MagREEsource, des aimants permanents recyclés Made In EU

FIEEC
FÉDÉRATION DES INDUSTRIES ÉLECTRIQUES, ÉLECTRONIQUES ET DE COMMUNICATION

MagREEsource
THE GREEN RARE EARTH MAGNET COMPANY

May 28th, 2026 – FIEEC Webinar “La course aux matériaux critiques”

MagREEsource in 2026

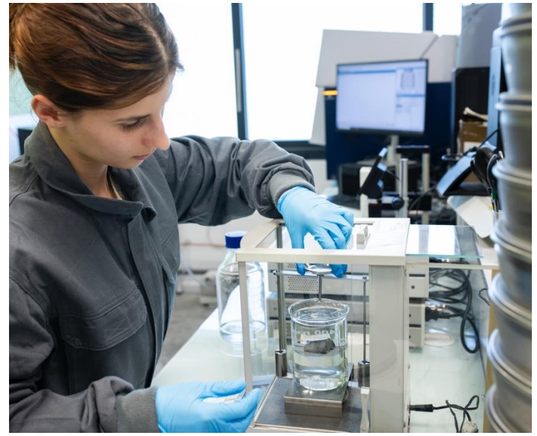
Noyarey site (near Grenoble)

2000m² workshop +lab - **55 employees**

2 technologies :

- Short loop Hydrogen
- NdFeB fusion

Capacity 2026-2028 : 50t/yr NdFeB + Pilot SmCo



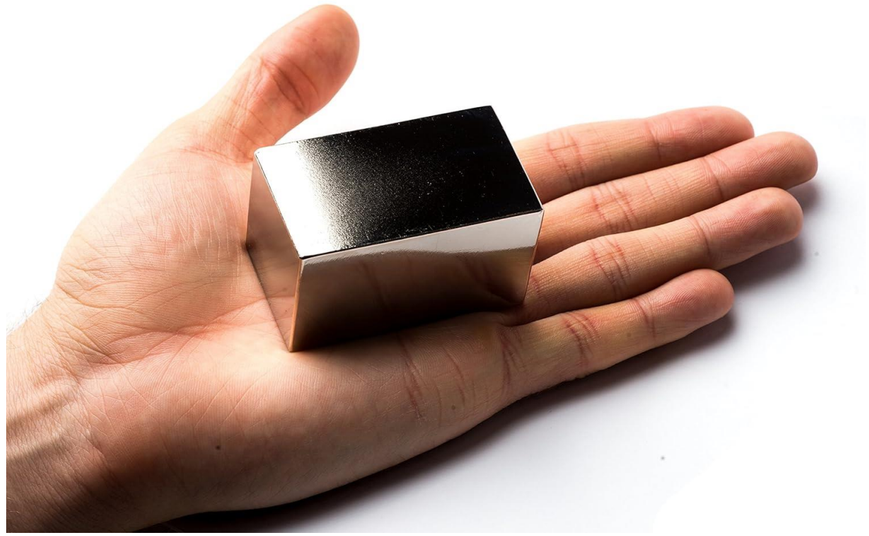
1 Competences

2 Production teams working in 2 shifts
15 researchers and technicians with a range of expertise: (magnetism, mechanics, powder metallurgy, vacuum technology)

