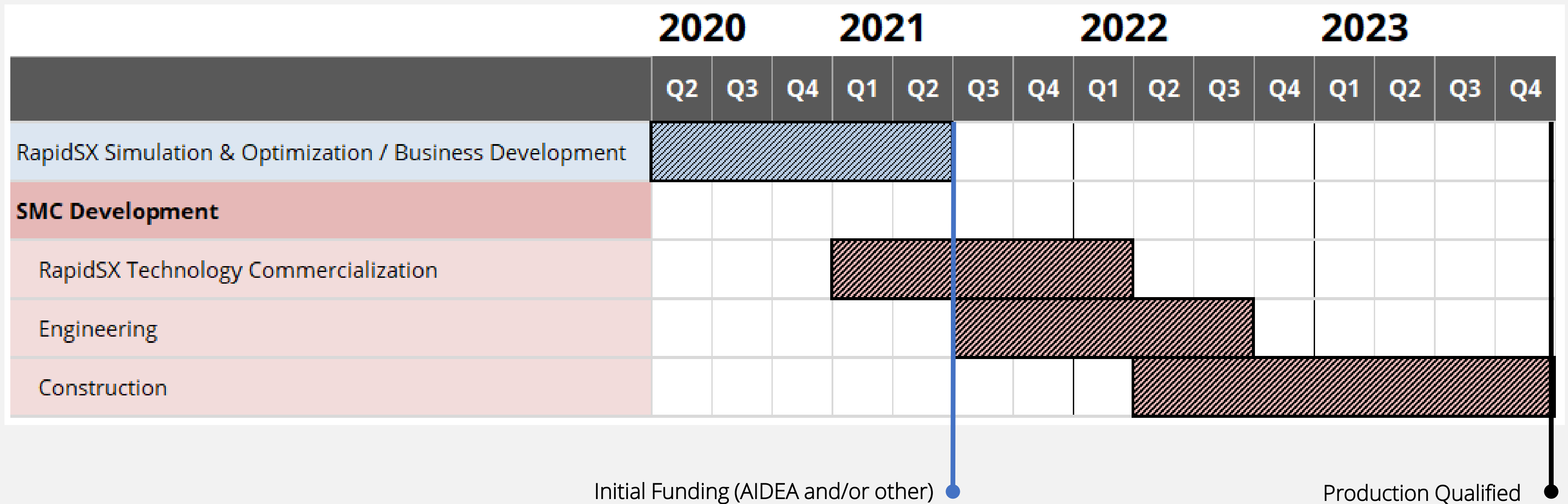
¹ Source: Adamas Intelligence

ALASKA2023 BUSINESS MODEL



Alaska Strategic Metals Complex

Alaska SMC Development Schedule



INNOVATION METALS CORP. BUSINESS MODEL



RapidSX™ Critical Metals Technology

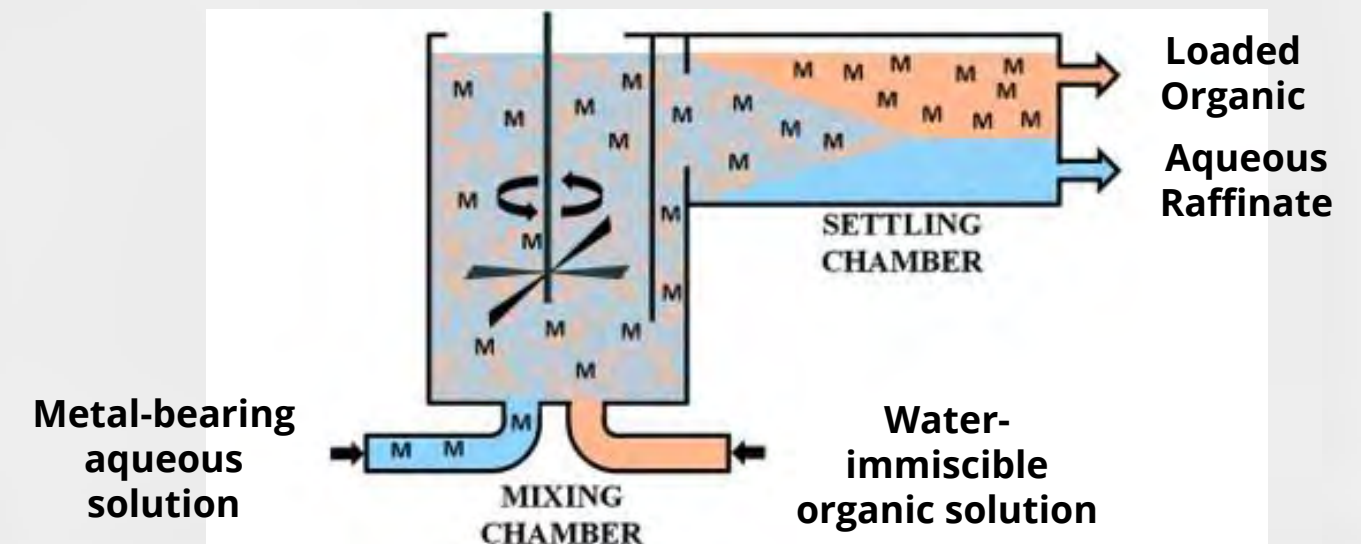
Introduction to Conventional REE Separation Technology

Typical Commercial SX Plant Mixer-Settler Configuration

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The fundamental approach for commercial REE separation with SX has been around for decades

- Acidic solutions containing REE (M in the schematic) are processed in multiple chemical 'circuits', each containing many connected mixer-settler stages arranged in unit operations such as Extract, Scrub and Strip
- REEs in initial feed solution are then successively split into groups until solutions containing individual target REEs or sub-groups are obtained
- Current systems require dozens of mixer-settler stages in each chemical circuit to obtain the required purity of REE
- Numerous circuits may be required to produce individual separated REE solutions



