

# Workshop Latin America – Europe: Cooperation opportunities for a more sustainable raw materials industry. The EU-ALSiCal project case

## Background

This Workshop is organized with the aim of discussing the main challenges faced by the Aluminum and other metallurgical industry throughout its value chain, from extraction to the production of final products.

Firstly, the energy transition has become a determining factor for the aluminum industry. The demand for this metal has significantly increased due to its use in key sectors for the transition to cleaner and more sustainable energy sources. One of the most important challenges in the Aluminum industry is to find alternative sources and processes that can reduce the carbon footprint, diversify supply and adopt more sustainable practices.

Each stage of the raw materials value chains presents challenges in terms of environmental, social, and economic sustainability. It is necessary to minimize the environmental impact of mineral extraction and ensure proper management of waste and by-products generated in the process while maintaining the industry's competitiveness and profitability in an increasingly demanding global market.

This entails striking a balance between adopting more sustainable technologies and optimizing costs in the production chain.

Furthermore, it is essential for different stakeholders in society, including industry, science, governments, and communities, to reach a consensus on what a truly sustainable mining and metallurgical industry means, with clear and measurable criteria that allow for the continuous evaluation and improvement of practices and processes used in aluminum production.

Lastly, it is crucial for the industry and governance to establish open and transparent dialogue with communities, promote participation and collaboration, and foster practices that generate trust and social acceptance.

## EU ALSiCal project

ALSiCal is a Research & Innovation H2020 project that has developed an innovative, groundbreaking technology for the sustainable production of three high-demand raw materials (alumina, silica, and precipitated calcium carbonate) from currently unexploited aluminosilicate resources (anorthosite), with no bauxite residue generation and potential negative balance of CO<sub>2</sub> emission. This technology is based on one single processing route and has been validated at TRL4 (partly at TRL5). The technology



has now proven techno-economic feasibility, largely improved Life Cycle Assessment and initial advantageous social impact compared to the current processes. The potential value creation in a more sustainable manner is therefore very large.



### Scope and objectives

This Workshop is organized by the Association of Iberoamerican Geological and Mining Surveys (ASGMI) with the support of PNO, IFE and the Brazilian Geological Survey (CPRM-SGB). **The main objective is to establish a dialogue among different social actors (industry, research, governance, and communities) that allows for obtaining answers to meet the growing demand for Aluminum as a result of the energy transition, in a sustainable manner while maintaining the industry's competitiveness and profitability, as well as social acceptance.** The workshop will also increase awareness of EU ASiCal proposed technology for the co-production of 3 key raw materials (alumina, silica and precipitated calcium carbonate) with negative CO<sub>2</sub> emissions and zero-waste, highlighting its main achievements and way forward.

Hence, this event aims to:

- Discuss different perspectives related to sustainability, stewardship, R&D situation and needs in the raw materials industry, with focus on alumina production, as well as challenges and roadmap for Aluminium as a critical raw material for the green transition.
- To provide an overview of new technologies, innovations, and challenges related to the aluminum and other metals industries throughout their value chain, encompassing social acceptance of mining activities, extraction processes, and transformation of the mineral into its final products.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820911



- Position AISiCal technology as a supplementary route to the existing alumina and aluminium value chain. We will address the challenges of turning an unexploited ore (anorthosite) into a sustainable resource for the alternative alumina production and boost symbiotic value chains.
- Foster future synergies with governance, academia and industry.

### **Registration**

The Workshop is freely accessible. Only registered participants will have access to the workshop and the informative material. This event will be organised in a hybrid format.

Online Attendance: [https://us06web.zoom.us/webinar/register/WN\\_gER7ZQWcS1uMfsPrld-XCQ](https://us06web.zoom.us/webinar/register/WN_gER7ZQWcS1uMfsPrld-XCQ)

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30<sup>th</sup> January – 1<sup>st</sup> February 2024

## Programme

**Location:** HOTEL FUSION HPLUS EXPRESS - Shn Quadra 1 Lote A Bloco D, Brasilia, 70701-040, Brazil. [Fusion Hplus Express+ - Google Maps](#)

### DAY 1 – Tuesday 30<sup>th</sup> January

#### Welcome by public authorities and Government

8:30-9:00	Attendee registration	
9:00-9:20	Welcome by the Brazilian authorities	Francisco Valdir Silveira - Director of Geology and Mining - Geological Survey of Brazil

#### Session 1

#### The Raw Materials world challenge: European and Latin American perspectives

**Chair: Rafael Duarte, Chief of the International Affairs Advisory at the Geological Survey of Brazil (SGB).**

9:20–09:40	EU policy on raw materials and EU R&I funding for raw materials	Daniel Cios. Policy Officer at DG GROW, European Commission. Unit for Energy Intensive Industries, Raw Materials, Hydrogen
09:40-10:00		Rafael Duarte, Chief of the International Affairs Advisory at the Geological Survey of Brazil (SGB).
10:00-10:20	Brazilian mineral industry position: Current business and needs for further expansion	Cinthia Rodrigues. Manager Research & Development. Brazilian Mining Association (IBRAM), Brazil
10:20-10:40	<i>Coffee Break</i>	
10:40-11:00	Status and sustainability projections of the European Aluminium industry	Konstantinos Kollias, Innovation Project Officer at European Aluminium Association, Brussels.
11:00-11:20	The aluminium industry in Brazil: strengths and needs for steady growth	Janaina Donas. President of Brazilian Aluminium Association, Brazil
11:20-11:40	Hydro's Journey to Re-invent Bauxite Mining and Alumina Refining to Create a Sustainable Future	Rafael Vieira da Costa. Technology Director Bauxite & Alumina, Hydro, Brazil