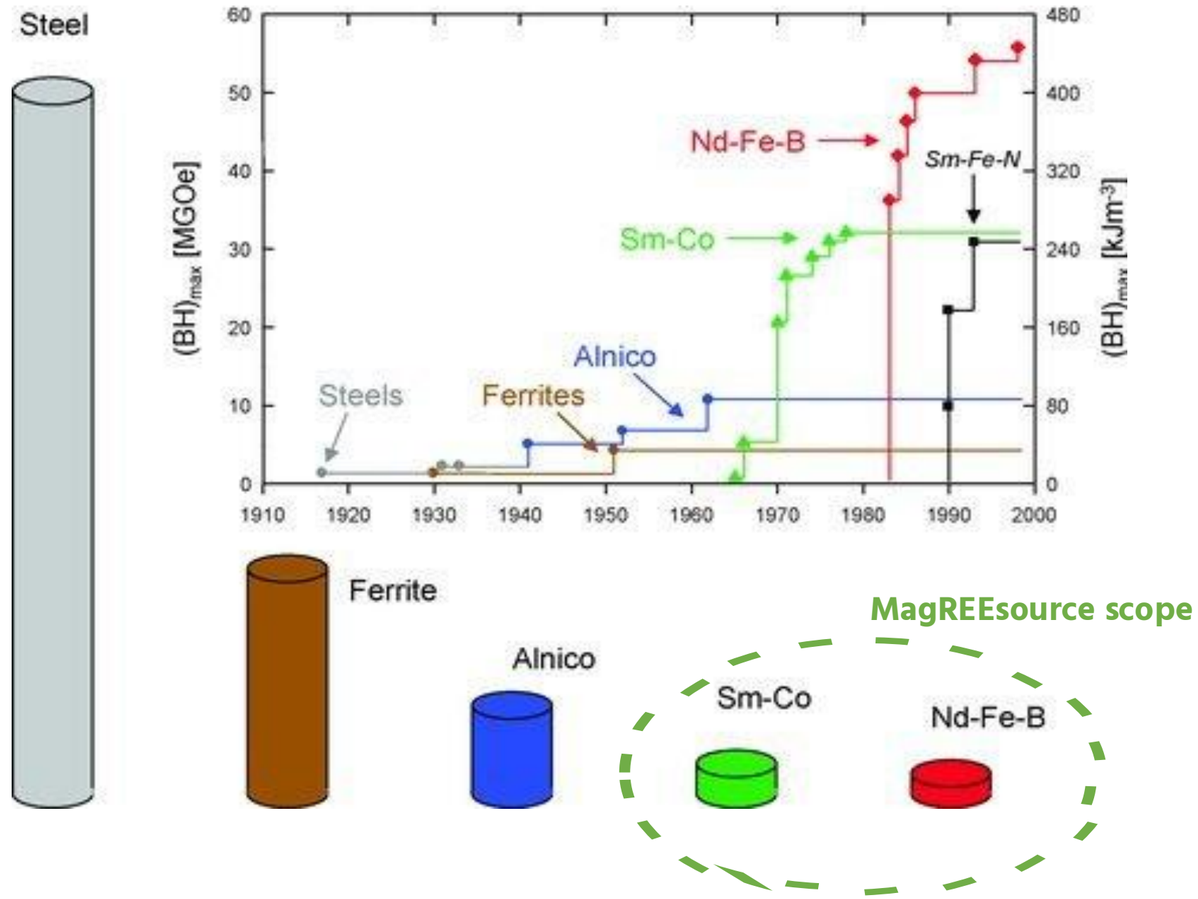
2 Lab tools

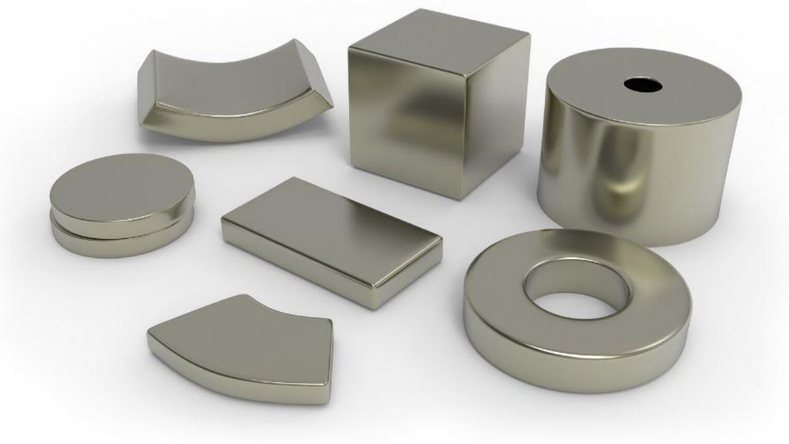
A range of equipment available to characterize magnets and powders (chemical composition, contamination, magnetism, mechanical dimensions, corrosion…)

Background : permanent magnets (NdFeB and SmCo)



What are rare earth permanent magnets





RE-Fe-B Alloy

With RE around 30% in mass

mainly Nd/Pr/Ce

+ 0-3% Dy/Tb/Ho

Relative magnet size and shape of different permanent magnet materials to generate 1000G to 5mm from the polar side of the magnet

