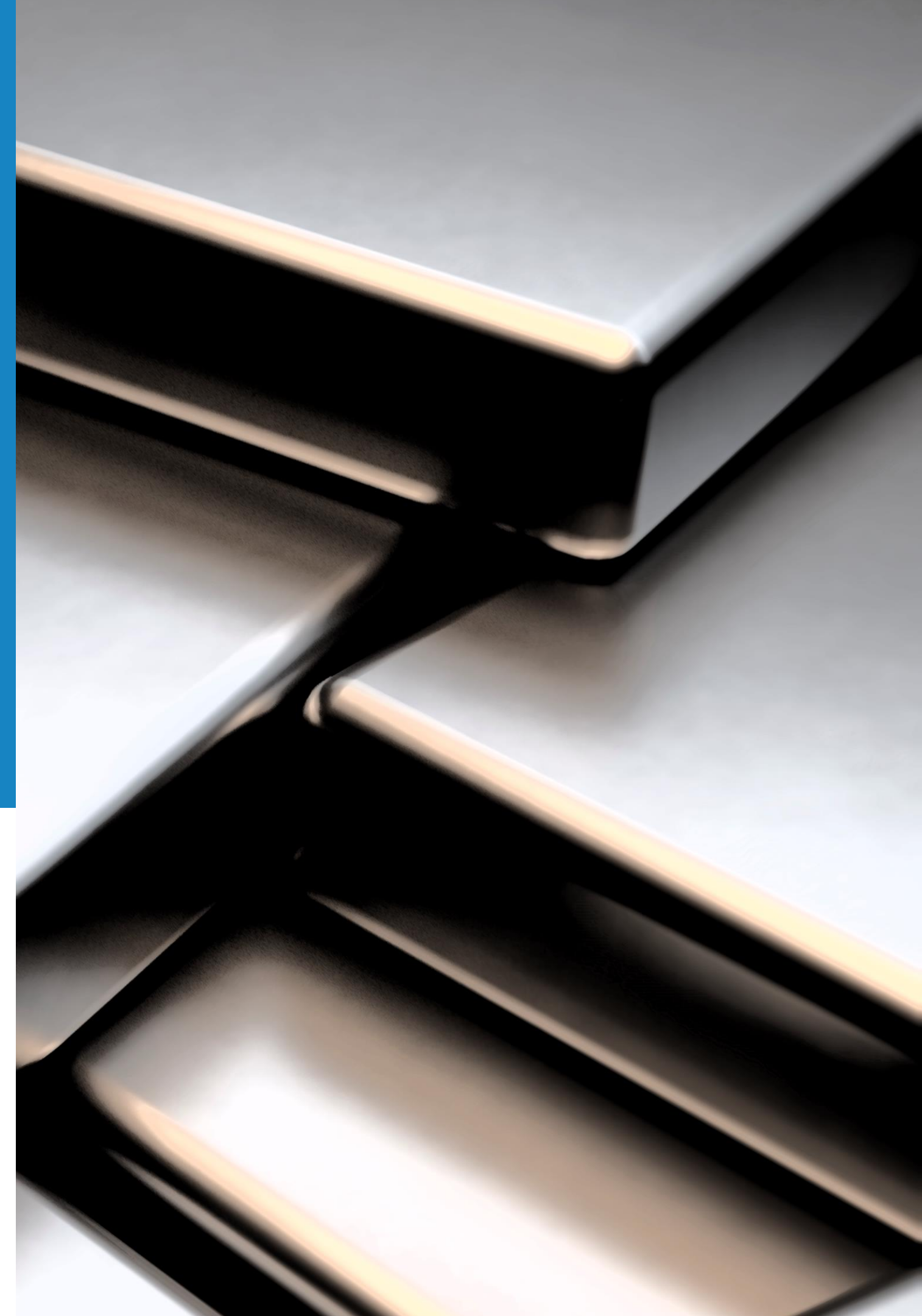


Developing a Rare Earths Refining Hub in Quebec

PDAC Presentation – Booth #2642
March 2020



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.



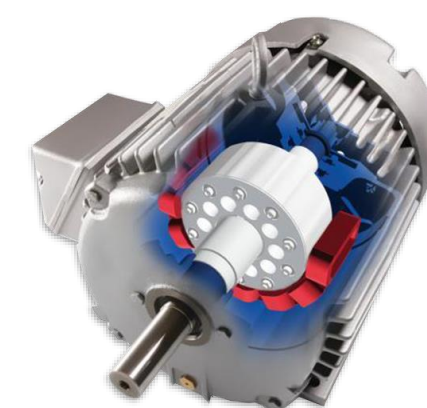
Neodymium Oxide



Neodymium Metal



NdFeB Magnets



Electric Motors

REE, Horne, Mining & Recycling

Horne Smelter

- 1927 to 1976 – Mine concentrates processing
- Today – copper concentrates & recyclable materials
- World's largest processor of electronic scrap containing copper and precious metals

