

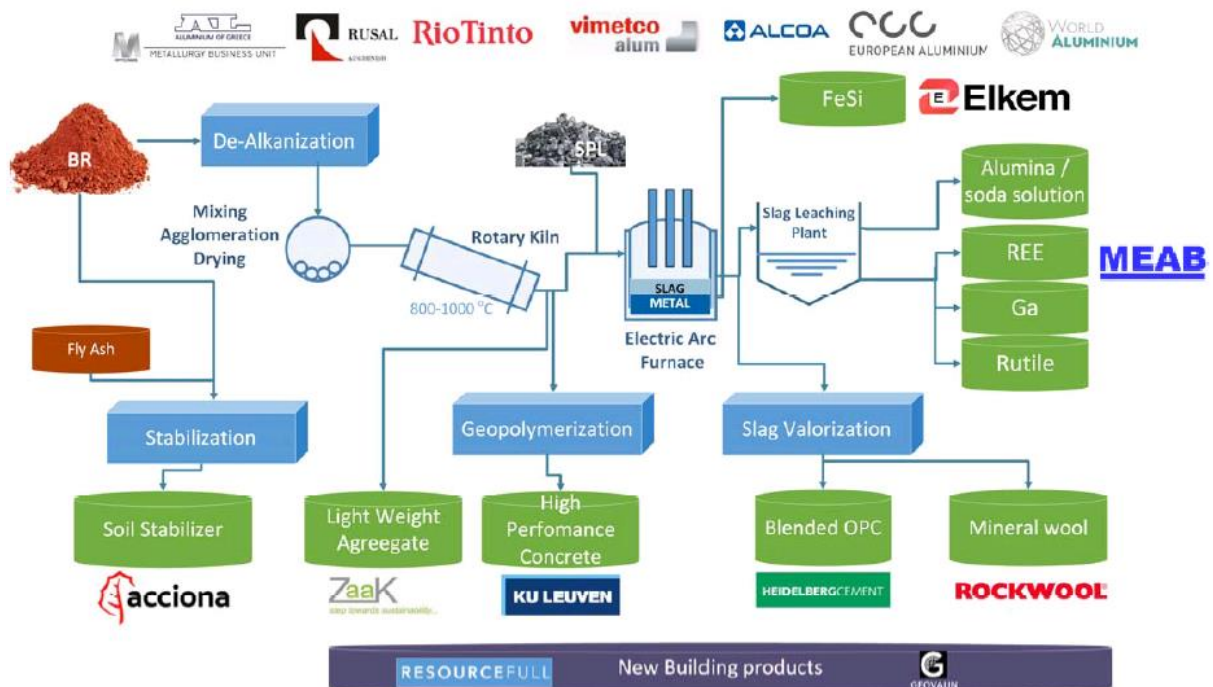


First of May 2018 the four-year Horizon 2020 RemovAL project started. RemovAL stands for the “Removing the waste streams from the primary Aluminum production and other metal sectors in Europe”. RemovAL is coordinated by Mytilinaios (Greece) and involves 27 partners from academic and industrial sectors.

The answer to the current Raw Material supply challenge faced today in Europe lies in technological innovations that increase the efficiency of resource utilization and allow the exploitation of yet untapped resources such as industrial waste streams and metallurgical by-products. One of the key industrial residues which are currently not or poorly valorized is Bauxite Residue (BR, more commonly known as “red mud”) from alumina refineries. Bauxite residue reuse solutions do exist as stand-alone but pooling them together in an integrated manner is the only way to render bauxite residue reuse viable from an economical point of view and acceptable for the industry. The RemovAL project will combine, optimize and scale-up developed processing technologies for extracting base and critical metals from such industrial residues and valorizing the remaining processing residues in the construction sector.

In term of technological aspects, RemovAL will process several by-products from the aluminium sector and from other metallurgical sectors in Europe ( $\text{SiO}_2$  by-products, SPL, fly ash, and others). The different waste streams will be combined to allow for optimal and viable processing in different technological pilot nodes. The technologies and pilots in most cases have already been developed in previous or ongoing projects and through RemovAL they will be pooled together and utilized in a European industrial symbiosis network.

In term of social or non-technological aspects, RemovAL will gather key sectors like the non-ferrous metal and cement sectors in order to secure a true industrial symbiosis through a top-down approach considering also legislation and standardization at European level in order to facilitate the implementation of the most promising technical solutions.



The figure demonstrate the production of REE concentrate, Ga concentrate, alumina/soda solution and rutile concentrate from the hydrometallurgical processing of engineered slags/sinters produced in RemovAL pyro-metallurgical pilot plants. Ga is co-extracted both from the slag and the Bayer liquor. At least 500 kg of slag and 100 l of Bayer liquor will be processed at **MEAB** solvent extraction pilot plant in Germany.

### Supplementary Information Links

The removal Project Website, <https://www.removal-project.com/>