Source : https://doi.org/10.1002/adma.201002180

A huge diversity of applications in electronic devices

Source : TCMag

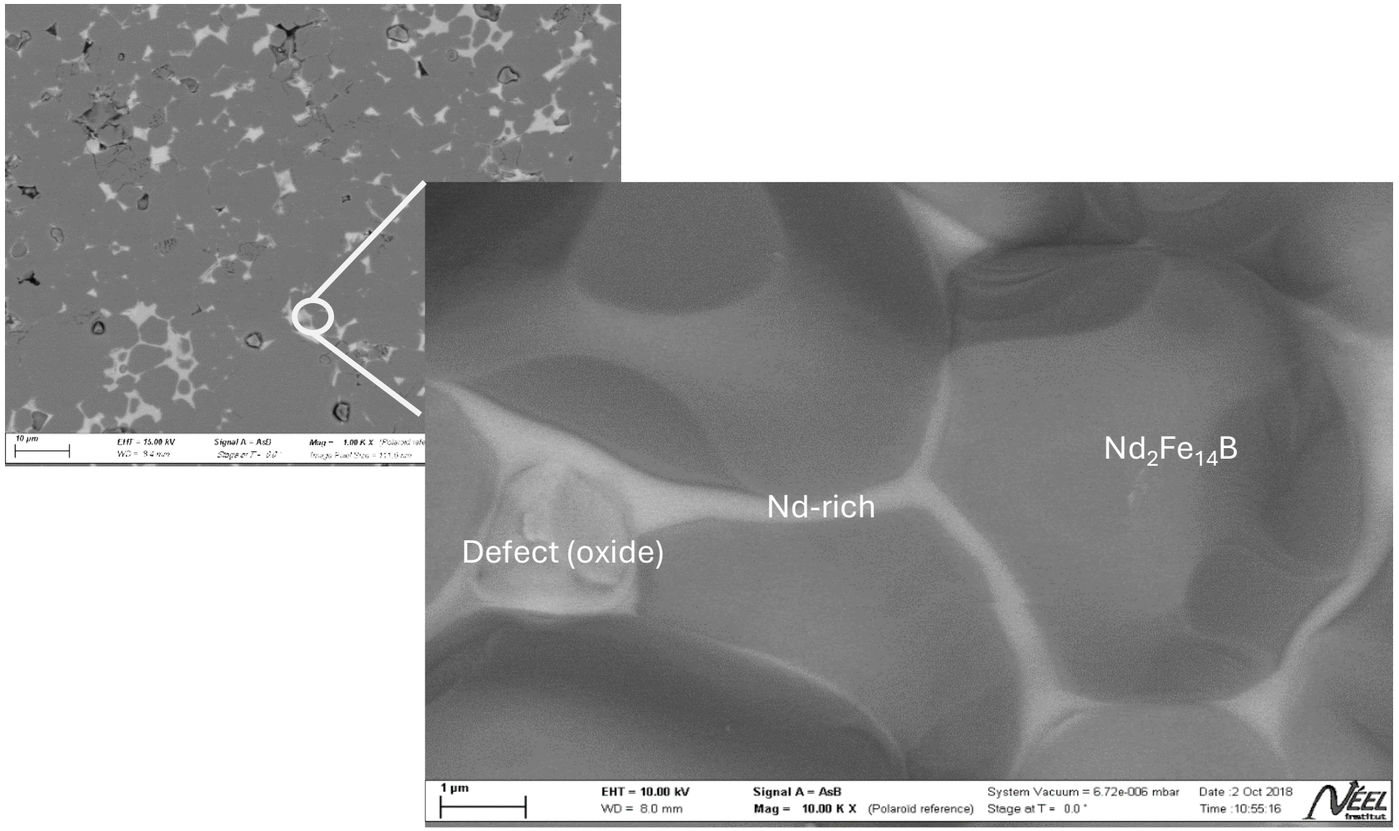
Audio devices

Energy conversion

Measurement

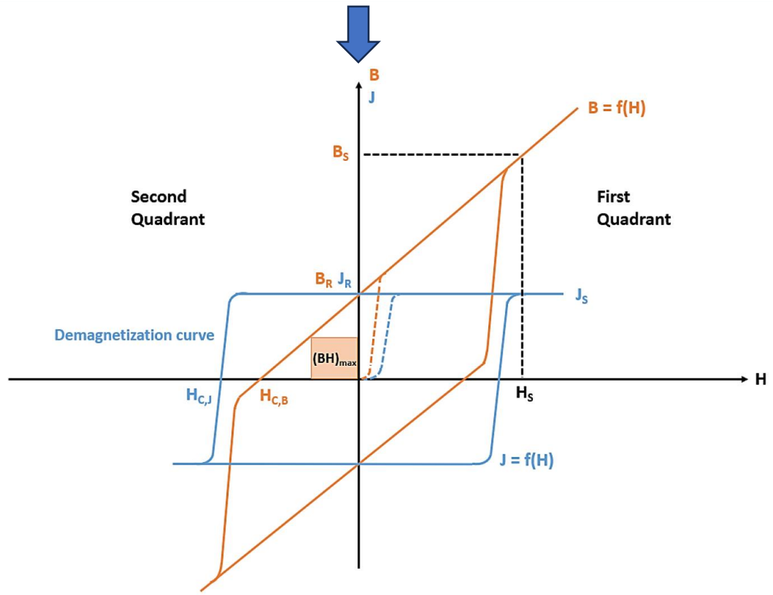
>30-40% of NdFeB magnets are destined for electronic devices

What is “in” the NdFeB magnet



A material built by **powder metallurgy route**, where both process and physical parameters conditioned the performance

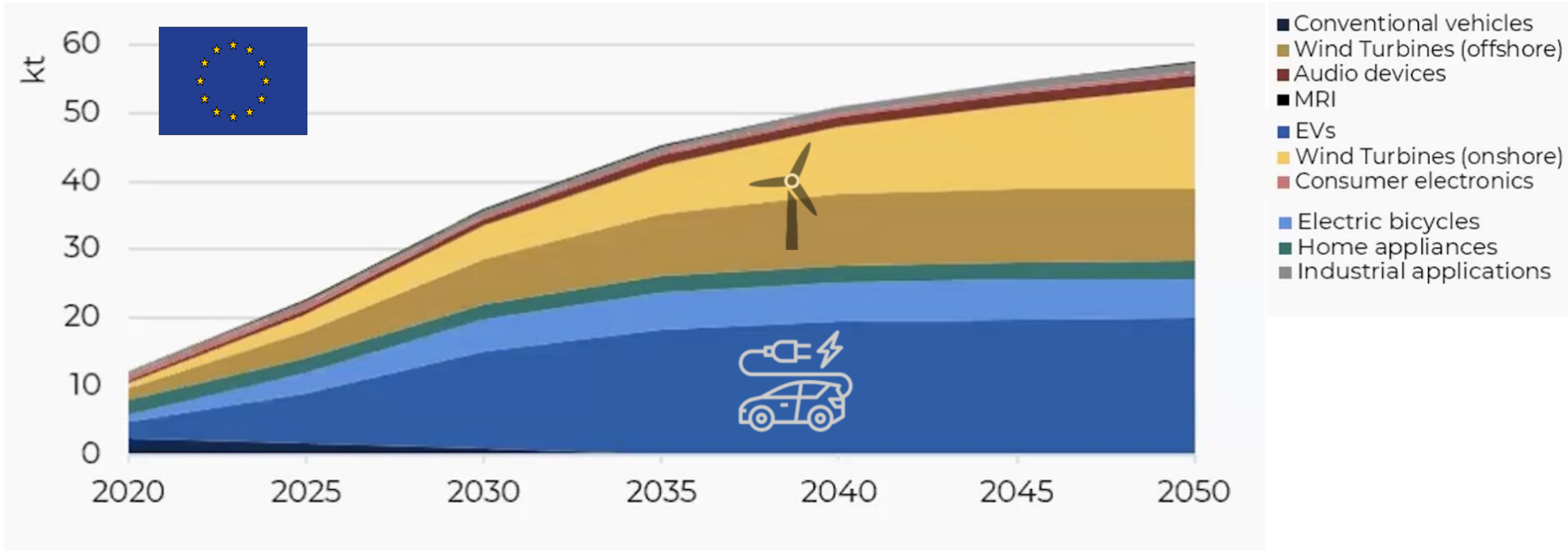
- Composition (RE type, additives)
- Grain size (remanence)
- Nd/rich phase vs. main phase (coercivity)
- Pollution level (oxygen level
- Alignment and sinterin



