

## Innovative pilot for Silicon production with low environmental impact using secondary Aluminium and silicon raw materials

Project acronym (SisAl Pilot)

Start date of project	01.05.2020
W/D p° and title	WP6, D6.7 Report on clustering events with EAA,
WP II and the	Euroalliages and RMIS
Responsible Author(s)	Maria Wallin and Valentina Cinti
Contributor(s)	Thais Mothe-Diniz
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## **Revision history**

Version	Date (MM/DD/YYYY)	Created/Amended by	Changes
01	17/10/2024	Maria Wallin	Created the first draft
02	28/10/2024	Thais Mothe-Diniz	Edited the draft and added the conclusion
03	29/10/2024	Valentina Cinti	Added information under communication



## Summary

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#### **EXECUTIVE SUMMARY**

This deliverable provides a description about the roundtable event titled "Critical raw materials and circular economy: A new way forward for Europe?" that was jointly organized by Science Business and SisAl Pilot on October 17<sup>th</sup>, 2024 at NTNUs Brussels office in Brussel, Belgium.

Conclusions from the seminar will be publicly, described on SisAl's website, LinkedIn profile as well as in this deliverable.

This deliverable includes the flyer, the agenda, the invitation letter, the event pack, the actions implemented to inform the public about the event, including also visual examples of the D&C activities performed. A journalist from Science Business attended the event and he is working on an article summarising the discussions and outcomes from the event. This article will be published in Science business social media channels and then promoted by the SisAl Pilot project. It will also be shared with policy makers, EU networks, the EU commission and other relevant stake holders.

#### **INTRODUCTION**

The high-level round table discussion was organised in collaboration between NTNU, SisAl Pilot and Science Business. NTNU was strongly involved in the description of the concept and in the development of the agenda as well as in the invitation of participants to the round table discussion from the consortium and their network. Science Business was responsible for drafting the documents, developing the marketing profile, inviting speakers from the European Commission, Policy makers and relevant associations to the event as well as moderating the discussion. In addition, a journalist from Science Business will write an article that will be used in future communications with stakeholders by Science Buniess and the SisAl consortium.

### CONCEPT

Since late 2019, the European Green Deal has been one of the defining themes of EU policy: a wide-ranging package of initiatives intended to put Europe on a path to becoming the world's first climate-neutral continent by 2050. From the beginning, policy makers have underlined that attaining this long-term goal will depend heavily on European industry, plus other research and innovation (R&I) organisations, to lead the way – both in developing and adopting net-zero technologies, and in embracing circularity in mass production and consumption systems.

During the intervening years, various crises have revealed Europe's vulnerabilities in global supply and manufacturing chains, not least around access to and use of critical raw materials. This has particular relevance for large-scale processing industries – such as aluminum, steel, cement and glass – which have become an international battleground for primary and secondary raw materials, as well as the location of key refining and processing facilities. Put simply, if the EU wishes to remain globally competitive and



autonomous in these sectors in the years ahead, it will need to use every asset at its disposal – of which its historical excellence in science and technology is one of the most valuable.

So what can be done to make Europe more materially resilient while increasing climate-friendly competitiveness? The SisAl Pilot project is a 'live' case study of how industry-science partnerships can contribute – in this instance around silicon, a vital component in sectors ranging from semiconductors, steel and energy to aerospace, automotive and glass. Featuring a coalition of 22 partners funded by the EU's Horizon 2020 research programme, the project's strategic objective has been to scale up, demonstrate and patent a new carbon-clean technology to produce silicon and silicon alloys, along with metallurgical grade alumina (MGA) and high purity alumina (HPA).

Fundamentally, the SisAl Pilot is grounded in a novel approach to extracting these metals and alloys from quartz in slag. In basic terms, this means using secondary raw materials – such as aluminium scrap and dross – instead of high-carbon-intensity equivalents in furnace-based reduction processes. With partners having validated the solution up to TRL 7, along with product quality, environmental impact and economic parameters, the stage is now set for commercialisation and the creation of new opportunities for relevant European industries.

