

# Recycling & Clean Processing Technologies Valorization of Primary & Secondary Resources

March 31, 2022 – OTC & Virtual Investor Conferences

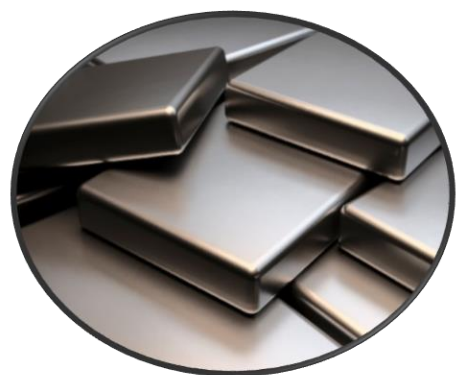
Disruptive technologies: investing in Quebec's critical and strategic  
minerals and high-tech sectors

# Forward Looking Statement

*Our presentation contains "forward-looking statements" not based on historical facts. Forward-looking statements express, as of the date of this presentation, our estimates, forecasts, projections, expectations and opinions as to future events or results. The forward looking statements that are contained in this presentation are based on various assumptions and estimates by the Corporation and involve a number of risks and uncertainties. As a consequence, actual results may differ materially from results forecast or suggested in these forward-looking statements and readers should not place undue reliance on forward-looking statements. We caution you that such forward-looking statements involve known and unknown risks and uncertainties, as discussed in the Corporation's filings with Canadian Securities Administrators. Various factors may prevent or delay our plans, including but not limited to, contractor availability and performance, weather, access, mineral prices, success and failure of the exploration and development carried out at various stages of the program, and including as regards the commercialization of any of the technology, general business, economic, competitive, political and social conditions. The Corporation expressly disclaims any obligation to update any forward-looking statements, except as required by applicable securities laws.*



# Clean Technologies for Sustainable Metals



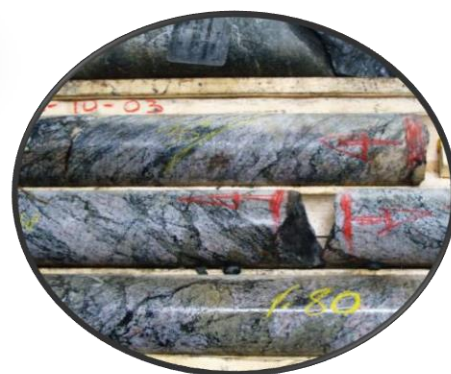
## REE Recycling

- Fully funded to develop the 1<sup>st</sup> rare earth magnet recycling facility outside of Asia
- Ongoing detailed engineering in preparation to procurement and construction
- Sustainable solution to the magnets that drive transport electrification and the global renewable energy movement



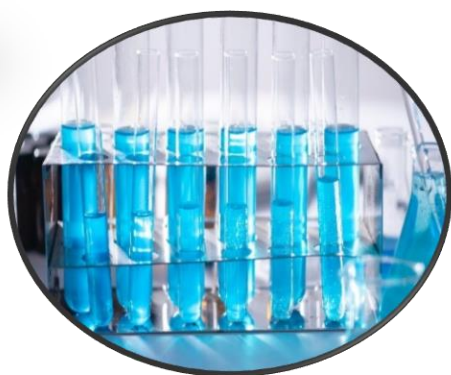
## Bauxite Residues Sustainable Processing

- Working on a \$4M pilot plant & feasibility study with Rio Tinto and supported by SDTC and Quebec Government
- Production of bulk metals (Fe, Al) while reducing waste volume >80%
- Recovery of valuable critical metals (REE, Sc, Ti, V) and recycling of main reagents



## Montviel REE Deposit

- Largest rare earth Bastnaesite 43-101 resource estimate in North America
- Patented metallurgical process
- Road and power infrastructure



## Other Sources & Other Metals

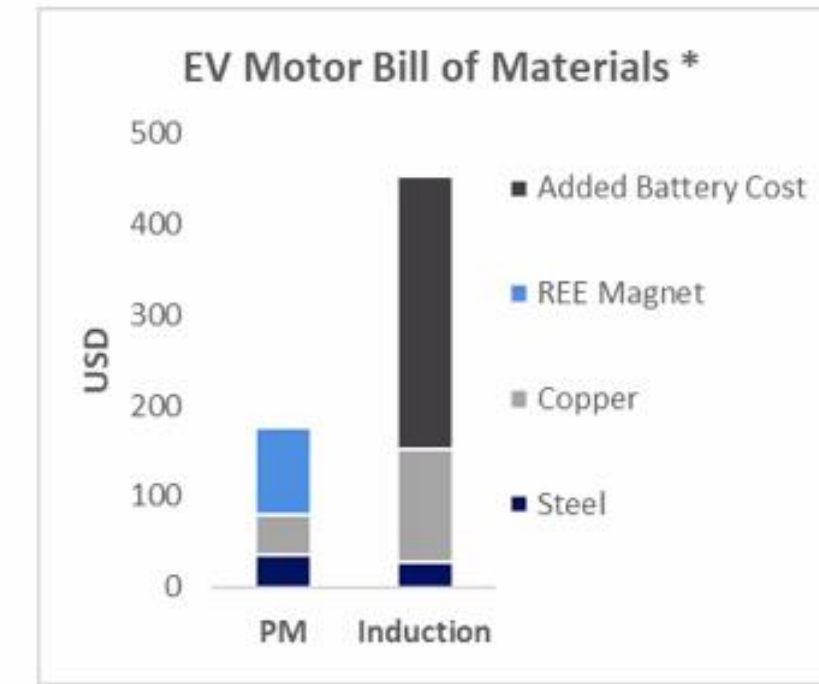
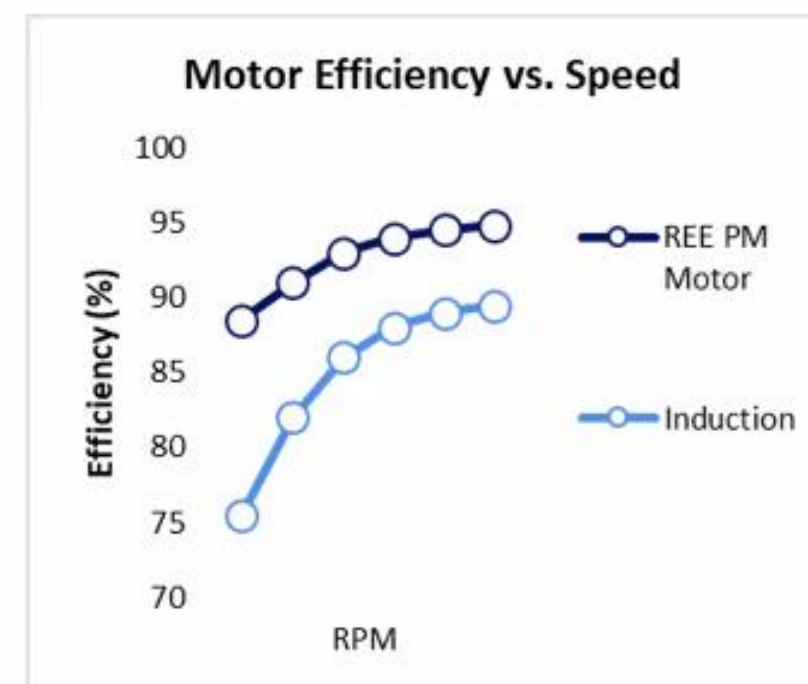
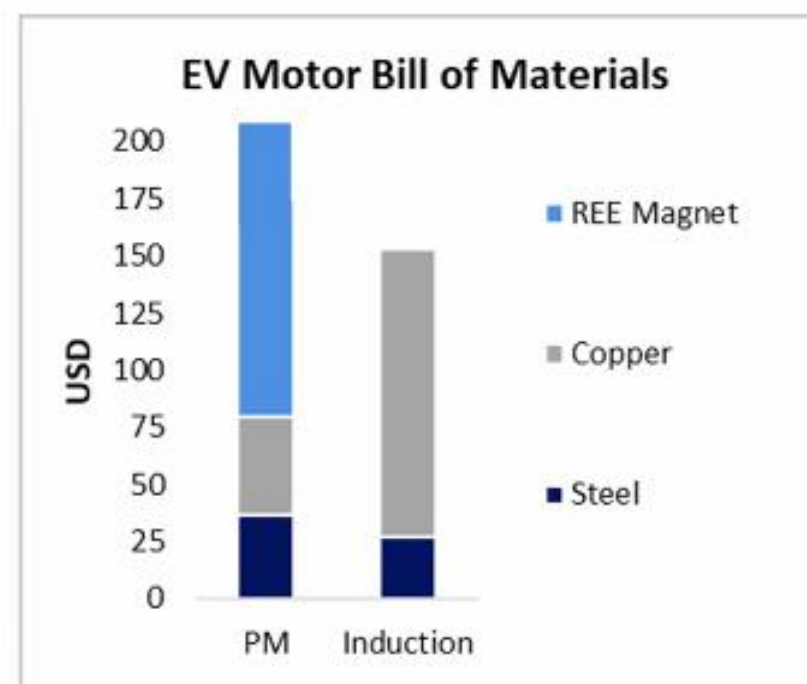
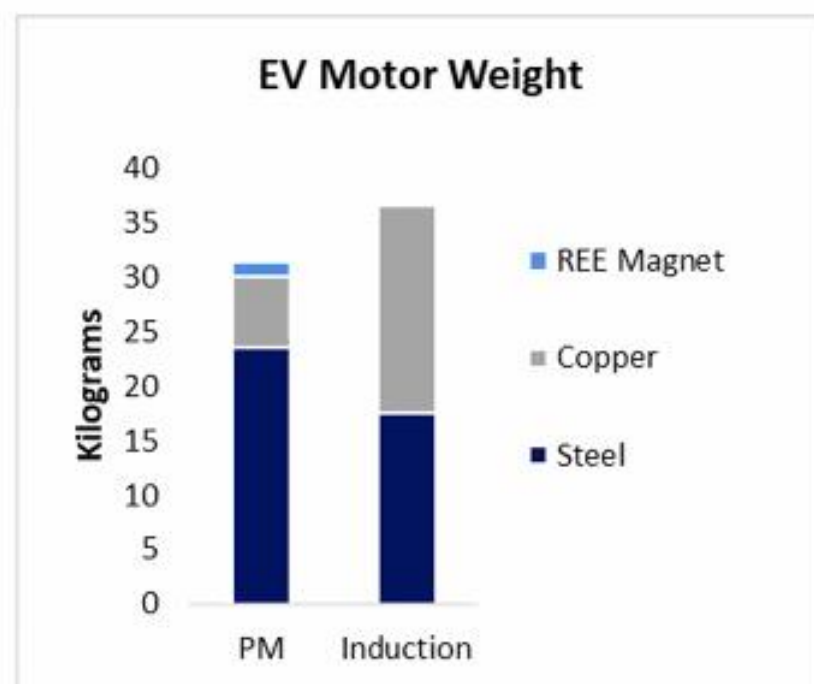
- Strong technical team led by CTO Dr. Pouya Hajiani
- Leveraging REE expertise to evaluate other sources (mining, industrial & e-waste)
- Healthy pipeline of projects targeting REE, Lithium, Graphite, Hydrogen and other materials