A more electrified world for the energy transition = More magnets

Projection of **the demand** for NdFeB permanent magnets in Europe

source : CEPS 2024

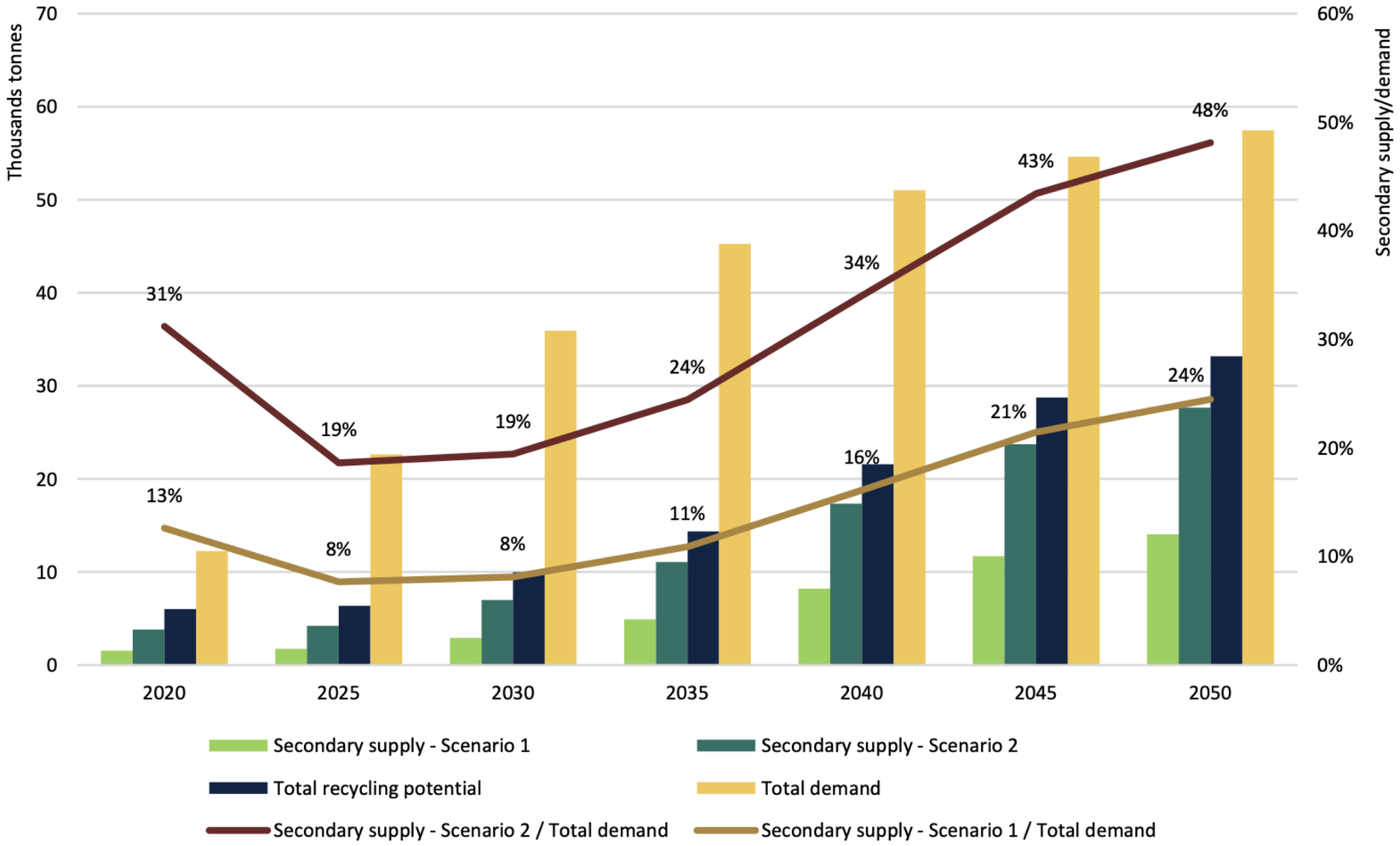


"98% of the rare earth elements we need come from a single supplier: China. This is not sustainable. We must diversify our supply chains. And at the same time, we must invest in circular technologies that re-use resources instead of constantly extracting them."

