

CONSORTIUM



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SINTEF



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### DURATION

1 May 2022 – 30 April 2026



### PROJECT BUDGET

Total budget: €12.6 Million

EU funding budget: €10.1 Million

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# REEPRODUCE

Dismantling and Recycling  
Rare Earth Elements  
from End-of-life Products  
for the European Green Transition



## IN PURSUIT OF A MORE CIRCULAR AND SUSTAINABLE EUROPE

Rare earth-based permanent magnets (PMs), commonly using *neodymium* (Nd), *praseodymium* (Pr), *terbium* (Tb) and *dysprosium* (Dy), are one of the key enablers of Europe's green economy, powering everything from electric vehicles, wind turbine motors, to aerospace applications.

Currently, Europe depends mainly on imports of PMs and rare-earth elements (REEs) and the European Commission labelled them as critical raw materials (CRMs) and ranked them with the highest risk of supply since 2011.

At the moment, there is still no industrial recycling activity of REEs in Europe, mainly due to the following bottlenecks:

- Lack of mature and affordable technologies capable to identify, sort and extract the Nd-based PMs placed in different types of end-of-life (EoL) products.
- Absence of advanced technologies to recover and purify, at high efficiency, REEs from EoL Nd-based PMs from Nd-based PMs (especially with varying content of REEs and impurities).

## OBJECTIVES

The aim of the REEPRODUCE project is to set up for the first time a sustainable and complete European REEs recycling value chain at industrial scale, able to produce REEs from EoL products at competitive cost and with environmentally friendly technologies for the green strategic sectors.

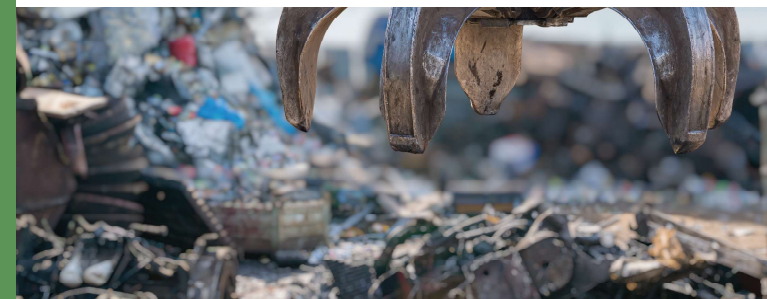
The REEPRODUCE project has the following objectives:

-  **Optimisation of innovative technologies** for sorting, dismantling and recovery of REEs from EoL products at competitive cost.
-  **Engineering, construction, operation and validation of the REEPRODUCE pilots** in different industrial environments across Europe.
-  **Demonstration of the environmental, social, and economic sustainability of the REEPRODUCE process** in the recycling of REEs.
-  **Communication of activities and dissemination of the project's results** towards society, scientific and industry communities.
-  **Maximising the exploitation of the technologies** towards market uptake in Europe.

## IMPACT

The project's innovative results will generate technological, economical and societal benefits:

- Setting up a full REEs recycling value chain at industrial scale in Europe for the first time.
- Producing REEs in Europe at 25% reduction in total costs compared to current production.
- Significant reduction in the environmental impact >70%, and better social sustainable performance compared to current production practices (>50%).
- Contribute to the ambitious energy and climate targets for 2030.
- Resilient, sustainable and secure REEs value chain for European ecosystems.



## THE REEPRODUCE CONCEPT