# REE Recycling

# Permanent Magnet Sector



**Lightest, most power-dense, most efficient type of EV traction motor commercially available**

**Used in over 90% of all EVs produced globally to-date**

**BOM for a typical PMSM is around 20-40% higher than that of comparable induction motor**

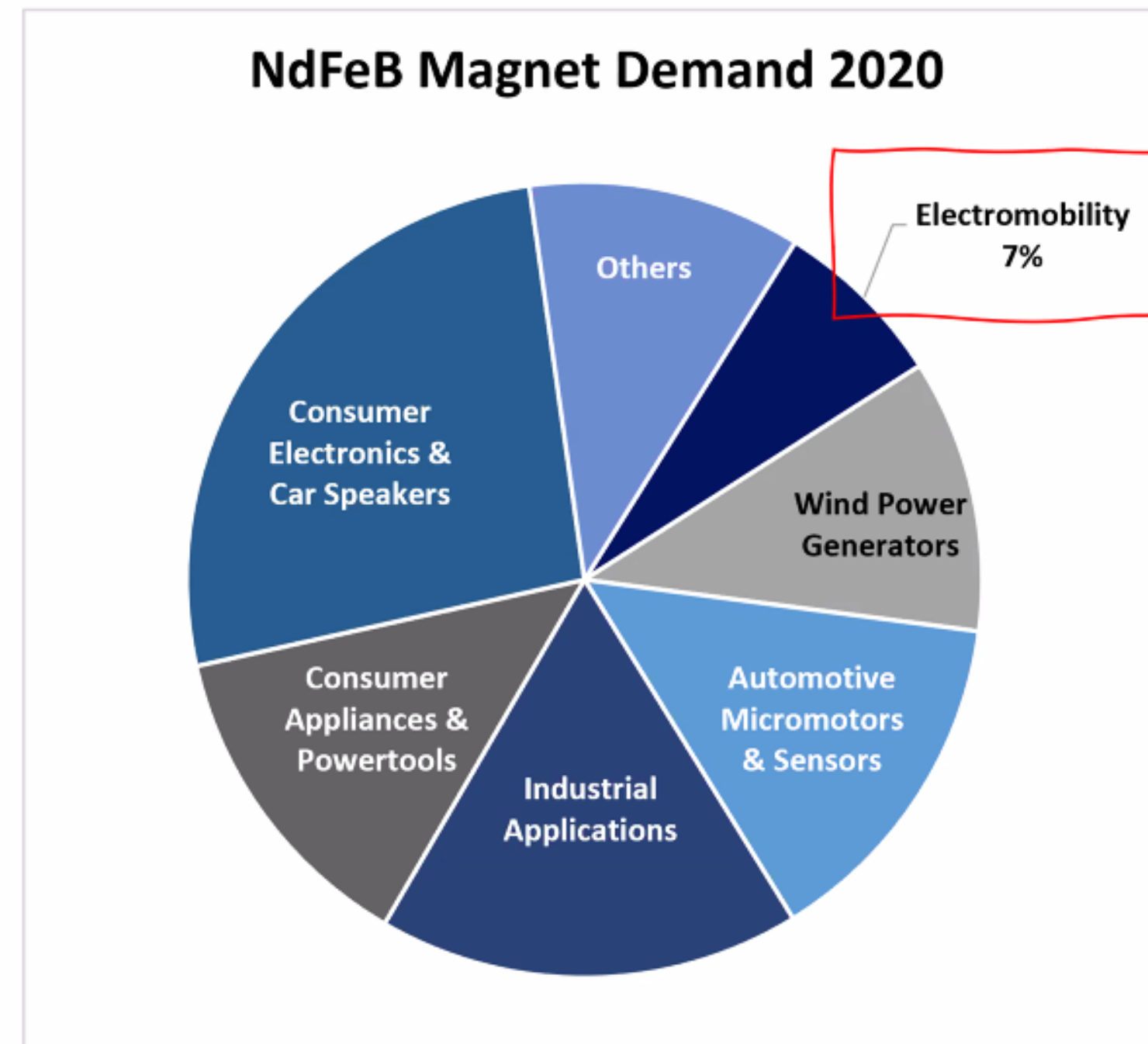
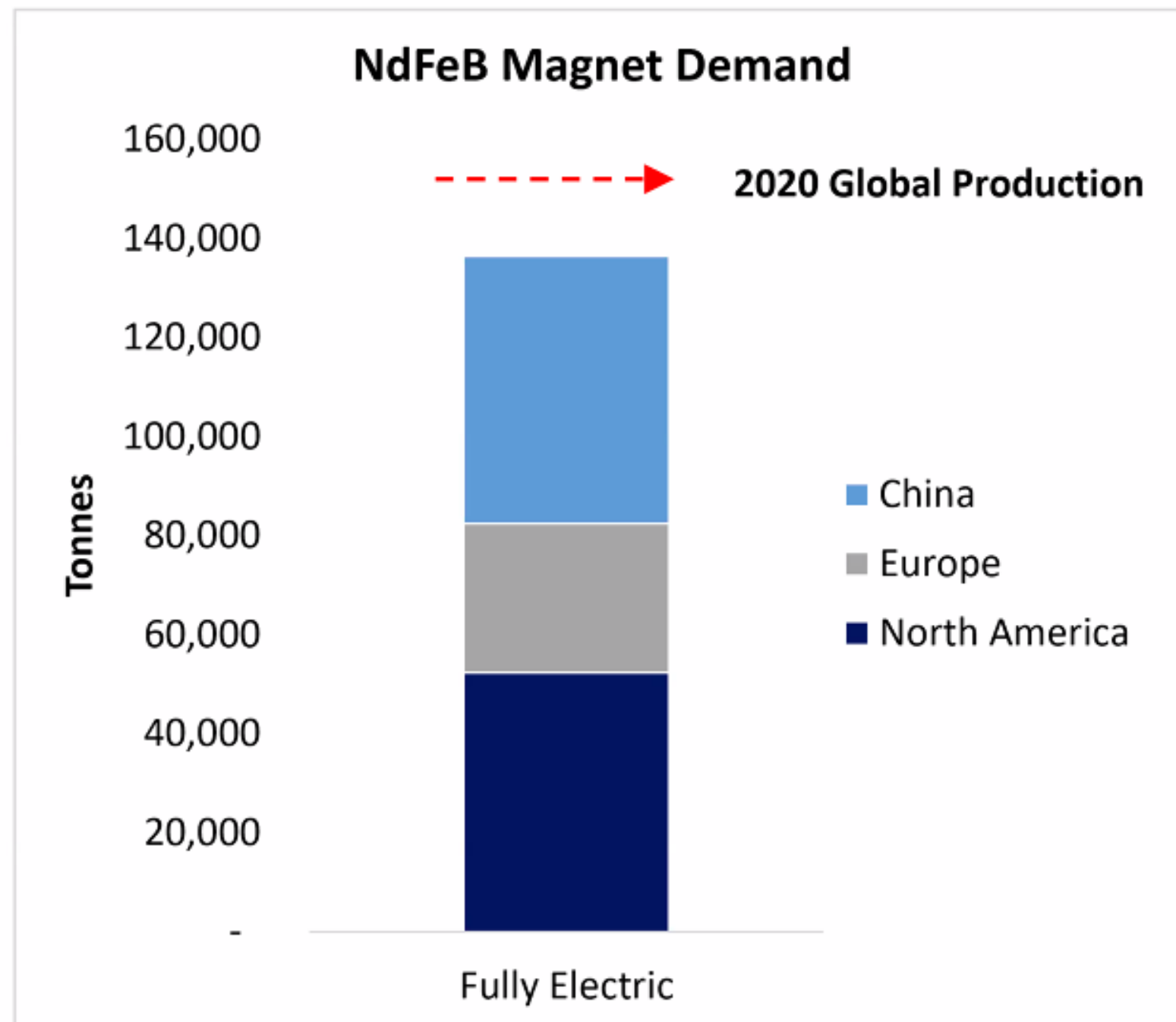
**PMSM around 10-15% more efficient than comparable induction motor**