Geomega

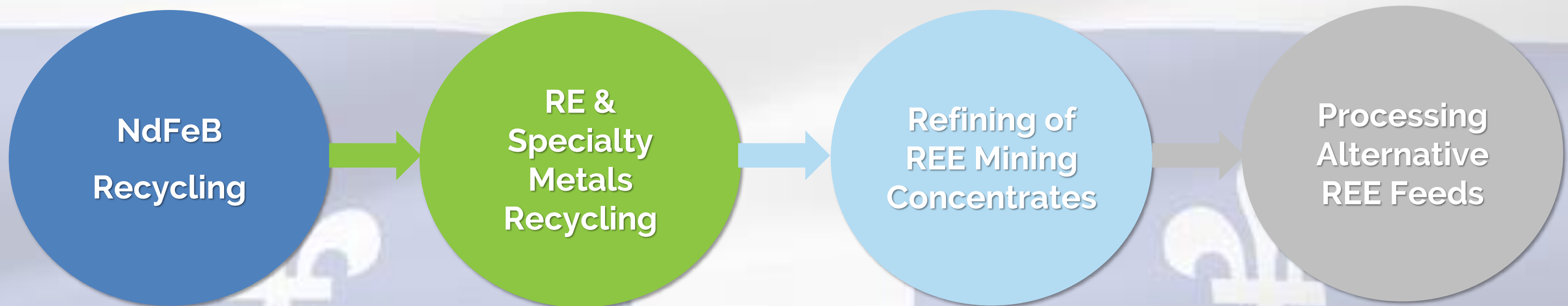
- 2020 – Starting with recycling magnet feed
- Future – expand to REE mining concentrates



Source: Glencore

Quebec – North America's REE hub

- **ISR Technology to be used to establish Quebec as the clean and cost-efficient recycler of choice outside of China for NdFeB**
- **Expand to recycling other secondary feeds of rare earths / specialty metals**
- **Use ISR to refine REE mining concentrates**
- **Use ISR on alternative REE bearing feeds such as red muds, coal, tailings and other mining feeds**



Quebec – North America's REE hub

- **An operational clean REE recycling & refining industry will lead to:**

- 1. Development of the REE mines of Quebec**

Montviel and several other projects that are already well defined

- 2. Attract downstream processing**

Metal making and magnet manufacturing - energy intensive processes that would thrive with low cost and clean energy of Quebec

- 3. Attract downstream manufacturers that use REE in their products**

Developing the ISR Technology to extract and refine REE

Stage 1:

- Lab scale development of the technology – **completed**
- Adjust ISR to process REE magnets and perform a sequence of scale ups of 10x each to demonstrate the technology in mini-pilot – **completed**

Stage 2:

- Scale up REE magnet recycling to a demonstration plant – **ongoing**
- Adjust ISR to process other REE feeds and mining concentrates - **ongoing**
- Convert the demonstration plant to a commercial plant

Stage 3:

- Scale up ISR for other REE feeds and mining concentrates

GRADUAL SCALE UP IS THE KEY

The gradual scale up has several advantages:

1. Reduces the technological risk of scaling up new and innovative processes
2. Reduces CAPEX and financial risk by starting from low volume & highest grade material available
3. Allows to establish cash flow to make the company less dependent on equity financings
4. Brings credibility to the technology
5. Establishes a relationship with the clients / industry
6. Lowers the risk when scaling up to lower grade and larger volume feed material

Geomega's ISR Technology

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

- Recovery of main reagents > 95%
- No liquid effluent produced
- Iron oxide as product

ISR Technology Demo Plant

FEED study Updated Economics - production of 1.5 tons per day	
Demo plant feed throughput	1.5 tpd / 8hr day
Average grade of feed stock	30% TREO (Nd, Pr, Dy, Tb)
Capital costs	\$2.6 MM
Direct operating costs	\$3 / kg of TREO
Targeted Sales	\$10 MM
Target Profit Margin	20%
Expansion potential	Up to 4.5 tpd / 24hr operation

