

## Recycling rare earth elements from end-of-life NdFeB permanent magnets more efficiently

HARMONY's mission is clear: secure critical value chains, and pave the way for a sustainable, circular economy. The project aims to achieve this by developing a comprehensive recycling process, covering everything from magnet collection and dismantling to metal recovery and magnet production.





Powder production



## **Pilots**



Pilot 1:

Collection & dismantling
optimisation



Pilot 2: **Pyrometallurgy** 



Pilot 3: **Selective leaching** 



Pilot 4: **Solvent extraction** 



Pilot 5: **Electrowinning** 



Pilot 6: Gas atomisation



Pilot 7: **Melt spinning** 



Pilot 8: **NeoLeach** 

## **Collection and Dismantling Direct Indirect** Direct Route Route Route Pyrometallurgy **Melt Spinning** Selective Leaching **Gas Atomisation** Powders: Continuous Solvent Isotropic Extraction Isotropic nanocrystalline nanocrystalline flake powder · HDDR · Jet milled Electrowinning Manufacturing Sintered Magnet **Bonded Magnet** of Magnets **Testing and Validation** Hydraulic Pump Motor Automotive Axial Motor Wind Turbine Generator



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