**Increasing pack capacity of 60kWh BEV by 5% = \$300**

**Increasing pack capacity of 60kWh BEV by 15% = \$900**

Source: Adamas Intelligence REE Day Oct 2021

# Permanent Magnet Sector

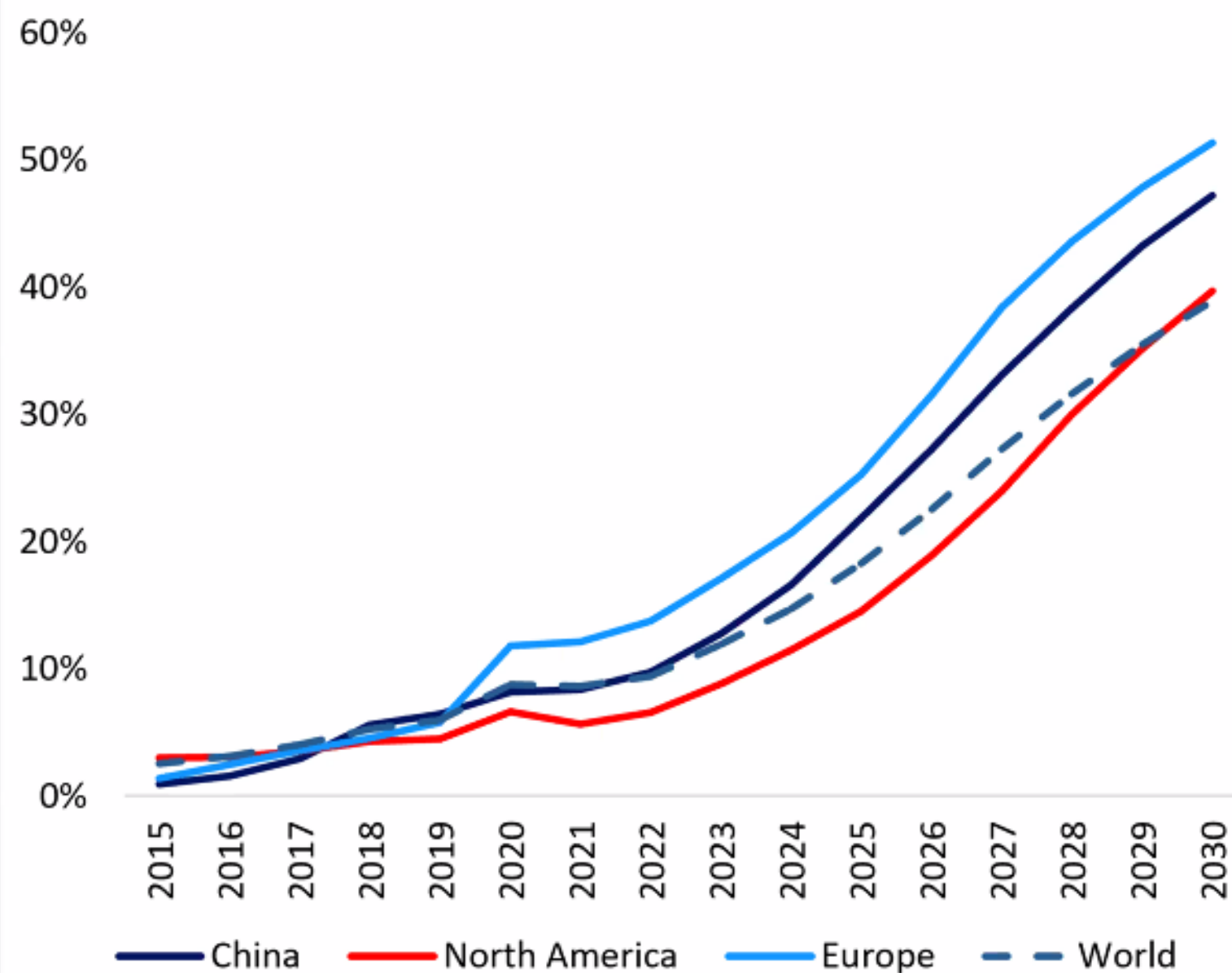


Source: Adamas Intelligence REE Day Oct 2021



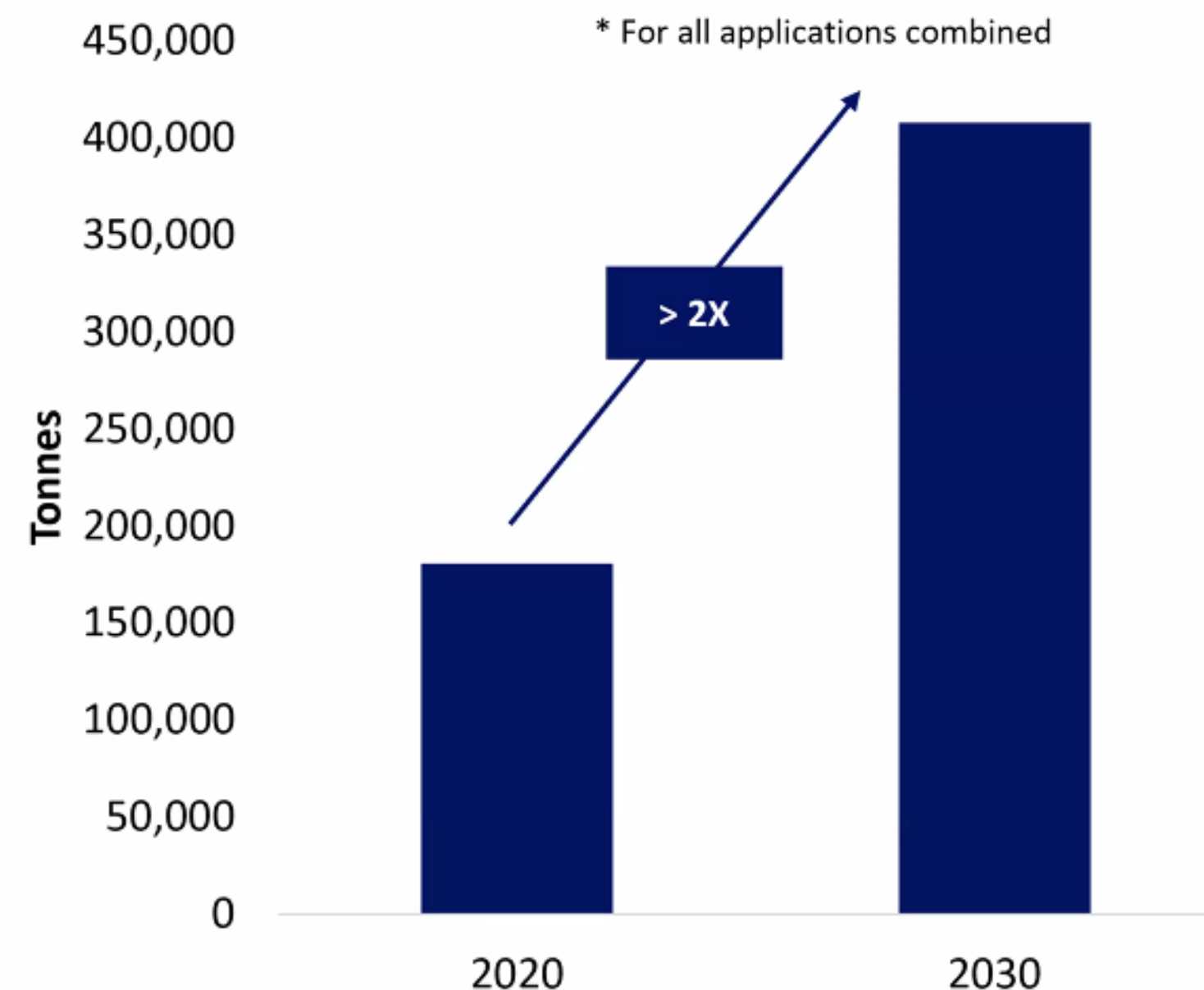
# Permanent Magnet Sector

## BEV + PHEV + HEV Market Share



\* Excludes mild and micro HEVs

## Global NdFeB Alloy & Powder Demand



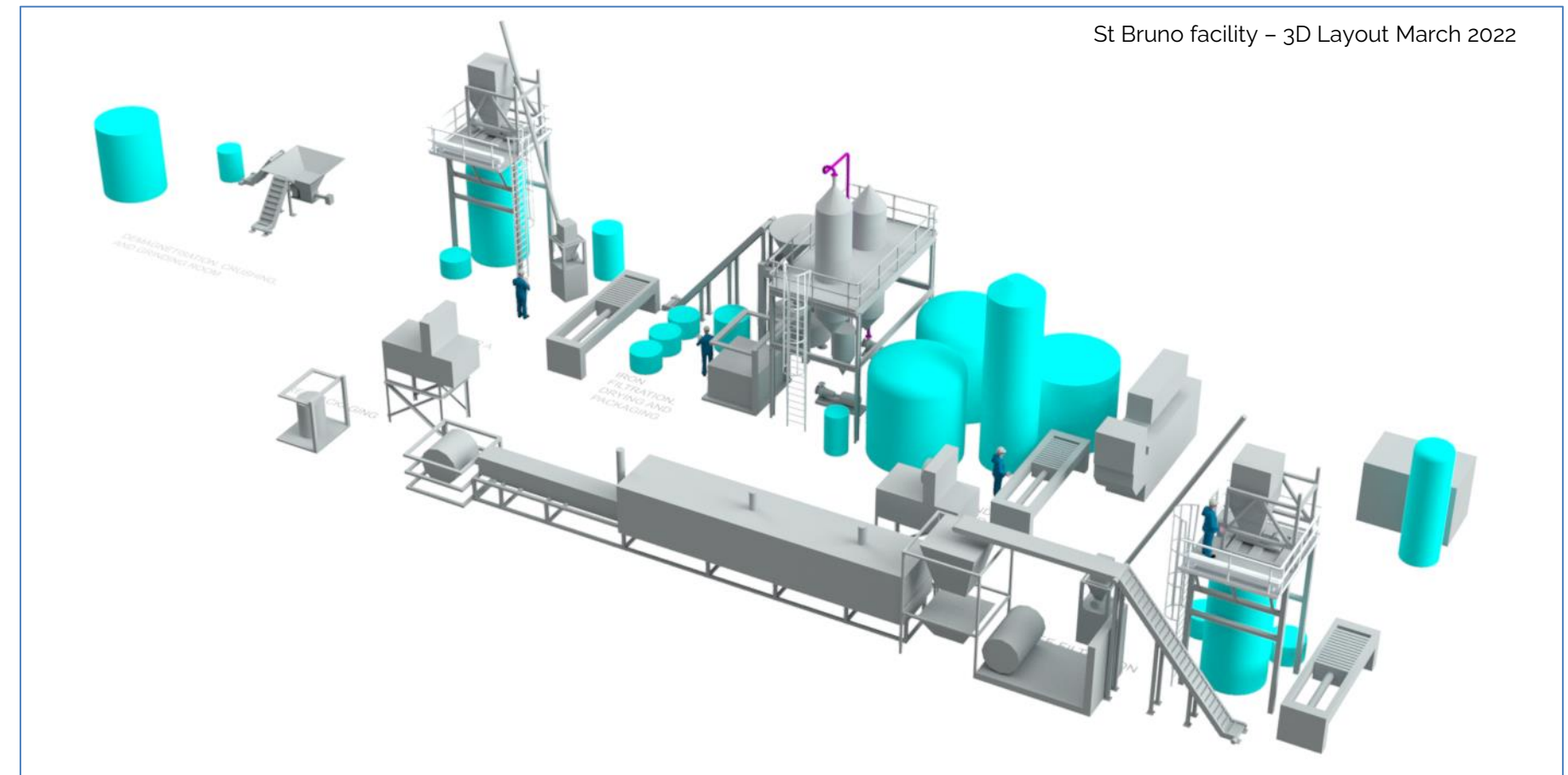
Source: Adamas Intelligence REE Day Oct 2021

# REE Recycling Demo Plant

- Facility in Saint-Bruno, Quebec
- 1<sup>st</sup> of its kind recycling plant in North America
- Conservative economics based on bottom prices