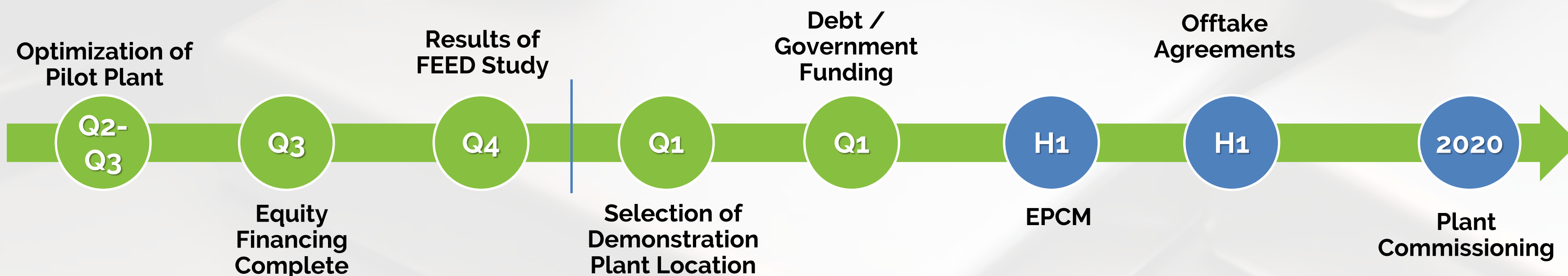
- **A brand-new industrial complex has been secured in Saint-Bruno-de-Montarville**
- **Strategic location for the first Rare Earth Magnet recycling operations in North America**
- **30 minutes from Montreal**
- **6 hours from Major North American cities (Boston, NY, Toronto)**
- **Within 30 minutes to major seaways through the Port of Montreal (access to largest container transshipment center in the Great Lakes system) and Contrecoeur marine terminal**
- **Serviced by CN and CP railways**
- **40 minutes from two airports (Trudeau & St Hubert airports)**