The results of the SisAl project are thus an entry point into a wider set of discussions: what are the most effective pathways to commercialising circular, net-zero technologies and solutions in Europe? Which levers are available to support market uptake and scaling, including ways to secure access to the primary and secondary materials on which these breakthrough technologies depend? And what else should the EU and member-states consider to increase Europe's production capacity and valorisation of waste streams? On October 15, Science | Business – in collaboration with the SisAl Pilot consortium – will convene a select group of senior figures from the worlds of policy, industry, research and finance to address these important questions and generate recommendations for policy makers to consider as the EU prepares its next wave of R&I programmes to support climate neutrality, circular economy and competitiveness.

## AGENDA

#### 14:00 Welcome and introductory remarks

- Simon Pickard, Moderator & Network Director, Science | Business

#### 14:05 Setting the scene: SisAl Pilot and the prospects for industrial transformation

- Gabriella Tranell, Coordinator, SisAl Pilot & Professor, Norwegian University of Science and Technology

#### 14: 10 CRM and circularity: New mandate, new momentum for R&I?

As highlighted in Ursula von der Leyen's political guidelines and mission letters to her prospective new college of commissioners, the next five-year policy cycle will see a major step-up in efforts to advance clean industry and circular economy in Europe. Within this context, it is clear that more effective development, valorisation



and commercialisation of novel research and technologies will be central to achieving these objectives. of these goals for the EU's wider ambitions for decarbonisation, industrial strategy, economic security and sustainability – and by extension how these may influence the future direction and objectives for research and innovation (R&I) policy and programming, both for the remainder of Horizon Europe and for its successor, FP10.

- *Featuring:* **Rosalinde van der Vlies**, Director, Clean Planet, DG Research and Innovation, European Commission

#### 14:45 From waste to market: Can Europe find the right formula?

Under the umbrella of the anticipated Circular Economy Act, President von der Leyen highlighted the need for Europe to "create market demand for secondary materials and a single market for waste, notably in relation to critical raw materials". Through the COVID and energy crises, Europe has recognised the risks inherent in supply chain and CRM dependency, not to mention the race for resources to lead in technology domains vital for the green transition, such as semiconductors, photovoltaics and batteries.

- Featuring: Sigurgeir Tryggvason, Chief Executive Officer, Summa Asset Management

#### 15:25 Coffee Break

#### 15:50 Powering ahead: What does industry need, what can policy deliver?

Given geopolitical and economic realities, the EU is in a race against time – as well as other regional blocks – to boost its industrial competitiveness and technology sovereignty, and to accelerate the green and digital transitions in a fair, inclusive way. Regardless of who is in charge, increasing Europe's innovation performance will be critical to the next 5-year legislative period, as well as the EU's strategic agenda for its 2028-2035 budget cycle. In the final session of the roundtable, discussions will focus initially on the links between CRM, circularity and the clean energy revolution – without which Europe's industrial decarbonisation agenda will be exceedingly difficult to realise. Beyond that, the session will also explore other key enabling instruments and conditions for success, including business-science partnerships and investment mechanisms required to scale up novel technologies and processes in key sectors, and to keep intellectual assets in Europe. By its conclusion, the aim is to have identified a number of recommendations – for policy makers, from potential end users of these solutions – to set Europe on the path to success as the new mandate begins.

- *Featuring:* **Paula Pinho,** Director, Just Transition, Consumers, Energy Security, Efficiency and Innovation, DG Energy, European Commission

#### 16:55 Concluding remarks

17:00 Networking reception



### **COMMUNICATION**

The following banner was created by Science Business and it was used to promote the event on different social media platforms.



Science Business promoted the event on their LinkedIn page.