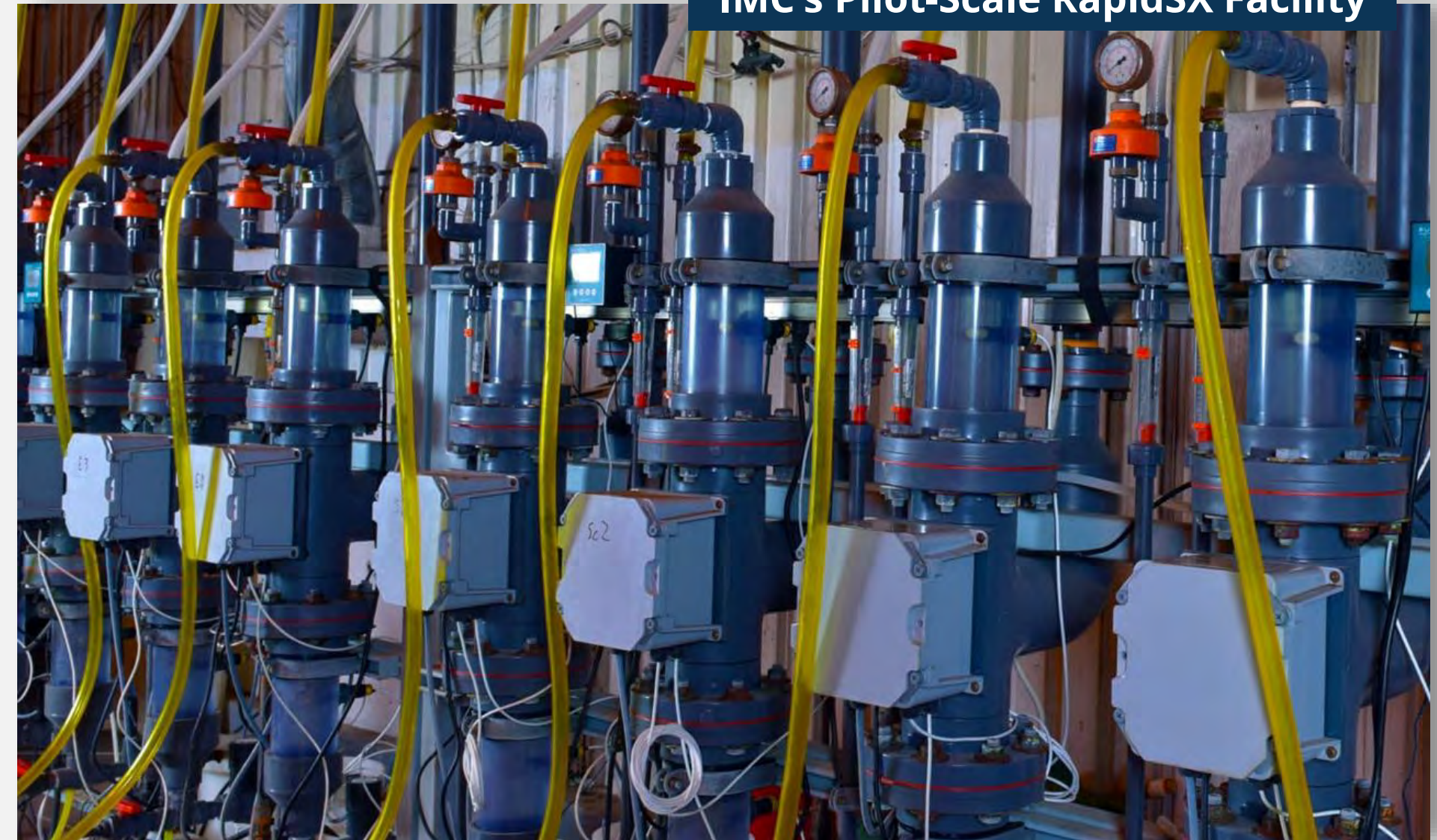
INNOVATION METALS CORP. BUSINESS MODEL



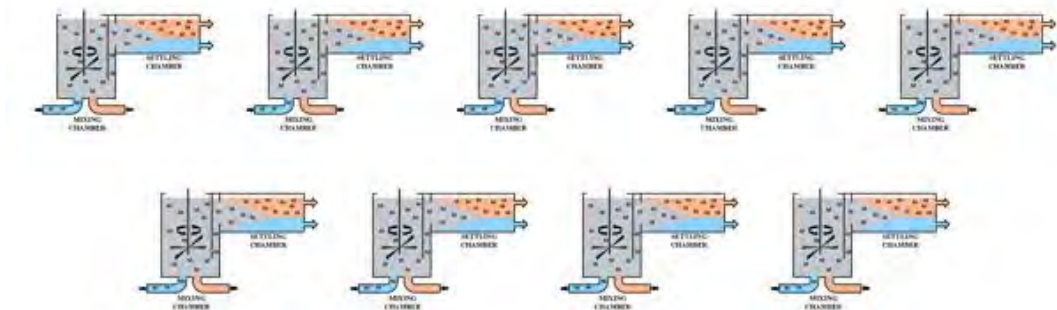
RapidSX™ Critical Metals Technology

Key Advantages vs. Conventional SX:

	RapidSX™	Conventional SX
Performance & Efficiency		
Commercial Purity	Yes	Yes
REE Recovery Rates	High	High
Processing Time	Rapid	Slow
Time to Equilibrium	Days	Several Weeks
CAPEX		
Equipment Cost	Low	High
Physical Footprint	Low	Very High
Separation Staging	Low	Very High
OPEX		
Metal Inventory/WIP	Low	High
Organic Volumes	Low	High
Labour	Low	High
Power Consumption	Low	High