Upcoming Milestones

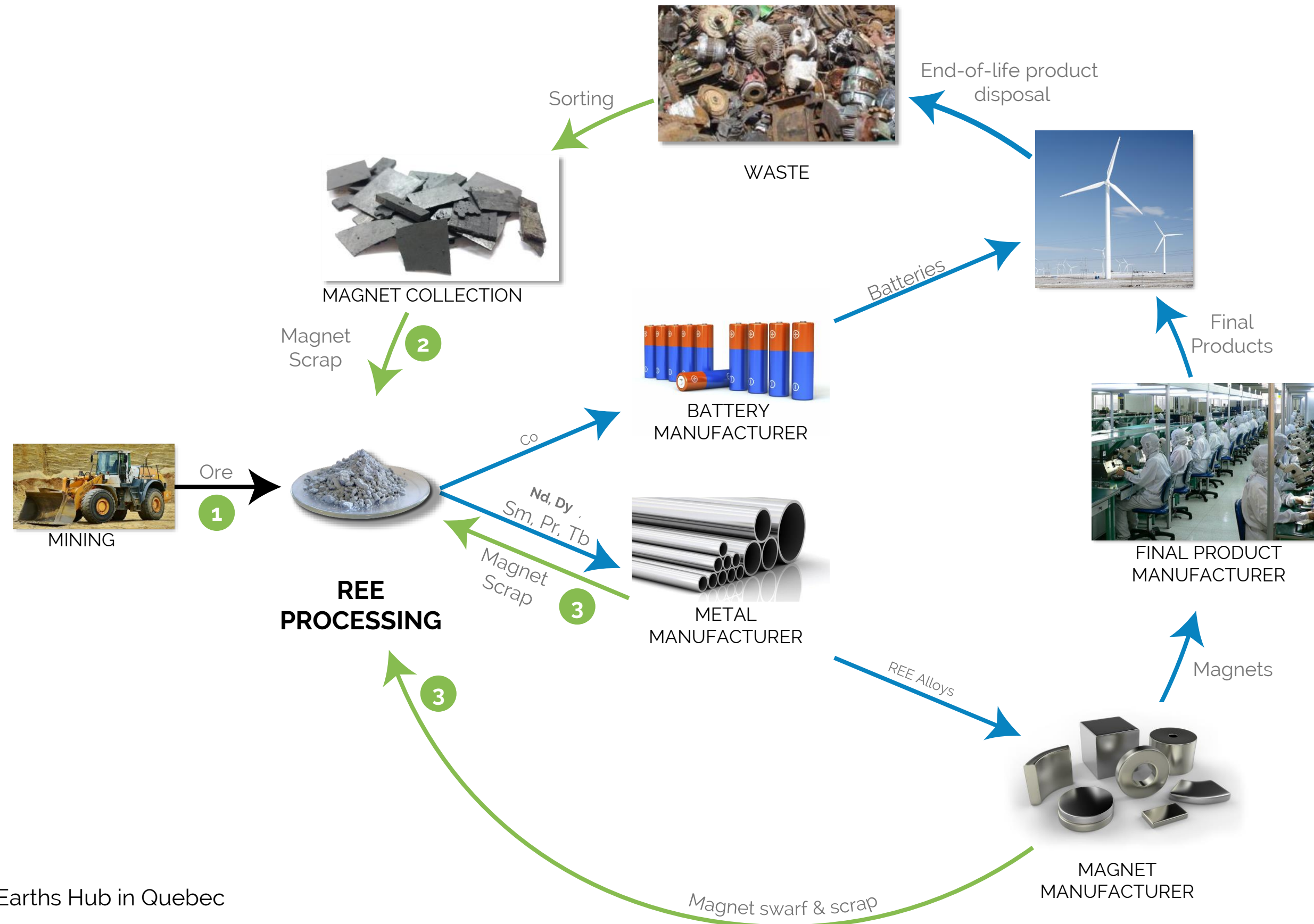
2019

2020



Feed Sourcing Contracts & Stockpiling Material – always ongoing

REE Circular Economy



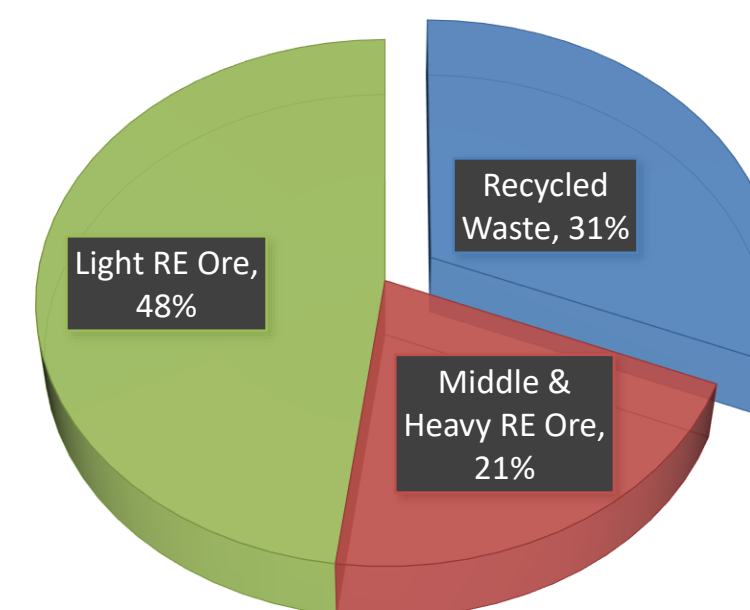
How much is recycled today?

- **The traditional view:**

- <1% - Research publications by Meyer and Bras, 2011; Tanaka et al., 2013; Anderson et al., 2012
- Typically only around 1% of the REE are recycled - Jowitt et al. 2018
- Commercial recycling of rare earths is still very much in its infancy – Roskill 2018

- **The reality:**

- China, which controls over 90% of REE Separation capacity, is attributing 31.25% of that to Recycled Waste – BAIINFO, June 2019
- 25% & 20-30% magREO from swarf (Adamas Intel. & Roskill, 2019)
- China is the leader in REE recycling
- Estimated at over \$1.2B of REO are recycled today



China advantages

- Infrastructure already in place
- Recycled at existing Solvent Extraction (SX) facilities
- Some exclusively used for recycling feed
- Other facilities process both mining and recycling feeds
- HCl based process with iron rich “red mud” waste & organic solvent-based pollutants in aqueous discharges - Disposal is low cost in traditional tailings

What is recycled?

- > 50,000 tpy globally
- Several established programs for collecting end of life magnets from motors and wind turbines
- Manufacturers get back material back from clients
- >15,000 tpy available worldwide with volumes increasing in some application and decreasing in others

Pre & Post Consumer assemblies



Swarf



Scrap



REE Recycling – Geomega Solution

- **What is needed to increase REE recycling**
 - Requires low cost & environmental process that operates in batches
 - Low CAPEX plant to justify economics based on the feed that is easily available outside of China today
 - An operational plant will create an active market with recycling companies
 - Infrastructure is there to make homogeneous and segregated collection process
 - Government regulations to promote, educate & support REE recycling
 - Most recyclers don't even know the value of the magnet in their recycling stream

**It's not a low REO price problem,
It's a chicken and the egg problem**

REE Recycling - Collection

- **MAGCYCLE**
 - First magnet take back program worldwide for NdFeB, AlNiCo, SmCo
 - Founded by Rocklink in 2018
 - Collection of magnet scrap by mail starting from 25 kgs annually
 - ~ 70 participants and 16 tons magnet scrap collected annually
 - Strategic partnership with North American rare earth recycler Geomega Resources



