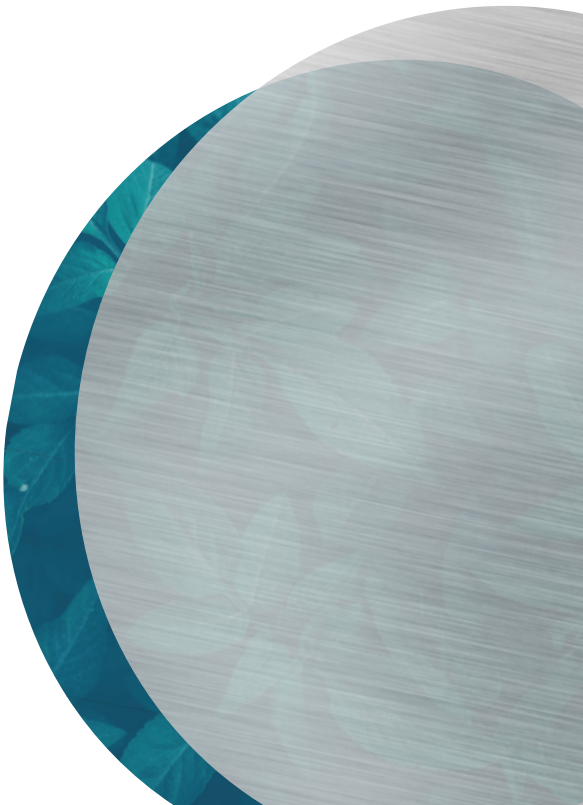
TOWARDS A MORE SUSTAINABLE ALUMINA PRODUCTION IN EUROPE

CROSS FERTILISATION WORKSHOP

23-24 SEP 2021
ONLINE EVENT



ORGANISED BY:

removAL

EUROPEAN ALUMINIUM

RE ACT IV

TOWARDS A MORE SUSTAINABLE ALUMINA PRODUCTION IN EUROPE

Online Clustering Workshop (September 23rd-24th, 2021)

Alumina is essential in the aluminium production value chain. Approximately 2 tonnes of alumina are indeed needed for producing 1 tonne of primary aluminium. Alumina is a key raw material produced globally and at European level. Globally, about 134 Mt of alumina are produced (IAI, 2021) which about 6 Mt is produced in EU-27, i.e. approximately 5% of the global production (European Aluminium, 2021). In addition to this domestic production, approximately 2.5 Mt of alumina need to be imported to support the production of 4 Mt primary aluminium in Europe.

This 2-days workshop aims to present the main outcomes from the relevant on-going EU H2020 projects addressing this upstream part of the aluminium value chain.

On one side, this workshop will present how bauxite residue can be valorised, e.g.

- via the various processing routes addressed under the EU **RemovAL** project.
- via specific valorisation concept in the cement industry as considered under the **ReActiv** project.
- via the benefits of extracting Scandium and other valuable REE and metals as addressed in the **SCALE** project and relevant projects (**REEBAUX** and **RIS-RESTORE**).

On the other side, potential alternative alumina production routes will be presented, as studied by the EU **AlSiCal** & **ENSUREAL** projects. Additionally, the concept of industrial symbiosis will be further investigated from a business model perspective as addressed in **CORALIS** or from synergies with the silicon value chain as studied in **SisAL** or from skills need perspective as covered in **SAIS-SPIRE**.

The main objectives of this workshop are to promote exchange and cross-fertilisation between those EU projects and the industry in order to foster new synergies. The ultimate goal is to identify the most promising routes to boost the industrial symbiosis as well as to turn bauxite residue into resource or to produce alumina from alternative sources.

The workshop will be articulated between several plenary sessions where the various project outcomes will be presented. All sessions will be followed by Q&A exchange in combination with networking break-out and coffee break sessions, where participants will be invited to pursue the discussion with speakers and each other in a user-friendly virtual area.

The Workshop is freely accessible and the deadline for registration is **15 September**.

Only registered participants will have access to the workshop.

Registration is available **here**.