- Nd, Pr, Tb, Dy prices – 3x increase since 2019

## Demo Plant Economics

Demo plant feed throughput	1.5 tpd / 8hr day
Average grade of feed stock	30% TREO (Nd, Pr, Dy, Tb)
Capital costs (inc. WC)	\$4.8 M
Direct operating costs	\$3 / kg of TREO
Targeted Sales (2019 prices)	\$10 M
Target Profit Margin	20%
<b>Conversion to Commercial Plant</b>	<b>Up to 4.5 tpd / 24hr operation</b> Additional costs \$1M-\$2M Targeted Sales \$30 M



- Detailed Engineering ongoing
  - PFD, PCD – completed
  - P&ID – 50% and ongoing
- Procurement – ready to start
- Pre-construction – finalizing service provider



# REE Recycling Pilot Plant

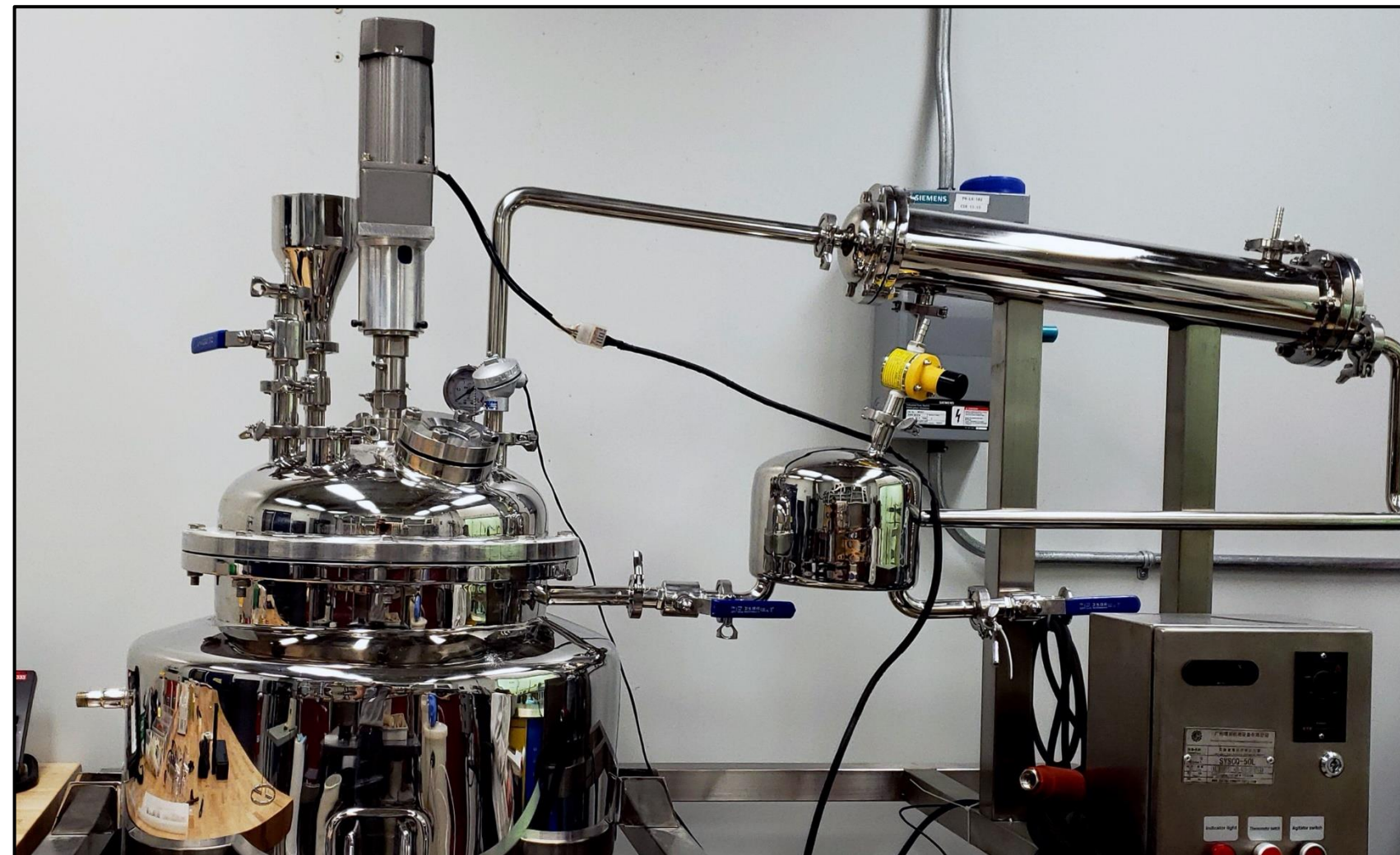
- Proprietary technology
- Environmentally safe
- Small footprint
- Low CAPEX