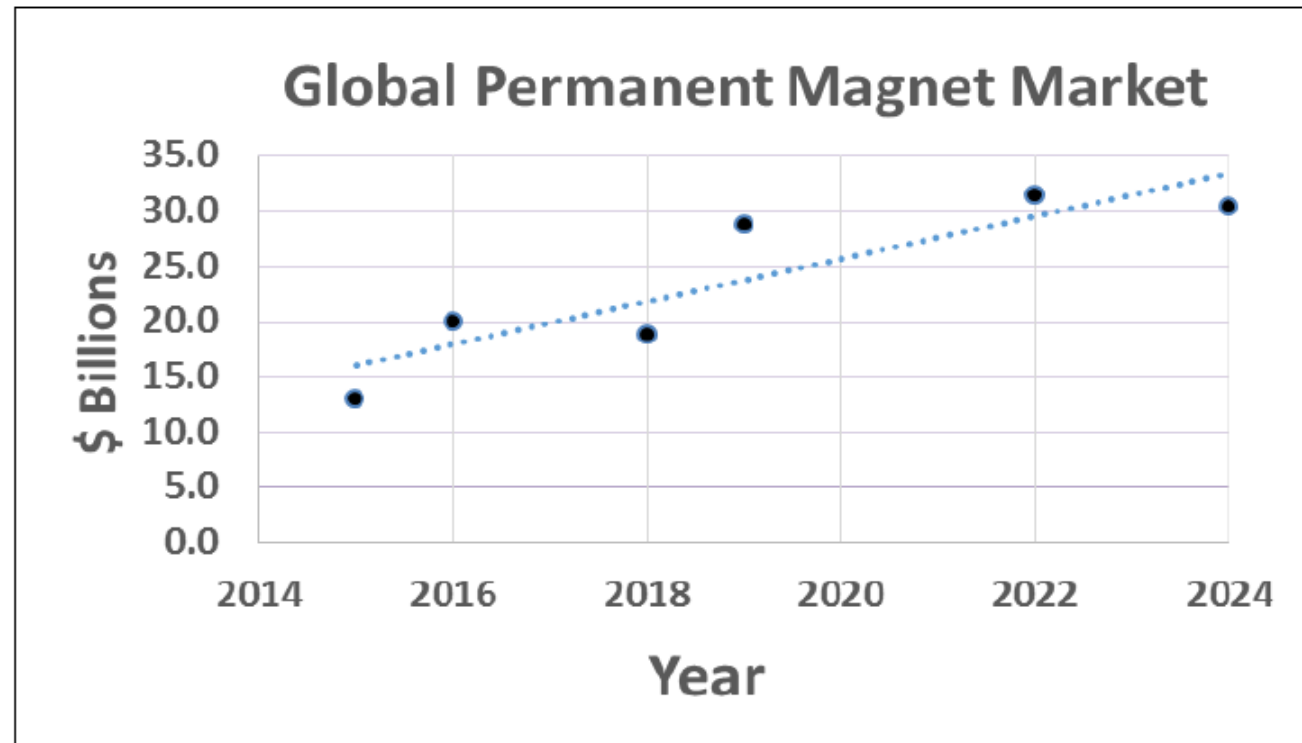
Source: Rocklink GMBH

More Suppliers Joining

- **Global supply growing**
 - LOI signed with several groups for over 200 tpy
 - Pilot programs for magnet recovery from electric vehicles ongoing
 - Partnership with Jobmaster Magnets to recycle from hundreds of clients
 - More suppliers to join the magnet collection network