Ursula von der Leyen
February 2021

The importance of recycling to reduce material criticality

Share of recycling in the supply of magnets (scenarios) *source : CEPS 2024*



Recycling could cover **8% to 19%** of needs by 2030

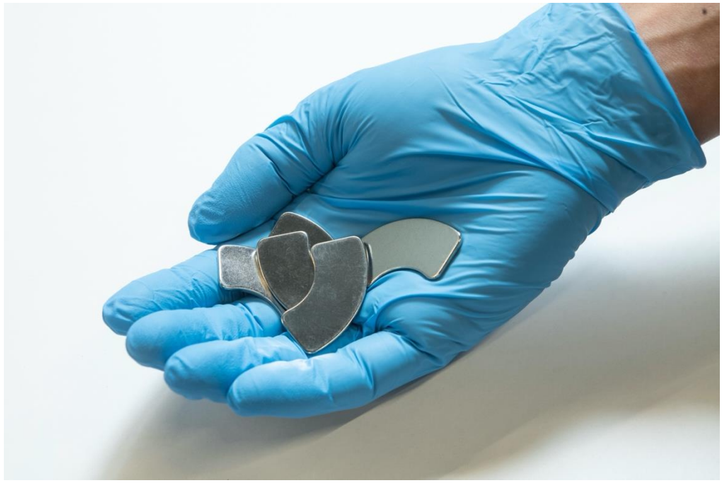
CRM-Act

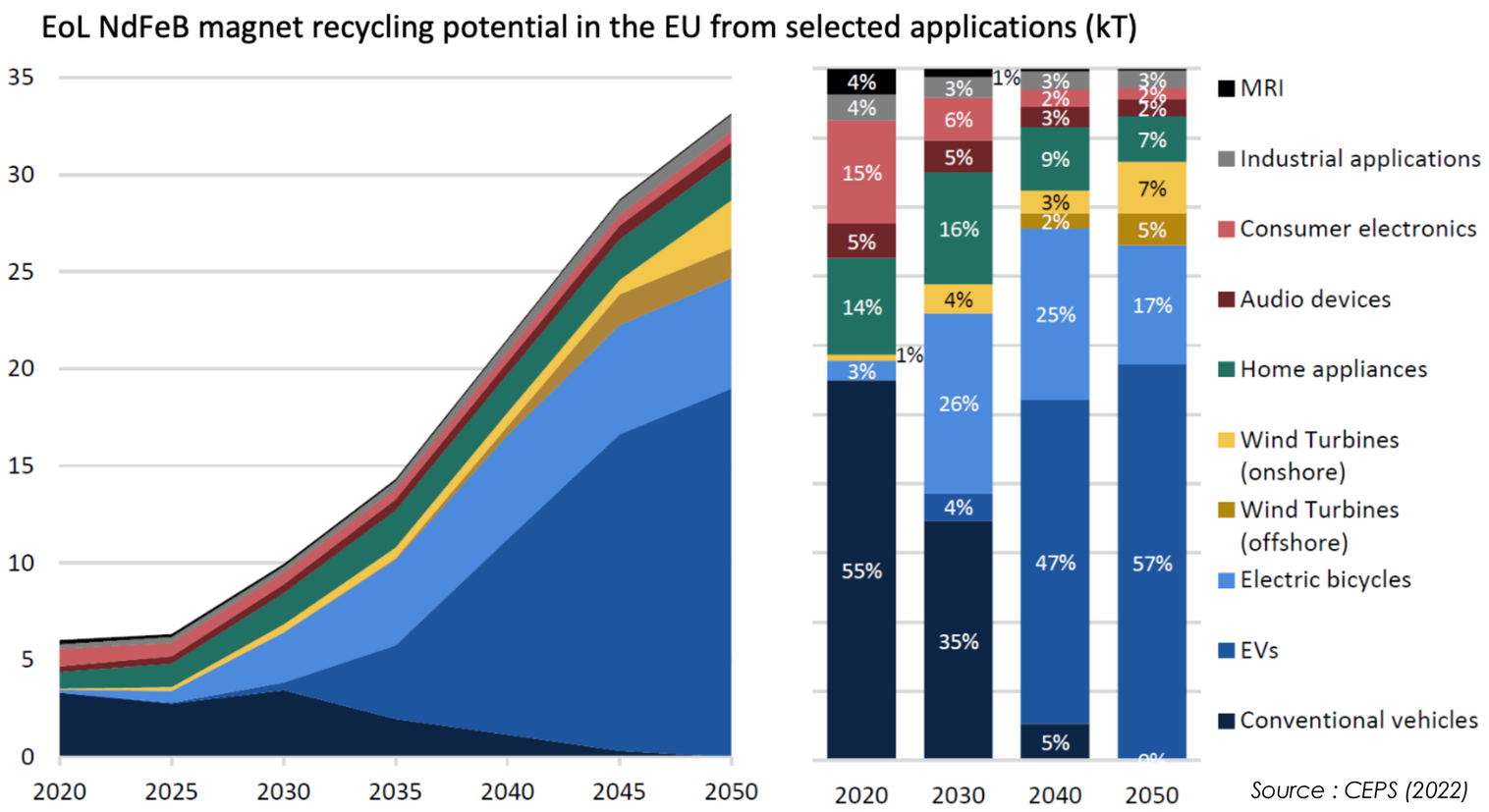
Sources for EoL magnets and challenges

Which sources for recycling

Less than1% of magnets are currently recycled

But the magnet waste resource is increasing