Sience/Business
What can be done to make Europe more materially resilient while increasing its climate-friendly #competitiveness?
On 15 October, Science Business, in collaboration with the SisAl Pilot Project, will host a closed roundtable to explore the commercialisation of net-zero technologies, critical raw materials and the circular economy as a new way forward for Europe.
The SisAl pilot project has developed a breakthrough process for producing <b>#silicon</b> for sectors such as energy, <b>#semiconductors</b> and <b>#automotive</b> . By replacing carbon-intensive processes with aluminothermic reduction using secondary aluminium scrap and dross, the project aims to reduce both environmental impact and production costs. With 22 partners involved, SisAl is a model of industry- academia collaboration and its innovations are now ready for commercialisation.
As the project approaches this stage, the roundtable will address the key challenges ahead: securing access to critical materials, scaling up these technologies and maximising Europe's potential for a circular, competitive and #sustainable economy.
https://lnkd.in/dQTJTKZX
More information on the project: https://lnkd.in/ena-m-E
#CircularEconomy #NetZero #Sustainability #Innovation #RawMaterials #GreenInnovation #GreenDeal #ResourceEfficiency #CleanTechnology #SustainableIndustry #ClimateNeutral #research #FutureOfEnergy #EUProject #Horizon2020 #HorizonEU
Visa översättning
Critical raw materials and circular economy: A new way forward for Europe?
Brussels
In partnership with med Du och 21 till
Sisal Pilot ONTNU



The LinkedIn post below was posted after the event by Science Business (left) and NTNUs Brussels Office (right).



Ad hoc communication material has also been created specifically to advertise the event by the SisAl Pilot team:

- A new banner has been implemented, and published on the project website homepage, redirecting to the invitation letter elaborated in collaboration with Science Business.
- A LinkedIn card has been posted on socials and used to promote the event.
- A news was published on the project website <u>https://www.sisal-pilot.eu/news/critical-raw-</u> materials-and-circular-economy-a-new-way-forward-for-europe/



Posts on the social media project accounts and spread through the CiaoTech & PNO Consultants
 Europe accounts and websites (Innovation Place) were published, namely:

https://www.innovationplace.eu/news/join-the-sisal-pilot-event-on-critical-raw-materials-andcircular-economy-a-new-way-forward-for-europe-15-october-brussels

https://www.linkedin.com/feed/update/urn:li:share:7249844668824248320?actorCompanyId=233 2689

https://www.linkedin.com/feed/update/urn:li:share:7249798021025071105/?actorCompanyId=15 075013

https://www.linkedin.com/feed/update/urn:li:share:7249787393304580099/?actorCompanyId=71 148571

SisAl Pilot Project on X: "Join us our selected panel of experts from policy, industry, research and finance to address key questions and create recommendations for the EU #rawmaterials future! Cotober 15th, \*Brussels https://t.co/YDBi9KsieE @EU HaDEA

https://www.linkedin.com/feed/update/urn:li:activity:7252284931664429056/

- The news about the event has been distributed through the Innovation Place monthly newsletter, reaching out to more than 10.000 R&D organizations
- The news about the event was also translated into Italian and published in the Ricerca & Innovazione newsletter, <u>https://www.ricercaeinnovazione.it/news/sisal-pilot-alle-battute-finali-ripercorre-le-sue-tappe-fondamentali</u>
- A page dedicated to the final cluster event has been created to document it, as done for the previous clustering event, available here <u>"Critical raw materials and circular economy: A new way</u> forward for Europe?", Oct.15 - Brussels » SisAl Pilot - SisAl Pilot (sisal-pilot.eu).
- A piece of news will be issued through the CiaoTech PNO monthly newsletter (November issue) to celebrate the success of the round table.