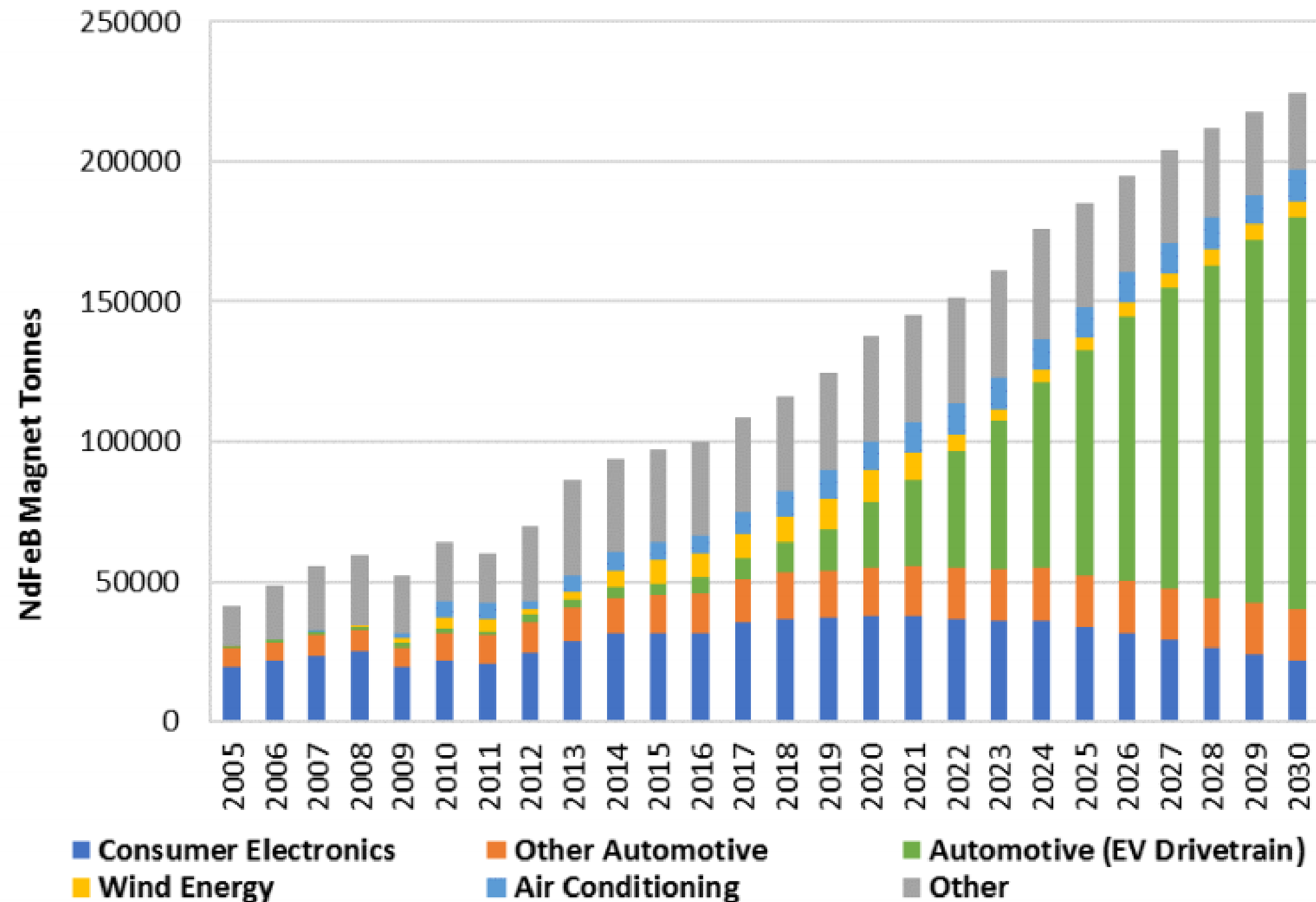
Permanent Magnet Sector



9.4% avg annual growth from 2015 to 2024

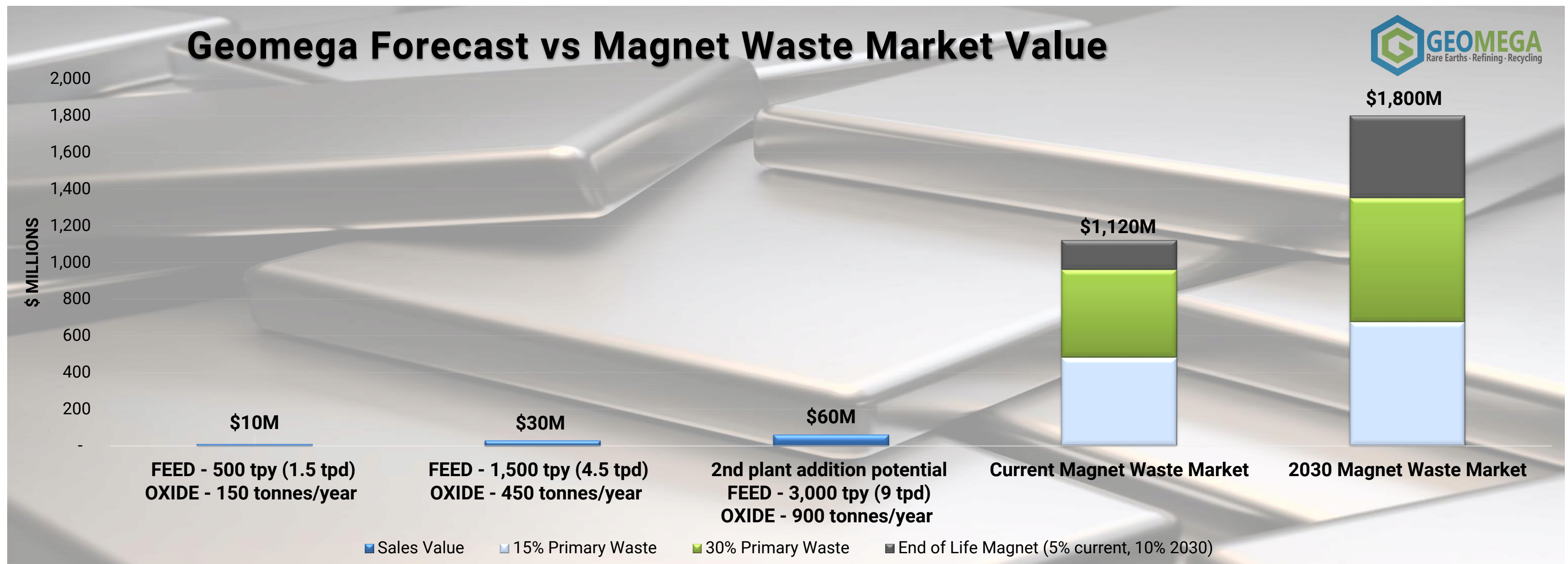
Material	Weight (000's Kg)	Value (\$ Millions)
NdFeB	160,000	11,200 (59%)
Ferrite	830,000 (82%)	5,800
Bonded NdFeB	11,000	1000
SmCo	4,200	400
Alnico	6,300	350
Other	2000	150
TOTAL	1,013,500	\$18.9 Billion

