

AlSiCal

Sectors involved	<i>Aluminium, Silicium</i>	
Funding (e.g. RFCS, FP6, FP7, H2020)	<i>H2020/2014-2020 under grant agreement n° 820911</i>	
Title	<i>Towards sustainable mineral and metal industry: ZERO Bauxite Residue and ZERO CO₂ from coproduction of Alumina, Silica and precipitated Calcium carbonate by the Aranda-Mastin technology</i>	
Acronym	<i>AlSiCal</i>	
Key words	<i>Sustainable innovation</i>	
Start date - End date	<i>2019-2023</i>	
Short Description:		
<p><i>AlSiCal is an ambitious research and innovation effort to make the mineral and metal industry more sustainable and environmentally sound. The project will further research, develop and de-risk a ground-breaking concept: the patented Aranda-Mastin technology. By integrating CO₂ capture, this technology enables the co-production of three essential raw materials (alumina, silica and precipitated calcium carbonate), using new resources – e.g. anorthosite, abundantly available worldwide – whilst generating ZERO Bauxite residue and ZERO carbon dioxide (CO₂) from production.</i></p>		
Industrial Symbiosis (YES or NO):		YES
Energy Efficiency (YES or NO):		YES
Energy/Material flows exchanged:		
Objectives:		
<p><i>AlSiCal overarching objectives are:</i></p> <ul style="list-style-type: none"> - <i>Position the European Union at the forefront of innovation for the Green Shift for the mineral and metal industry;</i> - <i>Secure European sustainable production of alumina, silica and precipitated calcium carbonate by researching, developing and de-risking a ground-breaking technology for ZERO Bauxite residue and ZERO CO₂ emissions from their co- production;</i> - <i>Unlock substantial reserves of new resources within the European Union – and from worldwide available resources – that can complement or substitute today’s worldwide production of alumina under sustainable principles.</i> 		
Meaningful outcomes¹:		
<p><i>The experimental setups are being designed and built at present, and will become cutting edge facilities in hydrometallurgy and CO₂ utilization innovation for more sustainable industry. The Aranda-Mastin technology has large potential to expand towards varied process sources besides anorthosite, for which, in addition to different anorthosite qualities, alternative sources are being screened by our experts. Our modelling teams (both at reactor and process level) and LCA analysts are already getting started with data gathering. Last, but not least, we are aware of the expectations and need for information, for which we dedicate special efforts on keeping informed stakeholders, collaborating organizations and society. Thus, dissemination and communication aspects are taken care and we have already developed the project website, first brochure, social media accounts, first newsletters and the two first interviews by non-scientific publishers.</i></p>		
Available on:		

<https://www.alsical.eu/>

¹technical (e.g. by-products recycling, digitalization, etc.), regulatory (e.g. environmental legislation), economic (e.g. new business models) and social/organisational (e.g. impact on the workforce) aspects should be highlighted.