IMC's Pilot-Scale RapidSX Facility



1 RapidSX REE stage

6 to 9 REE mixer-settler stages

ALASKA-LT BUSINESS MODEL



Bokan Mountain Complex

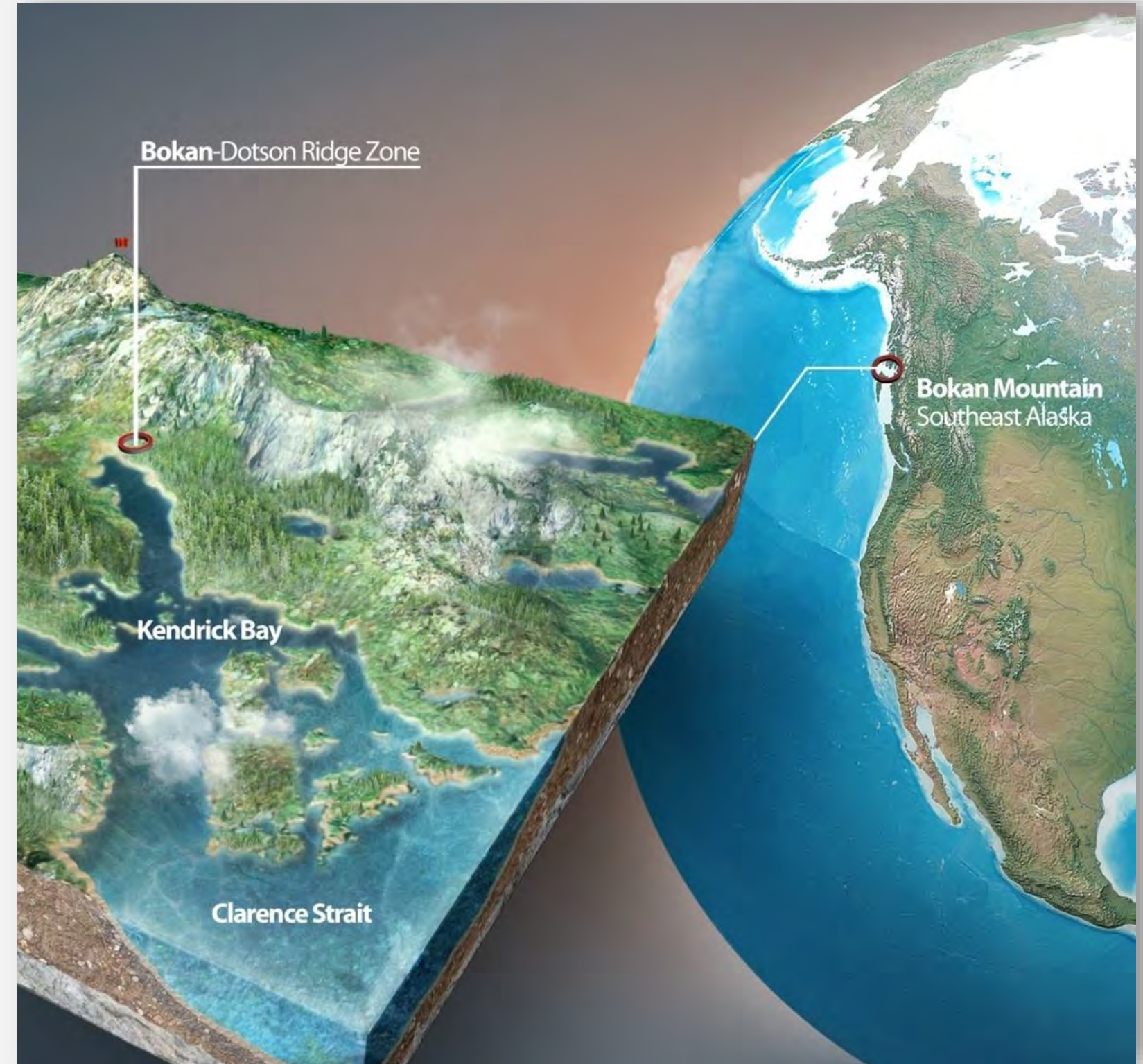
Bokan-Dotson Ridge REE Project

Prince of Wales Island, Alaska

- The Bokan Mountain Complex has approximately nine different historical mineralization zones but only one of these, the Bokan-Dotson Ridge Zone, has been the focus of Ucore's rare earth mineral resource development