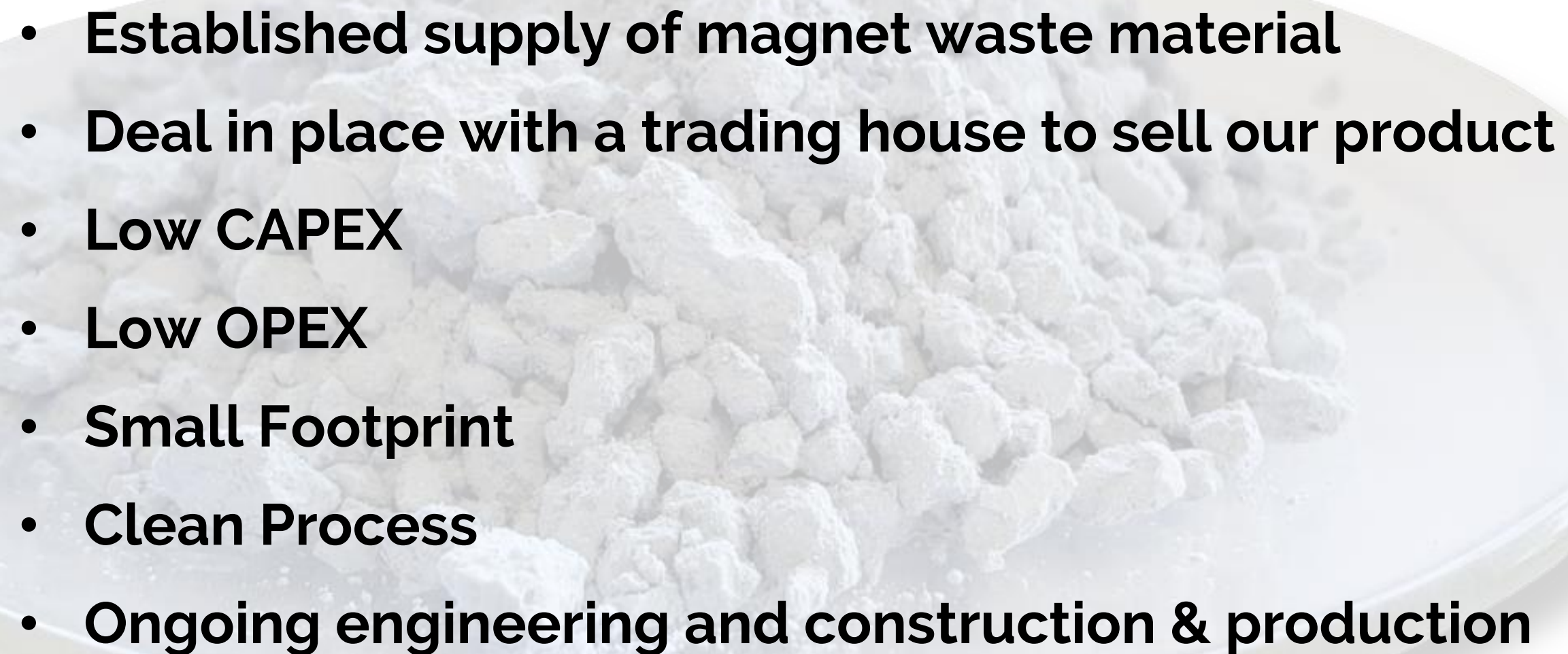
Source: Walter T. Benecki LLC & Dr. John Ormerod