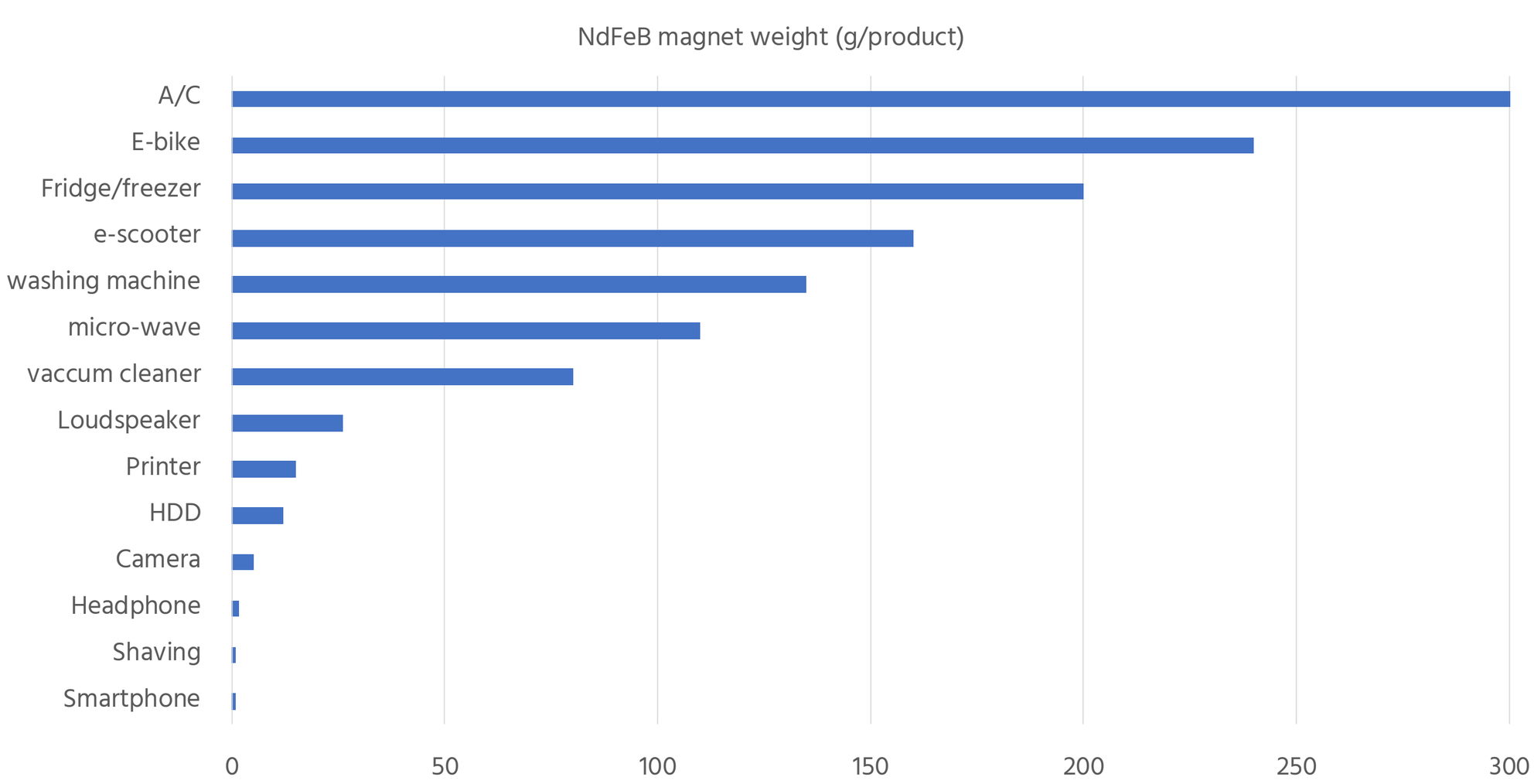


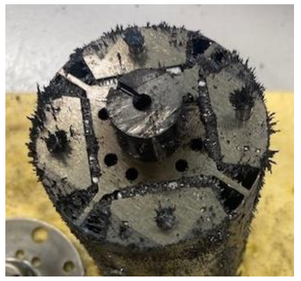
Source : CEPS (2022)

2020
5 000 t of waste

2035
15 000 t of waste

Examples of sources in e-waste



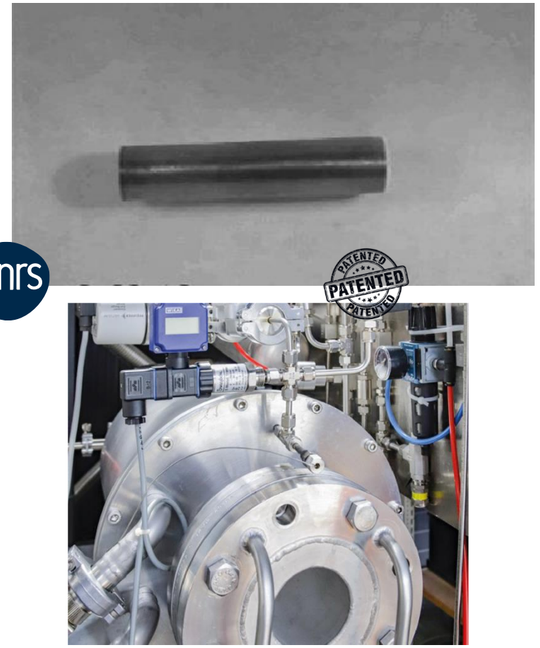


Average weight of RE-magnets per product in WEEE (if containing)

MagREEsource: a "magnet to magnet" process

Disassembly of end-of-life equipment

Decrepit with **hydrogen**



The result of 25 years of research at the CNRS, a clean recycling process, using hydrogen

