

CONSORTIUM



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REE4EU PROJECT

RARE EARTH RECYCLING FOR EUROPE



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Integrated high temperature electrolysis and Ion liquid extraction for a strong and independent european rare earth elements supply chain.

www.ree4eu.eu

THE PROJECT

The project, funded in the frame of Horizon 2020 TOPIC SPIRE-07-2015, will realize a breakthrough innovation in the field of recovery technologies for metals and other minerals. It will make available rare earth elements and rare earth alloys for magnet production by developing, for the first time at industrial scale, an efficient and cost effective method of extraction and a direct production route for rare earth alloys which will be achieved through in-process and end-of-Life permanent magnets as well as Ni metal hydride battery waste.

OBJECTIVES

The REE4EU project will develop, validate and demonstrate in 2 industrially relevant pilots an innovative rare earth alloys production route from permanent magnets and nickel metal hydride battery waste.

The targeted integrated solution is based on recently developed lab-proven technologies for direct high temperature electrolysis of rare earth alloys production. It will be combined in the pilots with an innovative and proven Ionic liquid extraction or tailored hydrometallurgical pre-treatment.

BENEFITS

The targeted integrated solution will demonstrate dramatic improvements in cost and environmental performance compared to state of the art technologies:

- ✔ This includes avoidance of process steps,
- ✔ 50% energy savings,
- ✔ 100% recycling of reagents as opposed to disposal of strong acid leaching agents in state of the art pre-treatment steps.