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23 SEP DAY 1

09:30 – 10:45

SESSION 1: SETTING THE SCENE

Welcome by **Gerd Götz**, European Aluminium; **Efthymios Balomenos**, RemovAL coordinator & **Philippe Benard**, Reactiv coordinator

Chair: **Luc Demange**, Rio Tinto

KEYNOTE SPEECH → **European Raw Materials Alliance: a key enabler to a decarbonised and circular Europe, Bernd Schäfer**, Chief Executive Officer and Managing Director EITRawMaterials

- Long term sustainability of the aluminium industry and the role of technology, **Pernelle Nunez**, International Aluminium Institute
- Europe at the forefront of innovative alumina processing, **Christian Leroy & Konstantinos Kollias**, European Aluminium

10:45 – 11:15 NETWORKING COFFEE BREAK

11:15 – 12:45

SESSION 2: FOCUS ON THE REMOVAL PROCESSING ROUTES FOR BAUXITE RESIDUES

Chair: **Stephan Beaulieu**, Aughinish

- RemovAL presentation: The multi-processing routes concept for Bauxite Residue valorisation, **Efthymios Balomenos**, Mytilineos
- Pilot scale demonstration of RemovAL bauxite residue valorisation: An ecosystem analysis, **Lisa O'Donoghue**, University of Limerick (UL)
- Circular economy and Life Cycle impacts of valorisation pathways for Bauxite Residue, **Johan Berg Pettersen**, Norwegian University of Science and Technology (NTNU)

12:45 – 13:15 NETWORKING BREAK-OUT SESSION
13:15 – 14:15 LUNCH BREAK

14:15 – 16:00

SESSION 3: EXTRACTING RARE EARTH ELEMENTS (REE) AND OTHER ELEMENTS FROM ALUMINA VALUE CHAIN

Chair: **Dimitrios Panias**, National Technical University of Athens (NTUA)

- Ga extraction from Spent Bayer Liquor (RemovAL), **Carsten Dittrich**, MEAB Chemie Technik GmbH
- Production of Scandium compounds from BR (SCALE), **Efthymios Balomenos**, Mytilineos
- REE recovery from bauxite and bauxite residue in the Eastern and South-Eastern European region (REEBAUX), **Nenad Tomašić**, University of Zagreb-Faculty of Science (UNIZG-PMF)
- Reprocessing of red mud tailings in the Eastern and South-Eastern European region with emphasis on extraction of REE, Sc, Y, Hf, Zr, and Ti (RIS-RESTORE), **Ana Mladenović**, **Mateja Košir**, **Uroš Herlec**, Slovenian National Building and Civil Engineering Institute (ZAG)

16:00 – 16:30 NETWORKING BREAK-OUT SESSION

16:30 – 17:15

SESSION 4: FUTURE PROJECT OPPORTUNITIES & DEBRIEF OF DAY 1

Chair: **Ken Evans**, International Aluminium Institute

- Horizon Europe & EIT raw materials: What are the main opportunities for the aluminium value chain?, **Christian Leroy**, European Aluminium
- Debrief and main conclusions of Day 1 by the chairs

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24 SEP DAY 2

09:00 – 10:30 — **SESSION 5: INDUSTRIAL SYMBIOSIS AND CIRCULARITY**

Chair: **Philippe Meyer**, Novelis

KEYNOTE SPEECH → **Hubs for Circularity: Opportunities for the aluminium industry, Jürgen Tiedje**, Head of Unit - Industrial Transformation, DG Research, European Commission

- Waste recovery from the aluminum sector via industrial symbiosis (CORALIS), **Ignacio Martin**, Research Center for Energy Resources and Consumption (CIRCE), **Marco Fontanella**, Raffmetal
- Valorisation of secondary Al sources for the production of Al-Si alloys and high purity alumina (SisAL), **Gabriella Tranell**, Norwegian University of Science and Technology (NTNU)

10:30 – 11:00 — NETWORKING VIRTUAL COFFEE BREAK + BREAK-OUT SESSION

11:00 – 12:30 — **SESSION 6: FOCUS ON REACTIV & ALTERNATIVE PRODUCTION ROUTE FOR ALUMINA**

Chair: **Carlos Rodriguez Gago**, Alcoa

- ReActiv presentation: Challenges and research programme proposal, **Philippe Benard**, LafargeHolcim
- The Pros and Cons of the improved Pedersen Process (ENSUREAL), **Casper Van der Eijk**, SINTEF
- Radical innovation towards sustainable co-production of minerals (AlSiCal), **Asuncion Aranda**, Institute for Energy Technology (IFE)

12:30 – 13:00 — NETWORKING BREAK-OUT SESSION

13:00 – 14:00 — LUNCH BREAK

14:00 – 15:45 — **SESSION 7: SUSTAINABILITY IN PROCESS INDUSTRY AND CLOSURE**

Chair: **Anastasios Kladis**, AdMiRIS

- Policy and Stakeholder analysis, **George Tentes**, Green2Sustain
- (Near) zero waste processing: lessons learned from several EU projects, **Liesbeth Horckmans**, Vito
- Skills Alliance for industrial symbiosis: A cross-sectoral blueprint for a sustainable process industry (SAIS-SPIRE), **Clara Behrend**, TU Dortmund
- Main conclusions of Day 2 by chairs

Closure by **Efthymios Balomenos**, Mytilineos & **Gerd Götz**, European Aluminium

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