Source: Rocklink GMBH

**Magnet Feed**

- Recovery of main reagents > 90%
- No liquid effluent produced
- Lower GHG emissions than conventional mining



**Pilot Unit**

- High purity, >99.5% REO Product
- Iron oxide as by-product



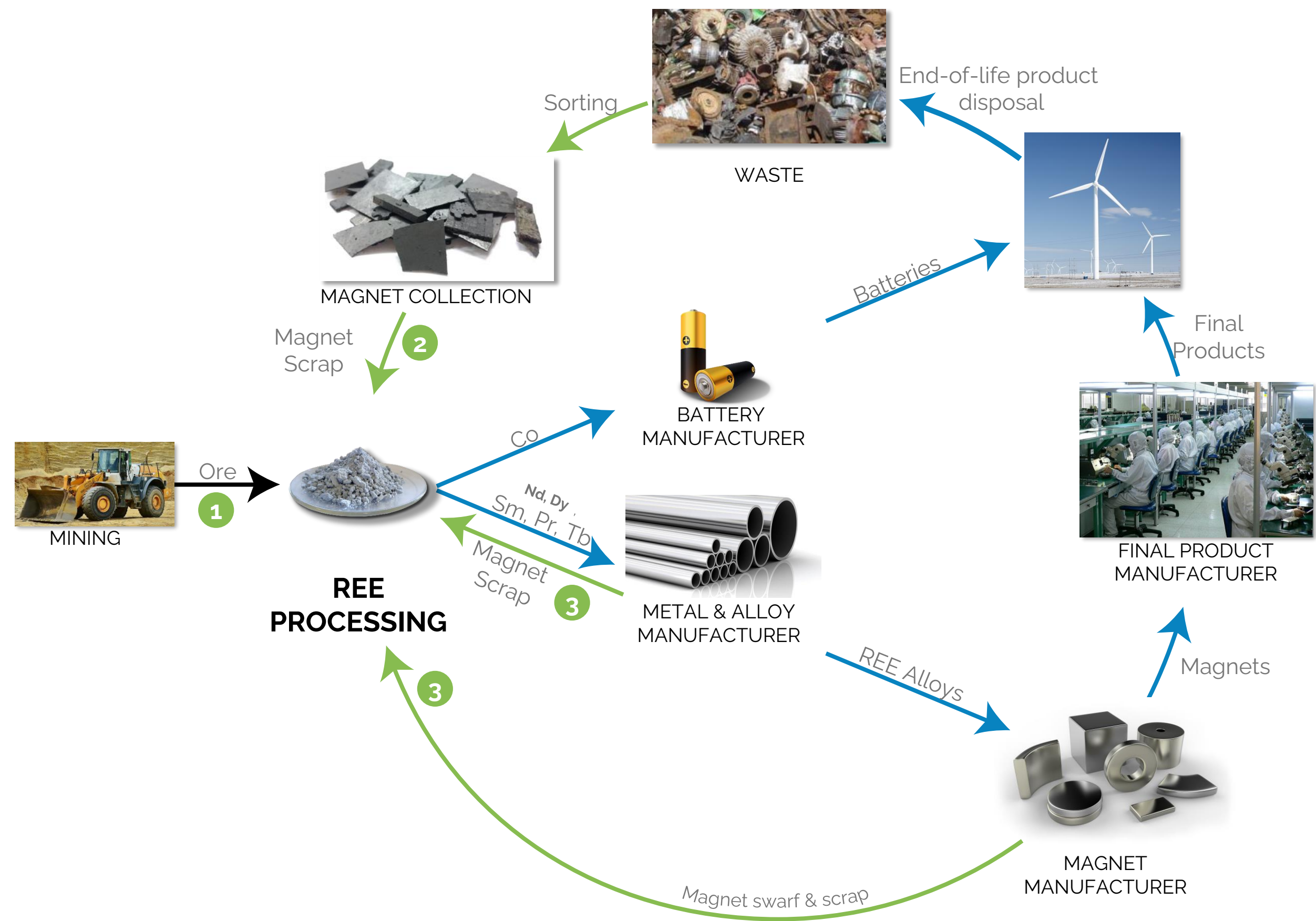
**REO Product**



**Iron By-Product**



# REE Circular Economy







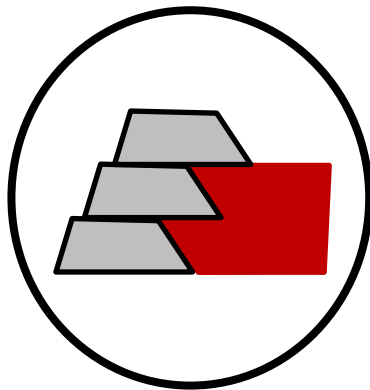
# Bauxite Residues Valorization



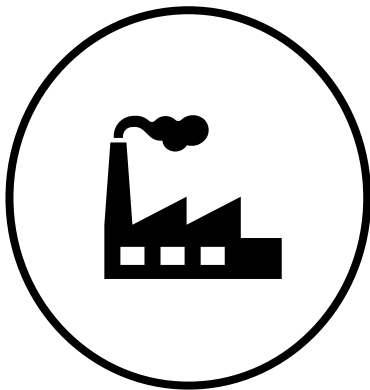
# Bauxite Residues Valorization



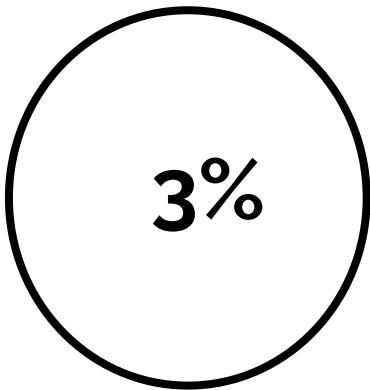
>80 plants generate Bauxite Residues from producing alumina



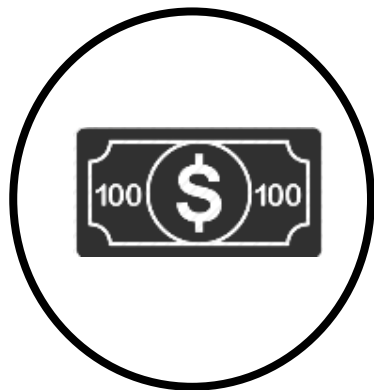
Over 4 B tonnes of Bauxite Residues are stored in tailings globally



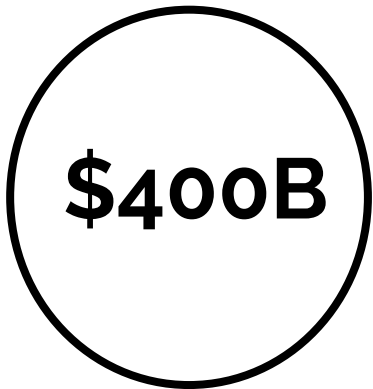
Over 150MT of Bauxite Residues are produced annually worldwide



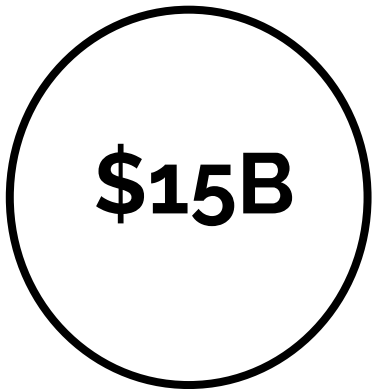
Proportion of Bauxite Residues used today