## **VISUAL EXAMPLES OF POSTS, PUBLICATIONS OF NEWS AND COMMUNICATION MATERIALS**

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Join our next online course on hydrometallurgy

Critical	l raw materials and circular econom
	A new way for ward for Europe:
	🛗 15 October 🕓 14:00 – 17:00 CEST
MTN	NUS Brussel office at Rue Guimard 9, 1040 Bruxelles, 2nd floor. Main entrance from Rue Guimard
	DISCOVER MORE



#### Wednesday, October 9, 2024

#### Join the SisAl Pilot event on 'Critical raw materials and circular economy: A new way forward for Europe?' - 15 October, Brussels

We are pleased to invite you to participate in an exclusive, high-level involutable taking place in Brussels on Thursday, 15 October (14:00 – 17:00 CSS), which Sauk\_Black project is organizing in partentiny burn Science Bulinare. Our control theme will be 'Clicical raw materials and circular resonant's new way forward for Europe7: As highlighted in the June 27 conclusions from the European Cauck; the EU in new transperi monther will prioritiona - among others - the development of more circular and ensource efficient industrial systems and a more supportive environment for scaling up Europe's manufacturing caucht for net-zine technologies and products. We will converse a steeted group of series from the works of publics, industry, research and finance to address key questions and create recommendations for the EU to reflect upon as the new stategic mandate begins. Join aut NTNIS burssel effice a Rue Guinard 9, 1040 Bruxelles, 2nd floor (main entrance from Rue Guinard) to know more about the future of raw materials in Europe1.

\* Back to all News











## **PHOTOS FROM THE EVENT**



















#### **CONCLUSION**

The roundtable event on "Critical Raw Materials and Circular Economy: A New Way Forward for Europe?" held on October 15, 2024, at the NTNU Brussels Office, brought together key stakeholders from policy, industry, and academia to address Europe's strategic challenges and opportunities in the circular economy. The discussions underscored the urgency of enhancing Europe's material resilience and industrial competitiveness through innovative, circular, and net-zero technologies. The SisAl Pilot project was highlighted as a prime example of successful industry-science collaboration, demonstrating the potential for scalable, carbon-clean silicon production.

This event was pivotal in fostering dialogue on the pathways to commercializing circular technologies and the necessary policy frameworks to support this transition. The insights and recommendations generated will inform future EU R&I programs, emphasizing the critical role of sustainable practices in achieving climate neutrality and economic sustainability. The engagement of high-level experts and policymakers underscored the event's significance in shaping a resilient and competitive European industrial landscape.

We encourage all stakeholders to continue this collaborative effort, leveraging the momentum generated by this roundtable to drive forward innovative solutions and policies. By working together, we can ensure a sustainable and competitive future for Europe.

#### **ATTACHMENTS**

- Speaker invitation
- Participant letters
- Event pack



Rosalinde Van der Vlies Director, Clean Planet, DG RTD European Commission Brussels, Belgium

Brussels, 23 July 2024

**Speaker Invitation – Critical raw materials and circular economy: A new way forward for Europe?** An invitation-only roundtable, organised by Science/Business in partnership with SisAl Pilot & NTNU Brussels – 15 October 2024 – 14:00 to 17:00 CET

Dear Ms Van der Vlies,

On behalf of Science | Business, I am pleased to invite you as a speaker to an exclusive, high-level roundtable taking place on **Thursday**, **15 October (14:00 – 17:00 CET)**, in partnership with the Horizon 2020-funded SisAl Pilot project and the Norwegian University of Science and Technology (NTNU) Brussels office. Our central theme will be "Critical raw materials and circular economy: A new way forward for Europe?".

As highlighted in the June 27 conclusions from the European Council, the EU's next strategic mandate will prioritise – among others – the development of more circular and resource-efficient industrial systems and a more supportive environment for scaling up Europe's manufacturing capacity for net-zero technologies and products. At the interface between these two objectives lies Europe's ambition for greater autonomy in the fields of critical and strategic raw materials – not just in terms of access to them in their primary form, but also the 'smart' use of secondary materials and waste streams. The latter in particular has major implications for Europe's large-scale processing industries, such as steel, aluminium, cement and glass – and by extension the many others which rely on their output for their own manufacturing systems. Put simply, if the EU wishes to remain globally competitive and autonomous in these sectors, it will need to use every asset at its disposal – including its historical excellence in science and technology development to drive industrial transformation.