Magnet manufacturing by powder metallurgy

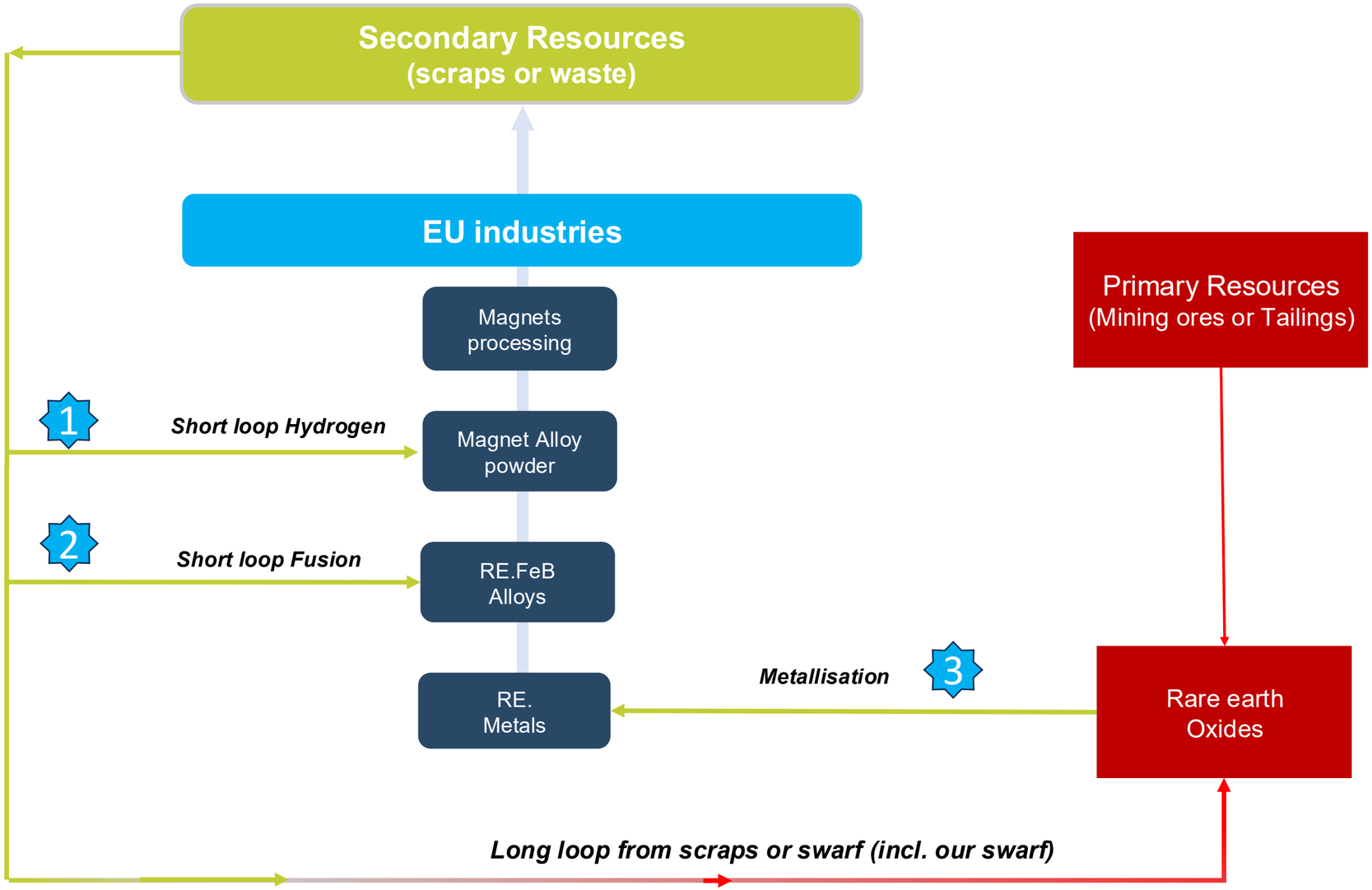
MagREEsource short loop recycling process

91% 6kg CO_2 eq vs. 67.6 kg for a primary rare earth magnet

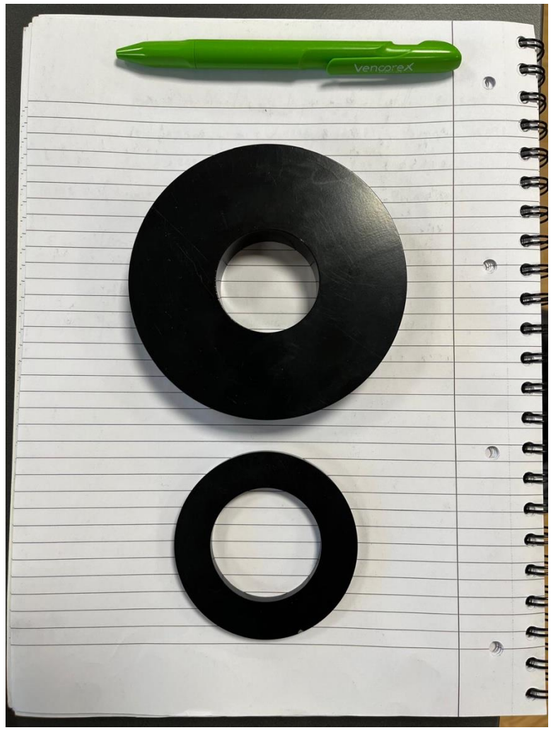
96% Reduction of mineral resource consumption

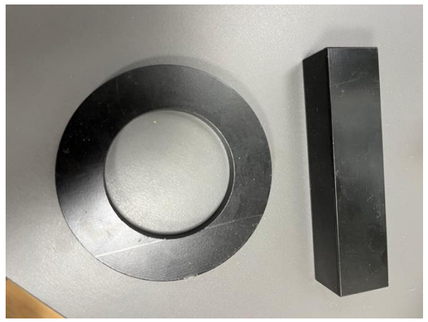
87% 1187 L less water to make 1 kg of magnet

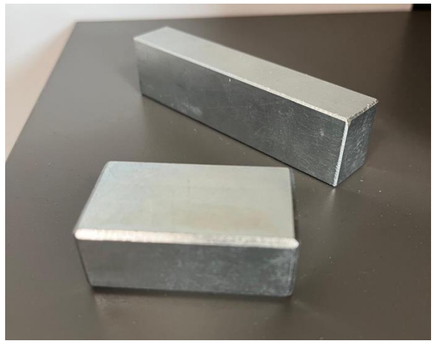
Positioning in the value chain – 3 pillars for autonomy