\$100 in lost metal value per tonne of bauxite residues

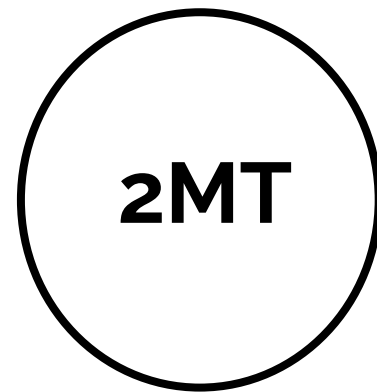


in metal value in storage

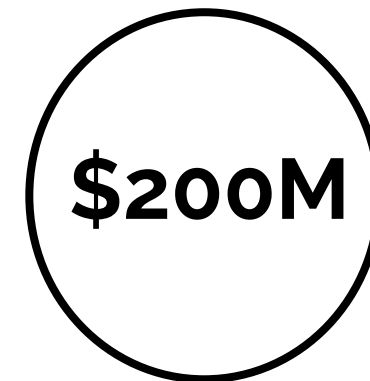


in metal value in annual bauxite residues production

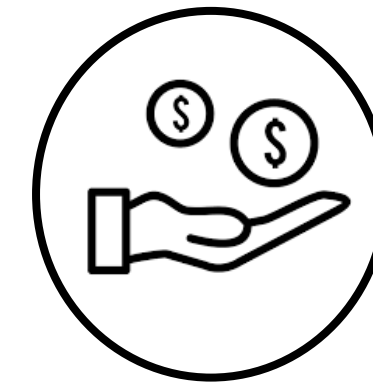
# Bauxite Residues Value Proposition



Average plant production  
of bauxite residues per year

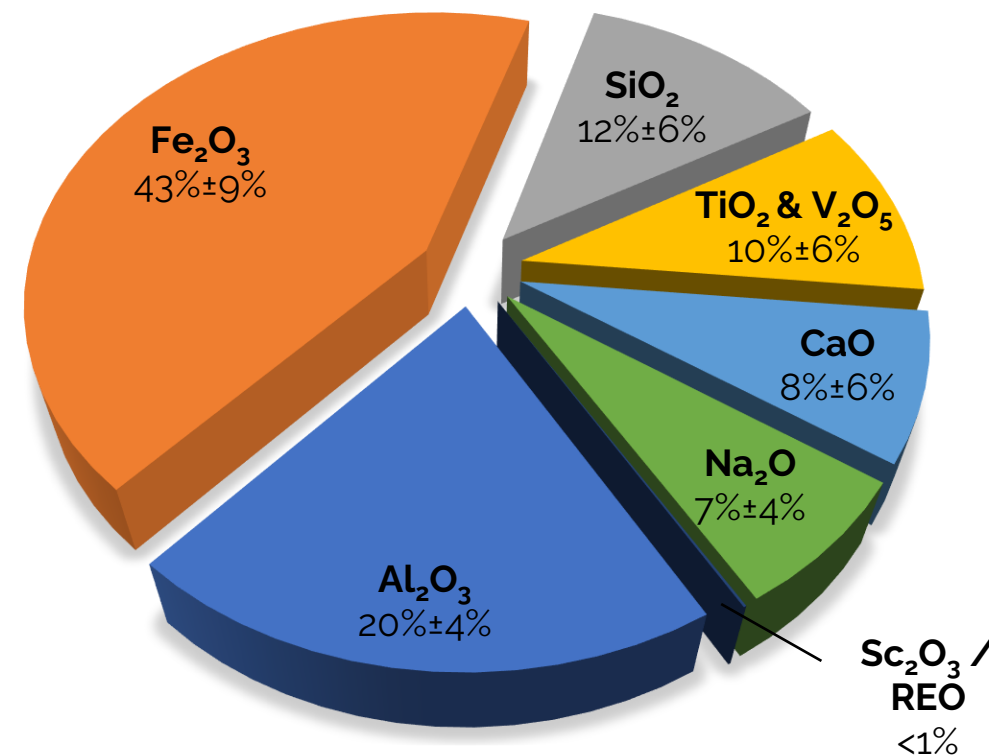


in metal value per year  
mostly in Iron, Aluminum  
and Scandium

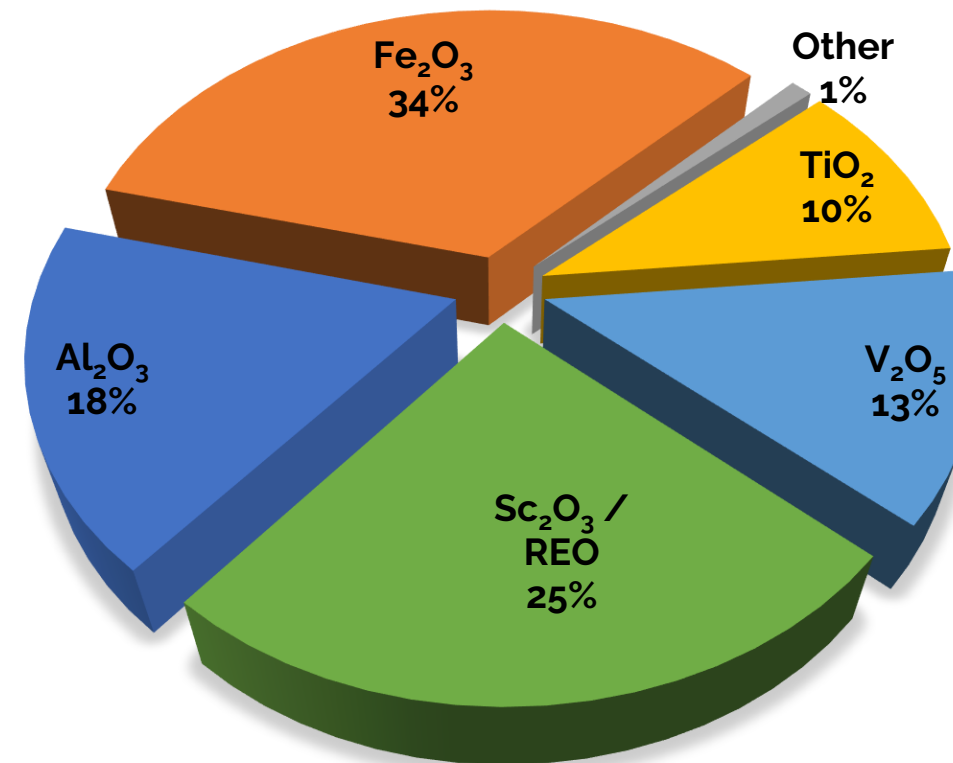


Technology to be deployed  
globally through licensing  
and royalty agreements

Average composition



Value distribution\*



\*Estimated at \$100/T and 80% recovery

# Bauxite Residues Technology



- Recovery of **bulk metals (Fe, Al)** to maximize **volume reduction (70-90%)**
- Recycling of main reagents to **reduce costs and effluents**



- Production of **valuable** minor metals concentrates (Ti, V, Sc/REE)
- To develop **sustainable** Scandium supply for the automotive, aerospace and other industries



- To conserve and contribute to **cleaner water**
- To remove potential **soil** contamination from seepage

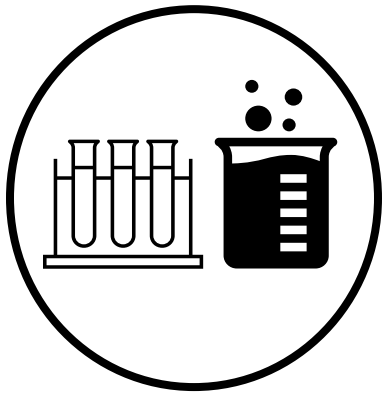


# Bauxite Residues Technology



- Working with Rio Tinto – Aluminum producer with major operations in Quebec
- Pilot Plant & Feasibility Study - \$4M
- Project Funded by a consortium:

**SDTC** (\$1.5M), **Rio Tinto** (\$1.2M), **Quebec** (\$300K), **Geomega** (\$550K), Other (\$450K)



- Bench scale successfully demonstrated
- Positive internal economic evaluation
  - **Synergy** between various processing steps
  - **Non-corrosive** main reagents eliminates the need for high-cost specialized equipment
  - No sophisticated purification steps **reduces CAPEX** and **de-risks scale-up**
- **IP** remains with Geomega





