

Challenge@PoliTo *_By Firms*

A NEW Life for Alumina-based Wastes (NewLAW) *_By Sacal*

March – June 2022

THE CALL FOR IDEAS

SACAL Spa, Società Alluminio Carisio, uses specific processing and melting cycles to refine aluminium scraps, implementing a recovery and recycling process that has important and positive ecological effects: scraps regeneration for subsequent industrial use and consequent reduction in the exploitation of natural resources.

Every year the system produces about 20.000 tonnes of alumina-based waste. The company adds suitable quantities of silica sand to obtain a secondary raw material.

Since the 1990s, SACAL has given real form to the company's 'Eco-sustainable' project, with the aim of having a secondary raw material to feed back into those industrial processes, such as cement factories, bricks and refractories industry, where alumina is widely used.

With the crisis in the building sector, more than 60% of concrete production in Italy has been lost since 2008, so the project could not achieve the 'zero kilometre' goal and SACAL had to export the product abroad, but only in small quantities, with great expense and no longer in a Circular Economy concept.

THE CHALLENGE

Tests carried out by SACAL on the byproduct, have shown that this material possesses interesting characteristics for industrial application in various Italian manufacturing areas.

The objectives of the challenge are:

- identify possible applications for the material, through the enhancement of specific compositional characteristics, for example in the civil engineering and building field (traditional or innovative binders), in the production of refractories, in the field of "Made in Italy" artistic creativity or in other sectors not yet explored;
- explore waste recycling solutions from a Circular Economy perspective, LCA;
- identify appropriate production processes from an economic and environmental sustainability point of view.

The Challenges are worth 8 curricular or extra-curricular credits.

Check the curriculum of your degree programme to verify if you have the possibility to choose a Challenge in substitution of your free choice credits.

SIGN UP NOW! Places are limited!

For any questions, write to clik@polito.it



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