So what can be done to make Europe more materially resilient while increasing climate-friendly competitiveness? The SisAl Pilot project is a 'live' case study of how industry-science partnerships can contribute – in this instance around silicon, a vital component in sectors ranging from semiconductors, steel and energy to aerospace and automotive. The project's main aim – recently achieved – has been to develop, demonstrate and patent a new carbon-clean, circular manufacturing technology to produce silicon and silicon alloys from industrial waste, including quartz and aluminium scrap.

More importantly, the SisAl Pilot project results offer an entry point into a wider set of discussions that are highly relevant to the next EU policy cycle, including: what are the most effective pathways to commercialising circular, net-zero technologies and solutions in Europe? Which levers are available to support market uptake and scaling, including ways to secure access to the primary and secondary materials on which these breakthrough technologies depend? And how else might the Commission and memberstates advance Europe's production capacity and valorisation of waste streams? On October 15, Science | Business, the leading media specialised in EU research and innovation policy, will convene a select group of senior figures from the worlds of policy, industry, research and finance to address these questions and create recommendations for the EU to reflect upon as the new strategic mandate begins.

Thank you very much in advance for your consideration, and we look forward to hearing from you.

Yours sincerely,

HASEH,

Maryline Fiaschi CEO, Science | Business

IN PARTNERSHIP WITH:



SCIENCEBUSINESS

Anders Maren Programme Manager, Strategic Innovation for Metallic Materials Vinnova Stockholm, Sweden

Brussels, 24 July 2024

**Participant Invitation – Critical raw materials and circular economy: A new way forward for Europe?** An invitation-only roundtable, organised by Science/Business in partnership with SisAl Pilot & NTNU Brussels – Tuesday, 15 October 2024 – 14:00 to 17:00 CET

Dear Mr Maren,

On behalf of Science Business, I am pleased to invite you to participate in an exclusive, high-level roundtable taking place in Brussels on **Thursday**, **15 October (14:00 – 17:00 CEST)**, which we are organising in partnership with the Horizon 2020-funded SisAl Pilot project and the Norwegian University of Science and Technology (NTNU) Brussels office. Our central theme will be "**Critical raw materials and circular economy: A new way forward for Europe?**".

As highlighted in the June 27 conclusions from the European Council, the EU's next strategic mandate will prioritise – among others – the development of more circular and resource-efficient industrial systems and a more supportive environment for scaling up Europe's manufacturing capacity for net-zero technologies and products.

At the interface between these two objectives lies Europe's ambition for greater autonomy in the fields of critical and strategic raw materials – not just in terms of access to them in their primary form, but also the 'smart' use of secondary materials and waste streams, which are often subject to fierce bidding wars in international markets. The latter in particular has major implications for Europe's large-scale processing industries, such as steel, aluminium, cement and glass – and by extension the many others which rely on their output for their own manufacturing systems. Put simply, if the EU wishes to remain globally competitive and autonomous in these sectors, it will need to use every asset at its disposal – including its historical excellence in science and technology development to drive industrial transformation.

So what can be done to make Europe more materially resilient while increasing climate-friendly competitiveness? The SisAl Pilot project is a 'live' case study of how industry-science partnerships can contribute – in this instance around silicon, a vital component in sectors ranging from semiconductors, steel and energy to aerospace and automotive. The project's main aim – recently achieved – has been to develop, demonstrate (up to TRL 7) and patent a new carbon-clean, circular manufacturing technology to produce silicon and silicon alloys from industrial waste, including quartz and aluminium scrap.

More importantly, the SisAl Pilot project results offer an entry point into a wider set of discussions that are highly relevant to the next EU policy cycle, including: what are the most effective pathways to commercialising circular, net-zero technologies and solutions in Europe? Which levers are available to support market uptake and scaling, including ways to secure access to the primary and secondary materials on which these breakthrough technologies depend? And how else might the Commission and memberstates advance Europe's production capacity and valorisation of waste streams? On October 15, Science | Business – in collaboration with the SisAl consortium and NTNU Brussels office – will convene a select group of senior figures from the worlds of policy, industry, research and finance to address these questions and create recommendations for the EU to reflect upon as the new strategic mandate begins.