# Montviel Project (REE, Nb)

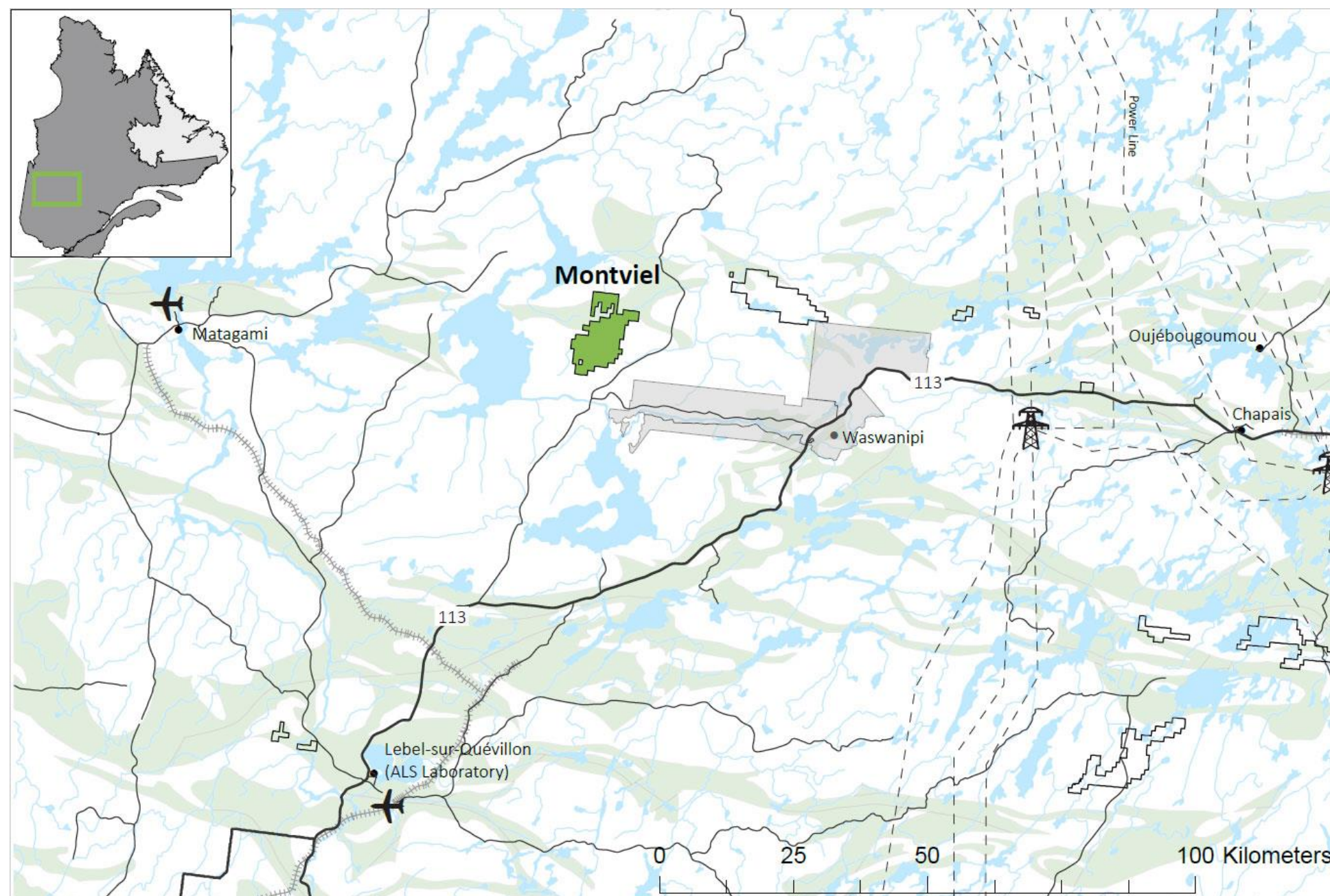


## 82.4Mt Indicated

43-101 Resource Estimate (2015)



**1.5% TREO**  
**0.17% Niobium**



✓ Power    ✓ Road    ✓ Labour



# Montviel REE Project

- **100% owned** by Geomega
- **Largest** rare-earth Bastnaesite 43-101 resource estimate in **North America**
- 82.4 Mt @ 1.5% TREO & 0.17% Nb<sub>2</sub>O<sub>5</sub> Indicated and over 184Mt Inferred
- The **most accessible** REE project in Canada
- Strong support from the **Quebec government**, local communities and the **CREE First Nations**
- **Patented** metallurgical process (US15/578,498)



# Montviel Metallurgy Improvements

- **Project announced Feb 2022**
  - Process simplification
  - Removal of flotation circuit
  - Iron valorization
  - Reagent recycling
  - Internal techno-economical study
- **Budget: \$864K funded by Quebec (MERN) & Institutional**