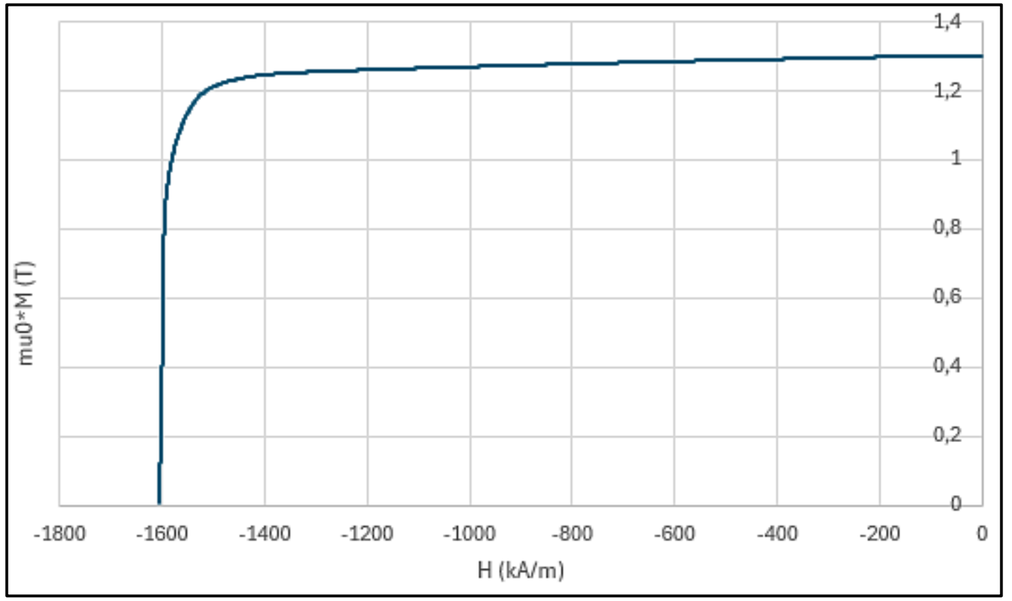


MagREEsource: state-of-the-art magnet production from 100% recycled material









Current capacity to produce all shapes (rings, blocks, tiles)
From grams up to 3 kg (130mm)
Zn, epoxy coating or phospatation

Magnetic grades up to N42SH by short loop recycling with 100% recycling !

MagREEsource: state-of-the-art magnet production from 100% recycled material

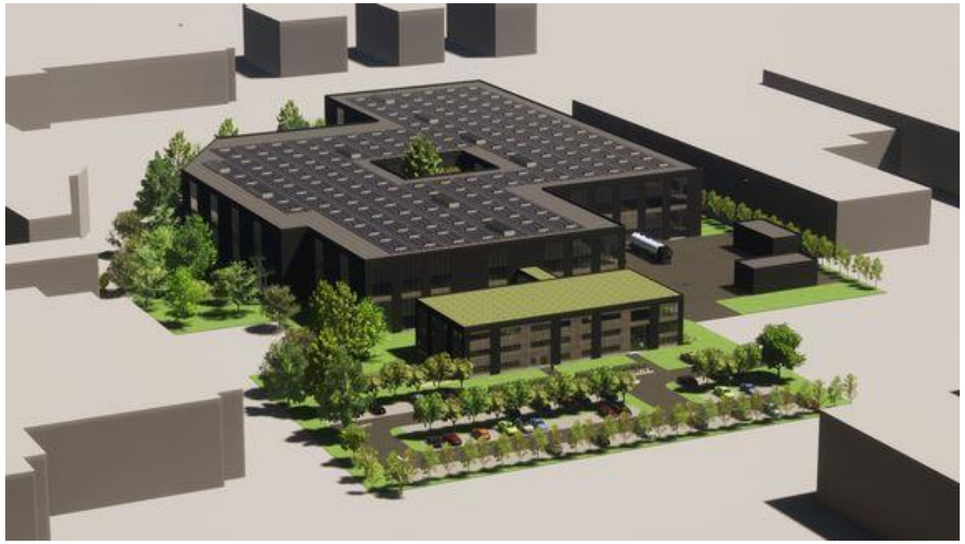
26/03/2026 - Signature du partenariat MagREEsource – **Pochet – Chanel** en présence du **ministre** délégué à l'industrie

Industry Outlook: MagFactory

Based in Grenoble on the Lyon motorway, 1,600m^2 for R&D, recycling and production

(50 tpy)

2023



"MagFactory": 1st factory for sustainable permanent magnets in Europe

(500-1000 tpy)

2028-2031

Conclusions

MagREEsource
THE GREEN RARE EARTH MAGNET COMPANY

Established industrial capacities

Looking for partnership for scrap / EoL collection and/or new magnet supply

Solution to reduce criticity and secure domestic supply of critical material

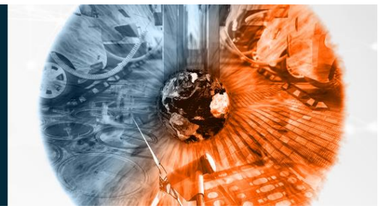
Thank you for your attention

MagREEsource
THE GREEN RARE EARTH MAGNET COMPANY

Luc Aixala
Directeur Développement Durable
luc.aixala@magreesource.com
06 22 26 29 49

SovereigntySustainabilityTechnology

2024 CLEANTECH 50TOWATCH



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