The Bokan-Dotson Ridge Zone resource estimate:

- US \$145M State of Alaska authorized AIDEA bond financing for project infrastructure and construction costs under [SB99\(2014\)](#)
- Can be "near shovel ready" for construction in less than 30 months after receipt of development funding
- Further exploration planned concurrent with initial mining to expand the open resource
- The highest grade HREE resource in the US, disclosed per NI 43-101

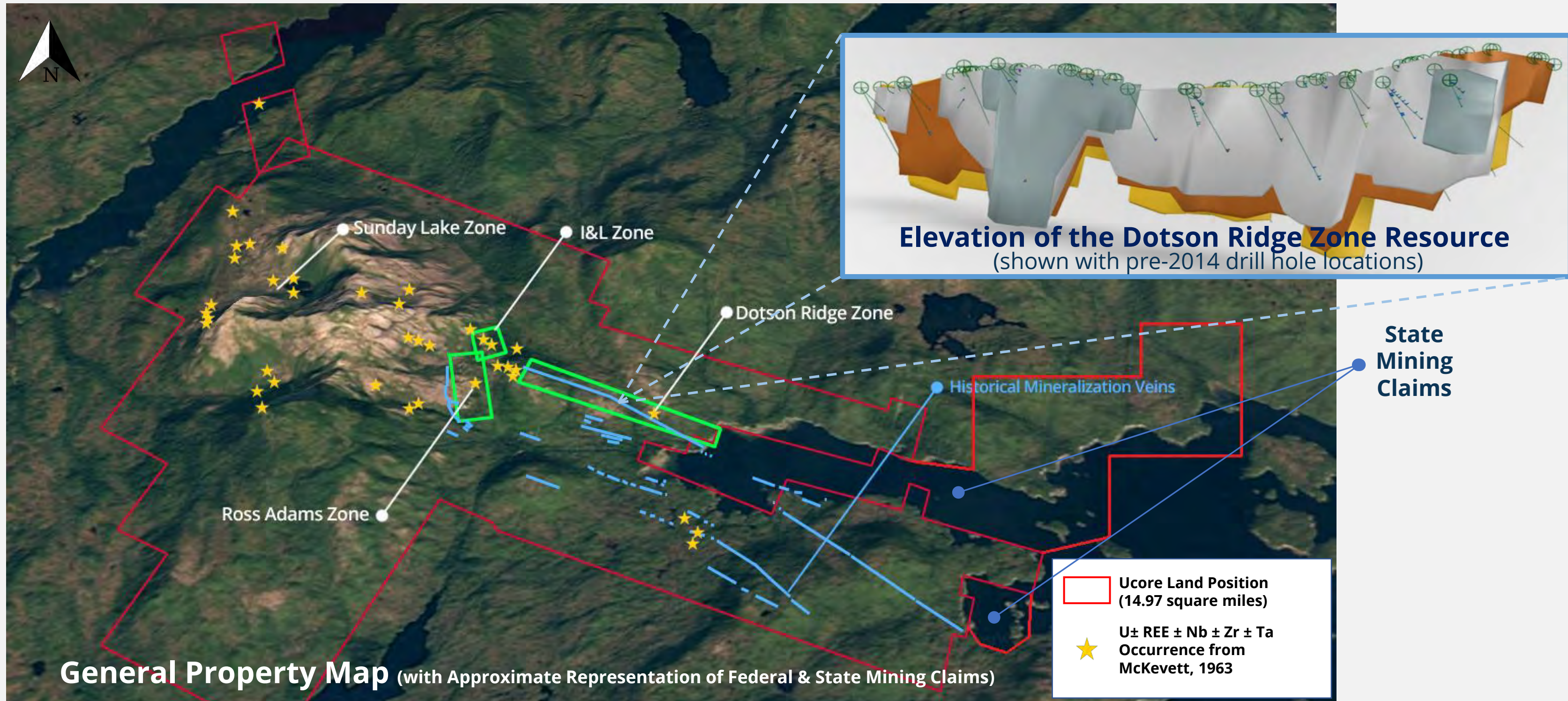


ALASKA-LT BUSINESS MODEL



Bokan Mountain Complex

The Bokan Mountain Complex & the Dotson Ridge Zone Resource



ALASKA-LT BUSINESS MODEL



