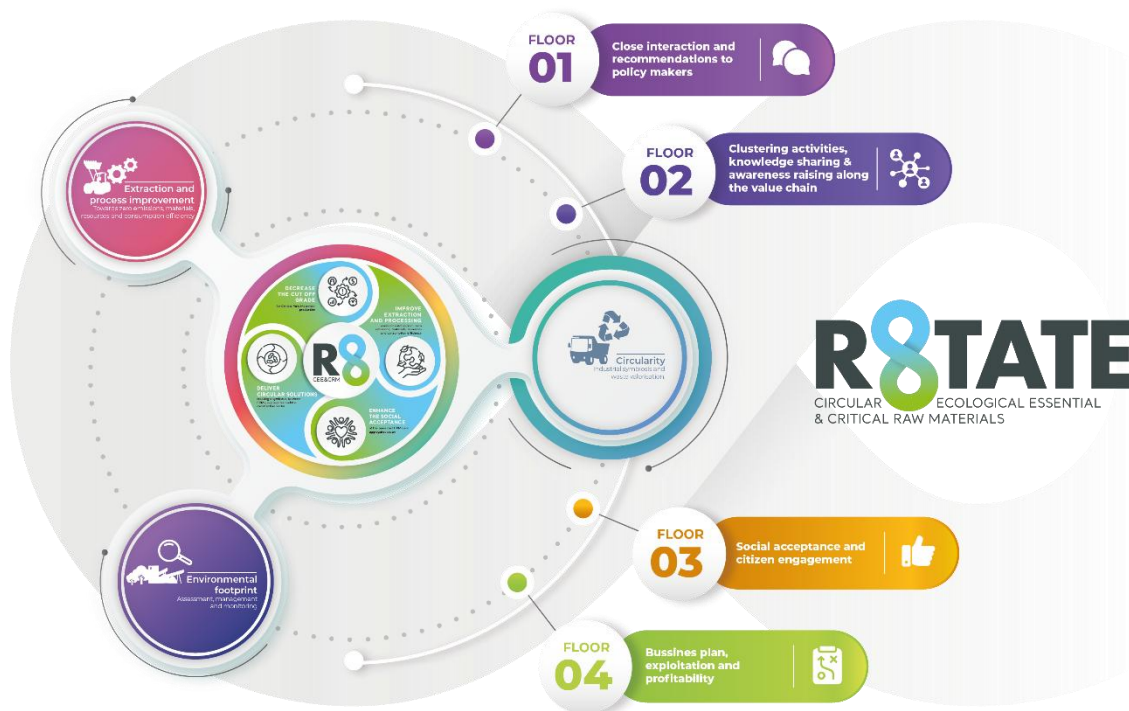


About the project

ROTATE is an EU-funded project that aims to provide environmental solutions that will contribute to facilitating the generation of synergies between diverse industrial sectors related to mining and quarrying. ROTATE goals are the following: to boost efficiency in extractive sites, enhance circularity and waste valorisation, develop sustainable processes along the mining and quarrying productive chain, and improve social awareness about the importance of this strategic sector and its commitment to sustainability. In fulfilling these goals, ROTATE also seeks to ensure a sustainable supply of critical raw materials crucial for the EU industry. In this sense, ROTATE is perfectly aligned with the scope and outcomes of [HORIZON-CL4-2021-TWIN-TRANSITION-01-20](#).



Next to technological developments to decrease the cut-off grade, limiting the environmental footprint of mining and quarrying operations, and increasing the circularity of the sites, ROTATE has published many reports and guidelines for the industry that are freely available: <https://rotateproject.eu/media/>.

The role of VITO in ROTATE

The Vlaamse Instelling voor Technologisch Onderzoek (VITO) was work package leader on the technological advancements to enhance circularity in the mining and quarrying sector. Next to these leading responsibilities, the technical work of VITO lies with the valorization of aggregate washing sludge. This sludge is obtained after washing and crushing excavation waste. The material will be used in concrete, as a filler material. The performance of selected samples will be enhanced using a co-calcination process so the material can be used as a supplementary cementitious material (SCM), a material with active participation in the cement hydration reactions. The production of lightweight



aggregates to be used in lightweight/insulating concrete or screed products is a final high-gain high-risk solution to be investigated.

The work showed that even washing sludges from polluted excavation can be upcycled. The developed processes simultaneously provide a decontamination and enhancement of the technical properties of the material. The processing costs are motivated by profits from landfill cost avoidance as well as sales of the product. For VITO, the project was well aligned with the strategic roadmap of the Circular Metals and Minerals team and established a position as thrust knowledge partner in the field of sustainable mining practices.