Thank you very much in advance for your consideration, and we look forward to hearing from you.

Yours sincerely,

Maryline Fiaschi CEO, Science | Business



IN PARTNERSHIP WITH:



# CRITICAL RAW MATERIALS AND CIRCULAR ECONOMY: A NEW WAY FORWARD FOR EUROPE?

A Science/Business closed-door roundtable organised in partnership with the SisAl Pilot Project

Hosted by the NTNU Brussels Office

15 OCTOBER 2024 (14:00 - 17:00 CET)

NTNU Brussels Office, Rue Guimard 9, 1040 Bruxelles





Since 2020, various crises have revealed Europe's vulnerabilities in global supply and manufacturing chains, not least around access to and use of critical raw materials. This has particular relevance for large-scale processing industries – such as aluminum, steel, cement and glass – which have become an international battleground for primary and secondary raw materials, as well as the location of key refining and processing facilities. Put simply, if the EU wishes to remain globally competitive and autonomous in these sectors in the years ahead, it will need to use every asset at its disposal – of which its historical excellence in science and technology is one of the most valuable.

More recently, this reality has been acknowledged by Commission president Ursula von der Leyen in her political guidelines and mission letters to commissionersdesignate for her second term in office. Decarbonisation and competitiveness are at the very top of her agenda – thereby reflecting key recommendations in the Draghi Report. Beyond the commitment to a "Clean Industrial Deal", there are pledges for a revamped industrial strategy, a new circular economy act, and R&I to be placed "at the heart of the European economy".

So what can be done to make Europe more materially resilient while increasing climate-friendly competitiveness? The SisAl Pilot project is a 'live' case study of how industry-science partnerships can contribute – in this instance around silicon, a vital component in sectors ranging from semiconductors, steel and energy to aerospace, automotive and glass. Featuring a coalition of 22 partners funded by the EU's Horizon 2020 research programme, the project's strategic objective has been to scale up, demonstrate and patent a new carbon-clean technology to produce silicon and silicon alloys, along with metallurgical grade alumina (MGA) and high purity alumina (HPA).

Fundamentally, the SisAl Pilot is grounded in a novel approach to extracting these metals and alloys from quartz in slag. In basic terms, this means using secondary raw materials – such as aluminium scrap and dross – instead of high-carbon-intensity equivalents in furnace-based reduction processes. With partners having validated the solution up to TRL 7, along with product quality, environmental impact and economic parameters, the stage is now set for commercialisation and the creation of new opportunities for relevant European industries.

The results of the SisAl project are thus an entry point into a wider set of discussions: what are the most effective pathways to commercialising circular, net-zero technologies and solutions in Europe? Which levers are available to support market uptake and scaling, including ways to secure access to the primary and secondary materials on which these breakthrough technologies depend? And what else should the EU and member-states consider to increase Europe's production capacity and valorisation of waste streams?

On October 15, Science|Business – in collaboration with the SisAl Pilot consortium – will convene a select group of senior figures from across the R&I spectrum to address these important questions and generate recommendations for policy makers to consider as the EU prepares its next wave of R&I programmes to support climate neutrality, circular economy and competitiveness.

14:00 Welcome and introductory remarks

• Simon Pickard, Moderator & Network Director, Science|Business

14:05

14:10

- Setting the scene: SisAl Pilot and the prospects for industrial transformation
  - Gabriella Tranell, Coordinator, SisAl Pilot & Professor, Norwegian University of Science
    and Technology

### CRM and circularity: New mandate, new momentum for R&I?

As highlighted in Ursula von der Leyen's political guidelines and mission letters to her prospective new college of commissioners, the next five-year policy cycle will see a major step-up in efforts to advance clean industry and circular economy in Europe. Within this context, it is clear that more effective development, valorisation and commercialisation of novel research and technologies will be central to achieving these objectives.