Bokan Mountain Complex

Bokan-Dotson Ridge REE Project

Initial exploration is complete and an NI 43-101 PEA* is issued. Next steps - PFS and/or FS (to include the co-products of beryllium, zirconium, niobium & hafnium), detailed mine design, and permitting

A secure US domestic mine focused on the principles of ESG:

- No surface tailings at mine closure
- Reduced GHG in our processes
- A long-term solution for US manufacturers

* A PEA is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

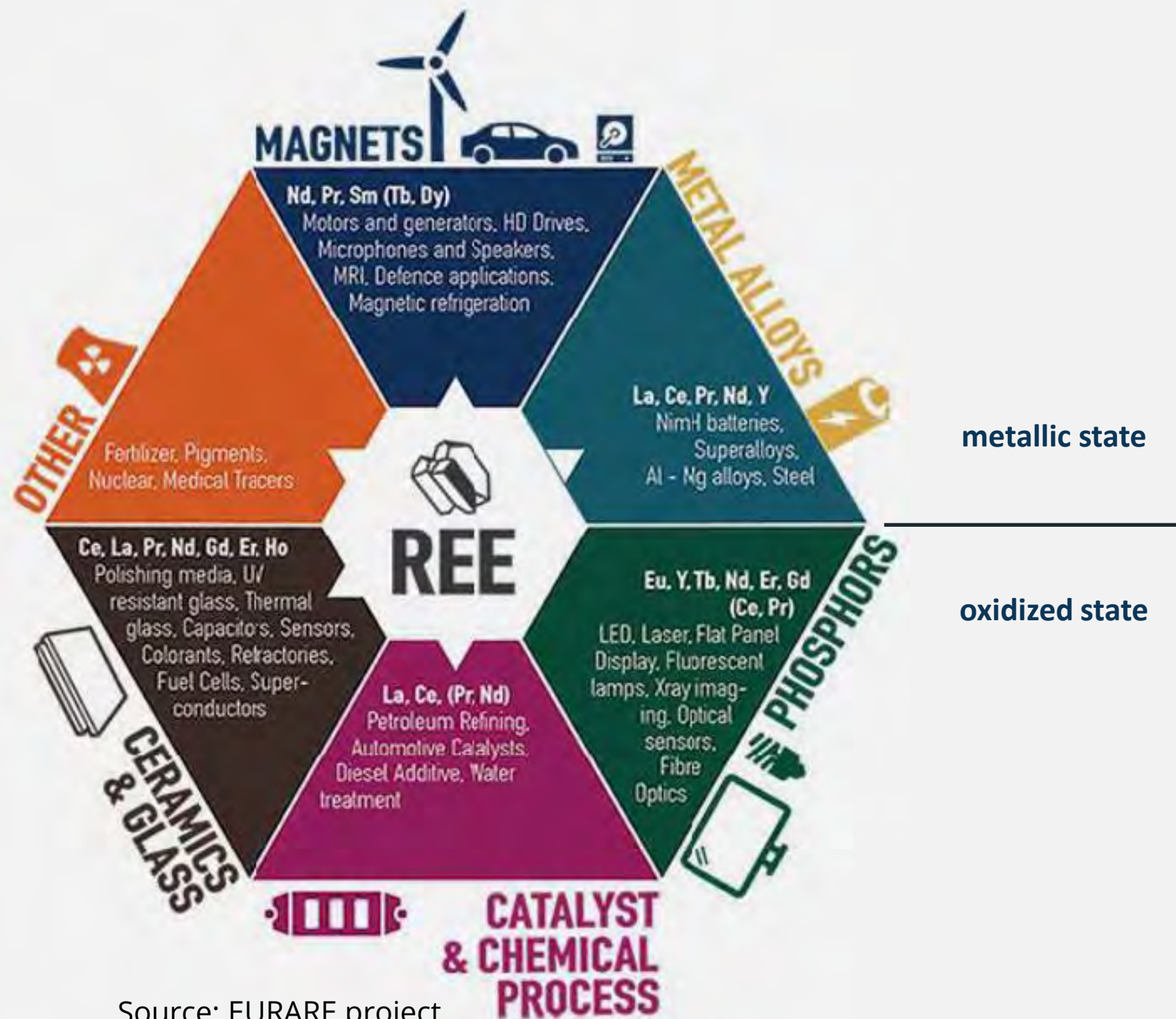
Annual Projected REO Production & Permanent Magnet Synchronized Motor Contribution