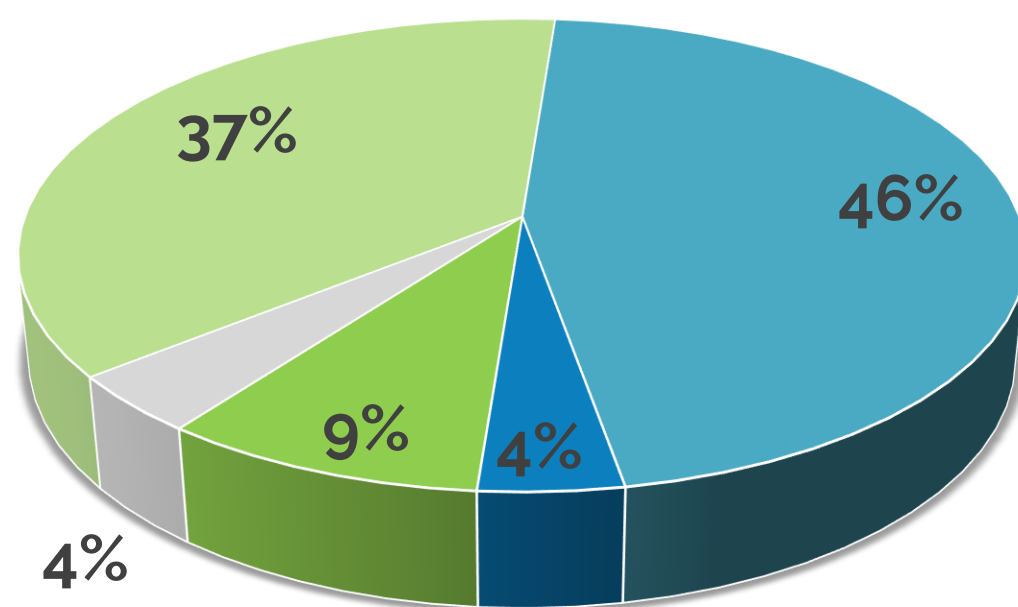
Source: Roskill

- Starting model is robust
- Growth opportunity in magnet recycling is significant
- Additional growth expected from other secondary sources



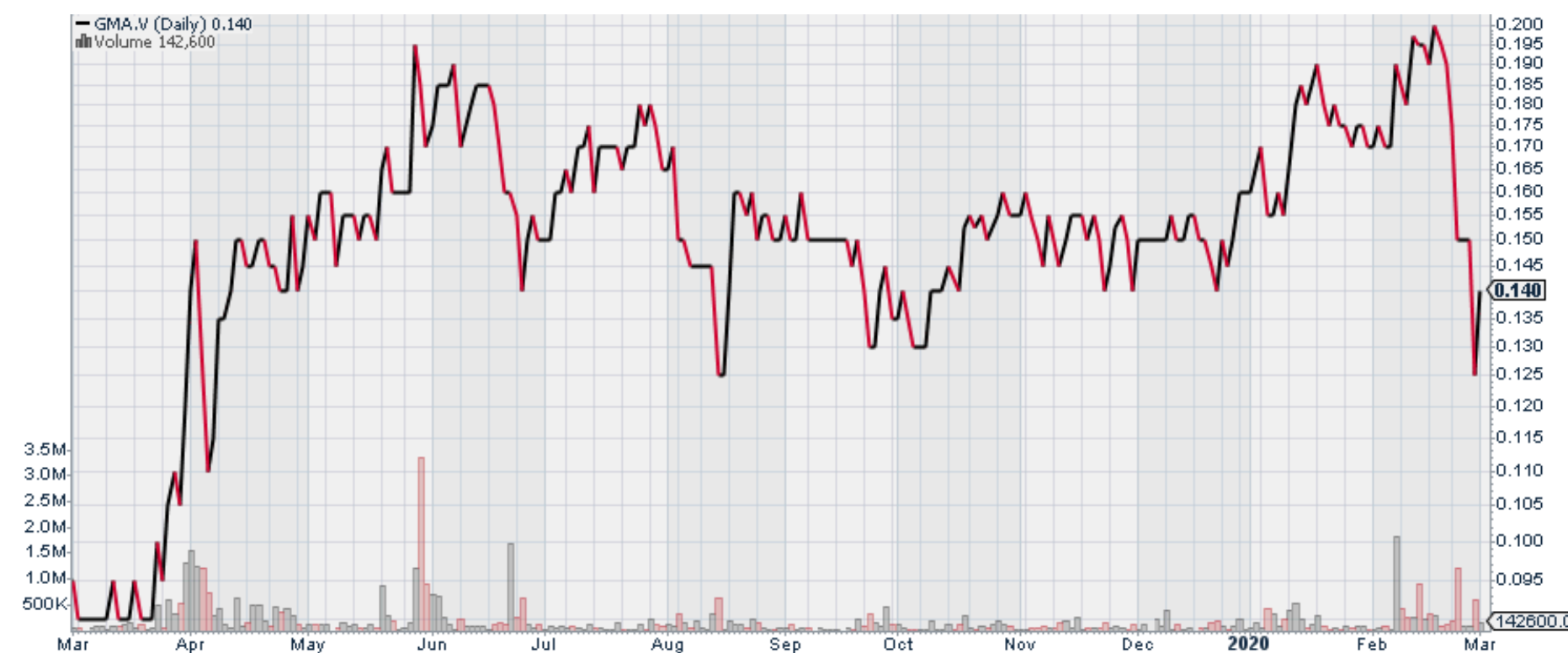
- 
- **Established supply of magnet waste material**
 - **Deal in place with a trading house to sell our product**
 - **Low CAPEX**
 - **Low OPEX**
 - **Small Footprint**
 - **Clean Process**
 - **Ongoing engineering and construction & production**

Share Structure



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

Issued & Outstanding	103,484,928
Stock Options	6,252,500
Warrants	10,153,886
Fully-Diluted	117,155,900
Equity assets	16.8M shares of KTR.V



Developing a Rare Earths Hub in Quebec



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