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11:40-12:00	Sustainability and Innovation in the Raw Materials Industry: A Mytilineos Case Study	Nick Bitsios. Head of Brussels Office European Affairs & Regulatory Advocacy Division for Mytilineos SA, Brussels
12:00-12:20	Low carbon aluminium production at Companhia Brasileira de Alumínio	Leandro Campos de Faria. Head of Sustainability at Companhia Brasileira de Alumínio (CBA), Brazil
12:20-12:30	Final Q&A and remarks from the session	
12:30-13:50	<i>Lunch pause</i>	

## Session 2

### Innovation efforts for more sustainable raw materials industry Chair: Cinthia Rodrigues, Gerente de P&D (IBRAM – Instituto Brasileiro de Mineração)

13:50-14:10	Overview of key European Innovation projects related to aluminium, silica and calcium carbonate among others	Thymis Balomenos. Research Coordinator and senior advisor of MYTILINEOS, Greece
14:10-14:30	The AISiCal project: radical innovation for exploiting alternative sources	Suni Aranda. Business developer and Principal Scientist Sustainable Minerals and Metals. Institute for Energy Technology (IFE), Norway
14:30-14:50	<i>Coffee Break</i>	
14:50-15:10	Business potential and market opportunities of the AISiCal technology	Tassos Kladis. Founder Advanced Minerals and Recycling Industrial Solutions (AdMiRis), Greece
15:10-15:30	How modelling tools and interdisciplinary collaboration make innovation efficient (and successful). The AISiCal case	Javier Saez de Guinoa. Fellowship at University of Zaragoza (UNIZAR), Spain
15:30-15:40	Final Q&A and remarks from the session	



## DAY 2 – Wednesday 31<sup>st</sup> January

### Session 3

#### The source for change: Geology of critical raw materials

**Chair: Fredy Guzmán (Head of Environmental Projects at the Mexican Geological Survey and a Chair of the Mine Environmental Liabilities Group of ASGMI. Mexico)**

9:00-9:20	Critical raw materials in Ibero-America. Mapping of critical minerals	Guilherme Ferreira (Serviço Geológico do Brasil – Brazil Geological Survey, Mineral Resources Expert Group of ASGMI)
9:20-09:40	Brazilian potential in raw materials	Mauricio Pavan, Coordenador Executivo – Departamento de Geologia, Serviço Geológico do Brasil – Brazil Geological Survey.
9:40-10:00	Anorthosites in Brazil	Ana Claudia de Aguiar Accioly. Brazil Geological Survey
10:00-10:20	<i>Coffee Break</i>	
10:20-10:40	Potential for critical minerals recovery as by-products of major ore deposits in Brazil	Prof. Dr. Roberto Xavier, Diretor Executivo Agency for the Development and Innovation of the Brazilian Mining Sector (ADIMB), Brazil
10:40-11:00	Terra Goyana present and future	Lucas Ramos. Geology specialist, Terragoyana, Brazil
11:00-11:10	Final Q&A and remarks from the session	

### Session 4

#### Sustainability views

**Chair: Mauricio Pavan, Executive Coordinator at the Department of Geology of the Geological Survey of Brazil**

11:10-11:30	Identification, characterization, and recovery of mining environmental liabilities.	Fredy Guzman. Head of Environmental Projects at the Mexican Geological Survey and a Chair of the Mine Environmental Liabilities Group of ASGMI. Mexico
11:30-11:50	Serviço Geológico de Brasil – CPRM: Líneas de acción en relación con los Pasivos Ambientales Mineros.	Felipe Tavares, Geologist, Economic Geology Division, Geological Survey of Brazil.
11:50-14:10	<i>Lunch pause</i>	
14:10-14:30	Shaping resilience: geomorphic technical approaches to erosion monitoring and the crafting of	Ignacio Zapico. Assistant Professor at Complutense University of Madrid (UCM) and CTO of STONE161. Spain



	stable, sustainable rehabilitated mining landscapes	
14:30-14:50	Social sustainability for metallurgical innovation.	Anne Merrild. Professor and Head of Department, University of Aalborg (AAU), Denmark.
14:50-15:00	Final Q&A and remarks from the session	
14:30-14:50	<i>Coffee Break</i>	

## Session 5: Panel discussion

### Innovation opportunities: Ongoing initiatives, needs, synergies and collaboration.

**Chair: Felipe Tavares, Geologist, Economic Geology Division at the Geological Survey of Brazil.**

14:50-16:30	<ul style="list-style-type: none"> <li>• Cinthia Rodrigues, Gerente de P&amp;D (IBRAM – Instituto Brasileiro de Mineração)</li> <li>• Janaina Donas. President of Brazilian Aluminum Association, Brazil</li> <li>• Fredy Guzman. Head of Environmental Projects at the Mexican Geological Survey and a Chair of the Mine Environmental Liabilities Group of ASGMI. Mexico</li> <li>• Suni Aranda. Business developer and Principal Scientist Sustainable Minerals and Metals. Institute for Energy Technology (IFE), Norway.</li> <li>• Prof. Dr. Roberto Xavier, Executive Director Agency for the Development and Innovation of the Brazilian Mining Sector (ADIMB), Brazil</li> </ul>
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## DAY 3: Thursday 1<sup>st</sup> February

### Visit to Terra Goyana mining area

Full day	Transfer from Brasilia to the <b>Terra Goyana</b> mining area <a href="https://www.terragoyana.com.br/">https://www.terragoyana.com.br/</a> where the visit will take place. Visit to the mine and bauxite/anorthosite outcrops. Transfer from the mine site to Brasilia hotels	<a href="https://www.terragoyana.com.br/">https://www.terragoyana.com.br/</a>
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