REO Grade	+ REO	REO Tonnes Per Annum	≈ Annual No. of 100 kw PMSM	Assumptions
	Lanthanum	181		
	Cerium	563		
99.50%	Praseodymium	70	400,000	0.7 kg mined 75%Nd25%Pr oxide per motor ¹
99.50%	Neodymium	275	523,000	0.7 kg mined 75%Nd25%Pr oxide per motor ¹
	Samarium	72		
	Europium	8		
99.50%	Gadolinium	76		
99.99%	Terbium	14	411,000	1g of Tb for every 3g of Dy
99.50%	Dysprosium	84	823,000	102g mined Dy oxide per motor ¹
99.50%	Holmium	16		
	Erbium	46		
	Thulium	6		
	Ytterbium	30		
	Lutetium	3		
	Yttrium	543		
	Annual Total	1,987		

¹ Source: Adamas Intelligence

ALASKA2023 BUSINESS MODEL

Example Downstream REE Market Companies



Source: EURARE project

Consumer Electronics

Apple, LG, Samsung

DOD & DOE Contractors

Materion, Boeing, General Dynamics, Lockheed, Northrop Grumman, Raytheon

Electric Vehicles

Daimler, FCA, Ford, GM, Honda, Nissan, Tesla, Toyota, Renault, VW

Magnets

Hitachi, EEC, Shin-Etsu, TDK

THE STRATEGIC ALLIANCE SOLUTION

Critical Metal Opportunities Beginning with REE

North American &
Allied Nation Mineral
Resources

Best-In-Class
Critical Metals
Separation
Technology

Worldwide
Strategic Ventures