# Montviel Economical Benefits



**Lower  
Reagents Cost**



**Energy Savings**



**Higher REE  
Recoveries**



**Lower Mining Waste  
Management Costs**



**Valuable  
By-Products**



# Montviel Environmental Benefits



**Reduced Water  
Consumption**



**Reduced  
Effluents**



**Reduced Energy  
Consumption**



**Reduced Waste  
Volume**



**Reduced GHG**



**Iron Removal & Valorization**



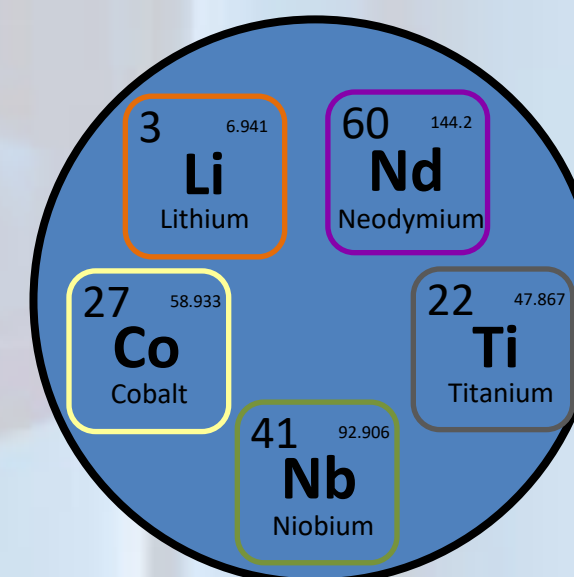
**Reagent Recovery**



**Environnemental Footprint Reduction**



**Waste Volume Reduction**



**Valorization of Critical & Strategic Metals**



# Management Team

**Kiril Mugerman**

Director, President & CEO

**Dr. Pouya Hajiani**

Chief Technology Officer

**Mathieu Bourdeau**

Chief Financial Officer

**Alain Cayer**

VP Exploration

## Board of Directors

**Gilles Gingras**

Ex-partner at Deloitte

**Kosta Kostic**

Partner at Fasken

**Mario Spino**

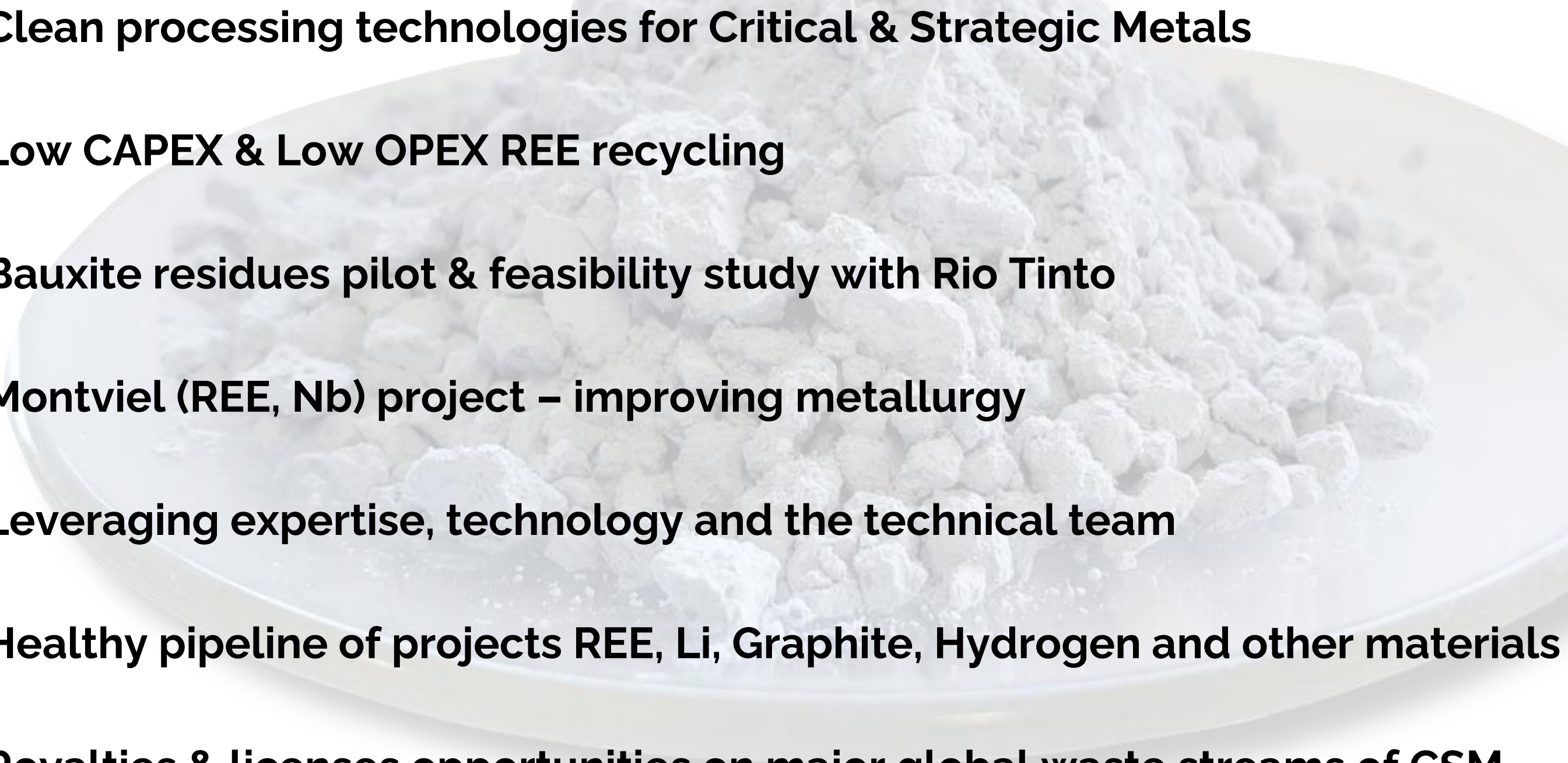
Financial Modeling at  
National Bank Financial

**Nicholas Nickoletopoulos**

President & Managing Director of Metalunic  
Prev. President & CEO of Urecon

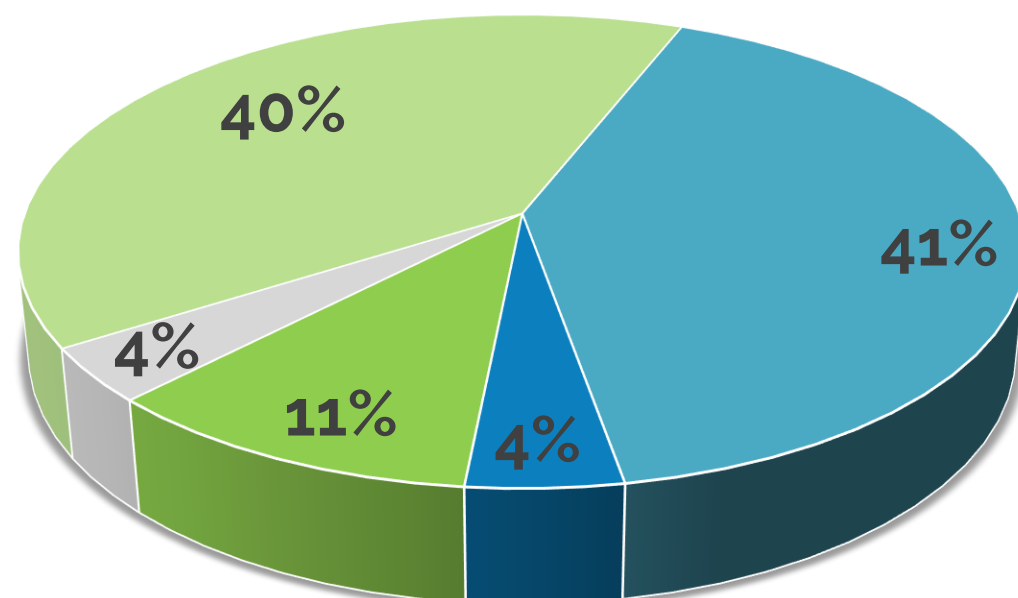
**Matt Silvestro**

President & Owner of  
Jobmaster Magnets

- 
- **Clean processing technologies for Critical & Strategic Metals**
  - **Low CAPEX & Low OPEX REE recycling**
  - **Bauxite residues pilot & feasibility study with Rio Tinto**
  - **Montviel (REE, Nb) project – improving metallurgy**
  - **Leveraging expertise, technology and the technical team**
  - **Healthy pipeline of projects REE, Li, Graphite, Hydrogen and other materials**
  - **Royalties & licenses opportunities on major global waste streams of CSM**



# Share Structure



- Management & Insiders
- Quebec & Inst. Funds
- Strategic Investors
- Private Large Positions
- Retail

**Analyst coverage:**  
Fundamental Research: \$1.20 target

\*Debt financing from IQ for \$3M has not yet been withdrawn

**Issued & Outstanding (31/11/2021) 130,217,211**

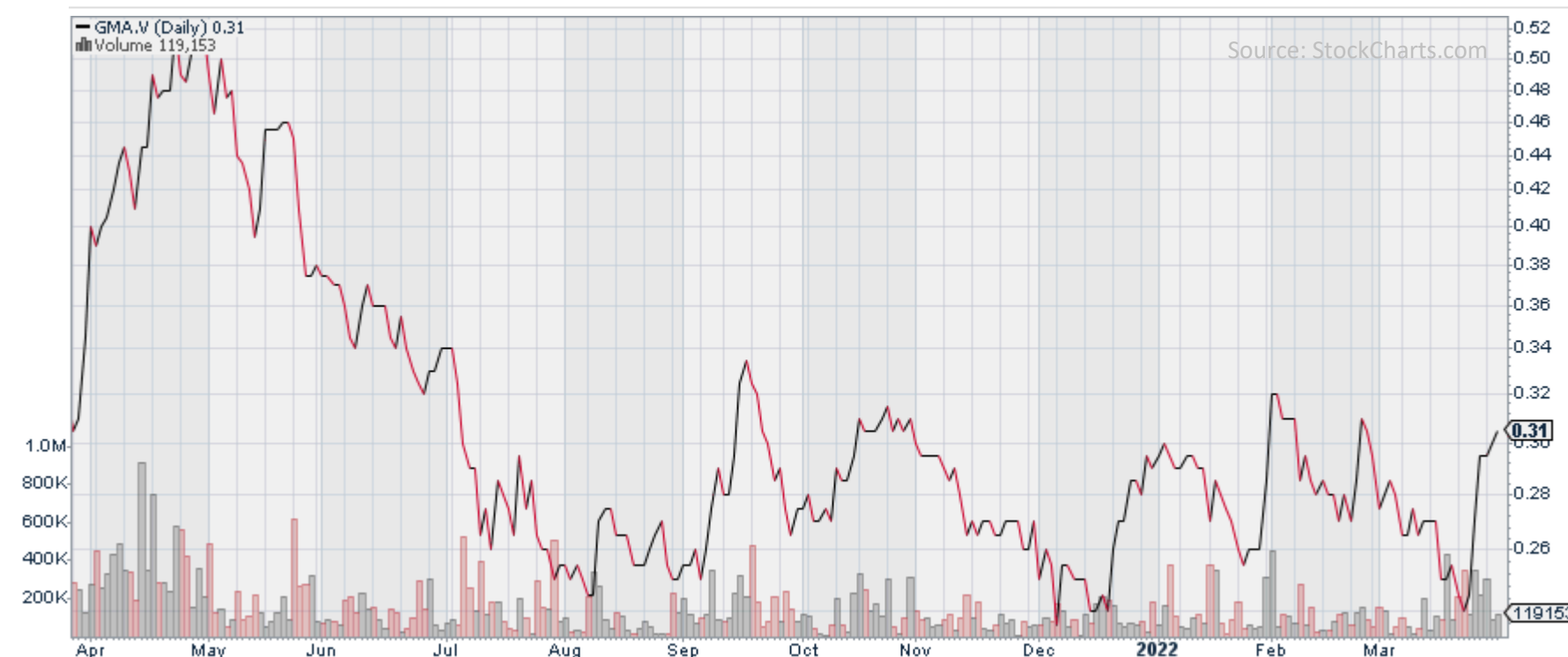
Stock Options 10,291,250

Warrants (2.2M - \$0.15, 14.8M - \$0.22) 17,039,137 (exp 2022)

Fully-Diluted 157,547,598

Equity assets 16.8M shares of KTR.V

Cash \$3.1M & \$3M IQ\*



# Rare Earths Recycling & Clean Processing Technologies



Kiril Mugerman – President & CEO

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