



## BIORECOVER – PRESS RELEASE

### DEVELOPMENT OF A NEW SUSTAINABLE AND SAFE PROCESS FOR SELECTIVE EXTRACTION OF A WIDE RANGE OF CRITICAL RAW MATERIALS

November 2019. A European consortium has started working on the research and development of a new sustainable and safe process, essentially based on biotechnology, for selective extraction of a wide range of Critical Raw Materials (CRMs).

This consortium led by CETIM Technological Center (Spain) with the participation of MYTILINEOS (Greece), MAGNA (Spain), UCPH (Denmark), UC (Portugal), UWITS (South Africa), LNU (Sweden), CeBER (South Africa), TR (Spain), ALGAENERGY (Spain), JM (UK), FAE (Spain), VTG (France) and LGI (France) will work for 48 months to determine the detailed characteristics and establish a conditioning procedure for each raw material to maximise the subsequent biorecovery process.

This project BIORECOVER is involving a multidisciplinary consortium that encompass the whole value chain and key international cooperation (UWITS and CeBER from South Africa), from relevant unexploited secondary and primary sources:

- REE (Rare Earths) coming from Bauxite Residue (BR) from Greece (MYTILINEOS);
- Mg (Magnesium) contained in Mg wastes of low-grade minerals with silicon or limestone impurities & calcination by-products- (MgW) from Spain (MAGNA);
- PGM (Platinum Group Metals) included in PGM low-grade ores consisting in flotation tailings (PLGO) from South Africa (UWITS) & PGM slags, dusts and press cake (PCBP) from United Kingdom (JM).

To this end, BIORECOVER will be based on the integration of three main stages to reach the expected recovery rates (90%), selectivity (95%) and purity (99%):

- (1) Pre-Treatment – To remove the major impurities presents in raw materials sources to achieve the greater availability of the target metals for their recovery.
- (2) Treatment – To mobilise these metals through specific and improved microorganisms to get a leachate enriched with the target CRMs.
- (3) Post-Treatment - To develop of a specific technology for recovering metals with high selectivity and purity that meet the quality requirements for its reuse.

Downstream processes will be also studied of the recovered metals for their reuse in several applications such as brakes pads, oxygen sensors, powder Mg and catalysts, involving from the automotive to mining sector. The different stages of the process provide it modular capacity increasing its adaptation flexibility to other raw materials and thus, further market penetration.

The awareness, trust and acceptance of the society about the importance of raw materials and their supply, production and use will be improved by the implementation of an awareness campaign. Besides, the project results will contribute to building the EU bio-mining knowledge (RMIS). The whole value chain will be involved implementing the EU Circular Economy models and supporting the goals of the EIP on Raw Materials.

### Further information

**CETIM - FUNDACION CENTRO TECNOLOGICO DE INVESTIGACION MULTISECTORIAL**

<https://biorecover.eu/>

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