Evolving Consortium of Strategic Development Partners



MATERION



SUMMARY

The Time is now for a Secure North American REE Supply Chain

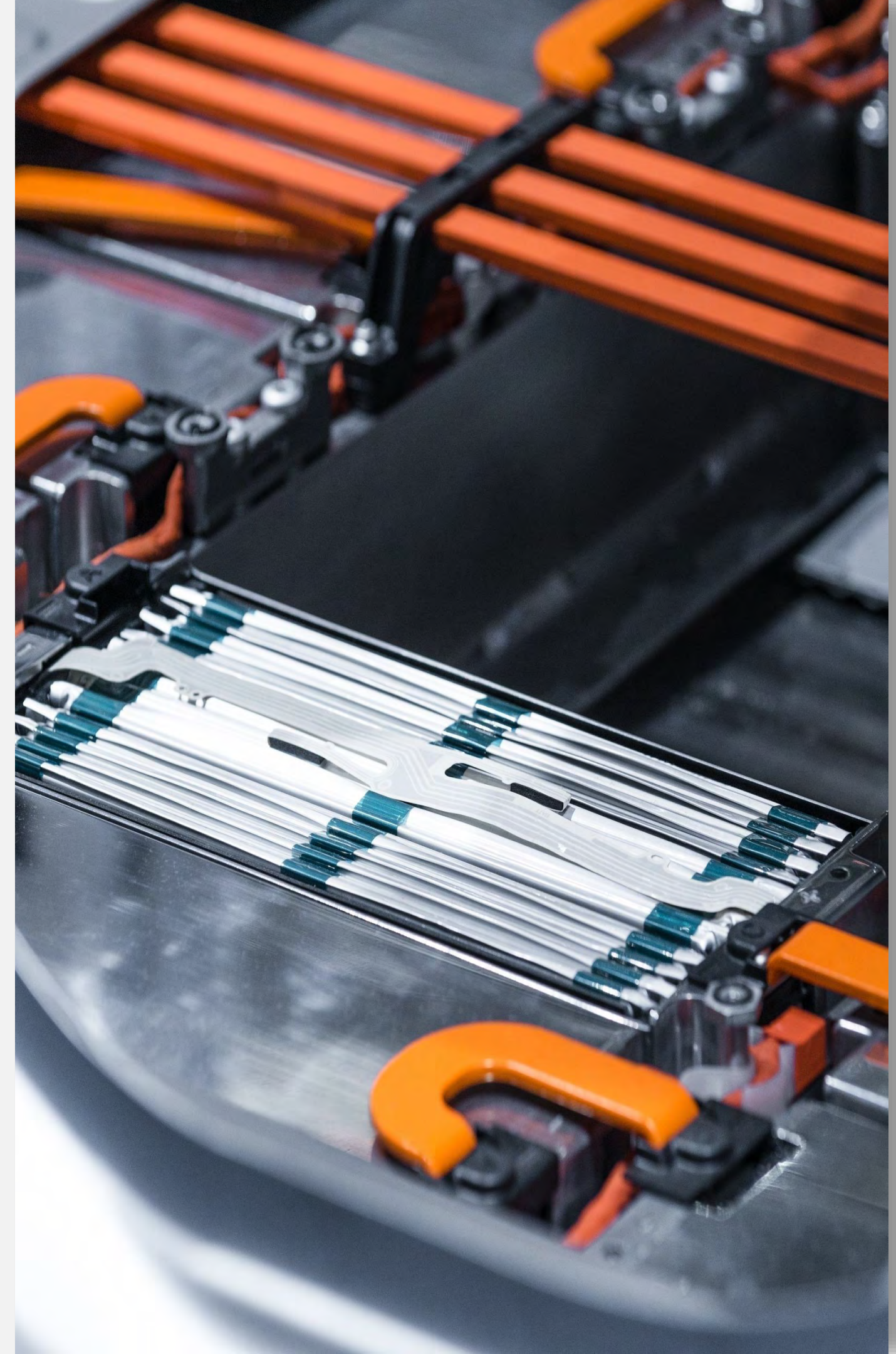
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Ucore proposes a North American centric solution to the current critical minerals national emergency due to reliance on foreign adversaries.

- Significant project political support at the state & federal levels
- Enhanced government REE policies and funding opportunities
- **Ucore is actively engaged in:**
 - Through IMC, commercial deployment of the RapidSX separation technology platform
 - Securing third-party allied-sourced feedstock for the Alaska SMC
 - Engineering for the Alaska SMC REE separation & purification plant founded on modern RapidSX technology
 - Forming a strategic alliance for a continental US LREE separation plant
 - Engineering and testing for the Bokan Project

**“Is Ucore up for the challenge?
Just watch us.”**

Pat Ryan, Ucore Chairman & CEO





Ucore Rare Metals Inc.

TSXV:UCU | OTCQX:UURAF
ucore.com



Thank you, Questions?

■ American Critical-Metals Independence Starts Here