Against this backdrop, the opening part of the roundtable will take stock of the significance of these goals for the EU's wider ambitions for decarbonisation, industrial strategy, economic security and sustainability – and by extension how these may influence the future direction and objectives for research and innovation (R&I) policy and programming, both for the remainder of Horizon Europe and for its successor, FP10.

Featuring:

• Rosalinde van der Vlies, Director, Clean Planet, DG Research and Innovation, European Commission

### From waste to market: Can Europe find the right formula?

Under the umbrella of the anticipated Circular Economy Act, President von der Leyen highlighted the need for Europe to "create market demand for secondary materials and a single market for waste, notably in relation to critical raw materials". Through the COVID and energy crises, Europe has recognised the risks inherent in supply chain and CRM dependency, not to mention the race for resources to lead in technology domains vital for the green transition, such as semiconductors, photovoltaics and batteries.

The second part of the roundtable will therefore delve deeper into the steps that the EU and member-states should consider to create the market conditions for circularity and waste valorisation – not least in terms of legislation and systems that boost industry's access to critical and strategic raw materials, such as silicon.

Featuring:

• Sigurgeir Tryggvason, Chief Executive Officer, Summa Asset Management

## 15:25 Coffee Break

15:50

## Powering ahead: What does industry need, what can policy deliver?

Given geopolitical and economic realities, the EU is in a race against time – as well as other regional blocks – to boost its industrial competitiveness and technology sovereignty, and to accelerate the green and digital transitions in a fair, inclusive way. Regardless of who is in charge, increasing Europe's innovation performance will be critical to the next 5-year legislative period, as well as the EU's strategic agenda for its 2028-2035 budget cycle.

In the final session of the roundtable, discussions will focus initially on the links between CRM, circularity and the clean energy revolution – without which Europe's industrial decarbonisation agenda will be exceedingly difficult to realise. Beyond that, the session will also explore other key enabling instruments and conditions for success, including business-science partnerships and investment mechanisms required to scale up novel technologies and processes in key sectors, and to keep intellectual assets in Europe. By its conclusion, the aim is to have identified a number of recommendations – for policy makers, from potential end users of these solutions – to set Europe on the path to success as the new mandate begins.

Featuring:

• **Paula Pinho,** Director, Just Transition, Consumers, Energy Security, Efficiency and Innovation, DG Energy, European Commission

## 16:55 Concluding remarks

### 17:00 Networking reception

14:45

AGENDA



## **CORNELIA AMIHALACHIOAE**

#### Innovation Advisor and Programme Manager, EFFRA

Cornelia Amihalachioae is the innovation and programme management advisor at EFFRA, bringing over 20 years of experience in innovation across both the private and public sectors. She has worked on various World Bank, UNDP, and SIDA-funded programmes in digital governance, energy and water. Previously, she served as a consultant for the Moldovan e-governance agency, leading its monitoring & evaluation and cammunication division. Cornelia holds a master's degree in business administration and a bachelor's degree in foreign affairs and political science, with expertise in digital and social innovation, strategic planning, and governance reforms.



## **EFTHYMIOS BALOMENOS**

#### Senior Consultant, MYTILINEOS

Efthymios Balomenos is a senior consultant at MYTILINEOS, a Greece-based energy and aluminium company, where he coordinates the EU-funded RemovAL project, focused on transforming bauxite residue into valuable products and raw materials. He has over 20 years of experience in the field and is also an assistant professor at the National Technical University of Athens (NTUA) in the laboratory of metallurgy. His ongoing research projects include improving energy efficiency in aluminium production, sustainable exploitation of rare earth ores, and advancing technologies for industrial residue valorisation. He holds a Ph.D. degree in thermodynamics from NTUA, where his doctoral research focused on developing a semi-empirical hydration model.



## **ANTÓNIO J. BAPTISTA**

#### Senior Researcher and Research Coordinator, Centre for Enterprise Systems Engineering, INESC TEC

Having previously worked at Sodecia Tech Center and at INEGI, António J. Baptista joined INESC TEC in 2023, where he develops research and innovation in "twin transition" projects. He has more than 15 years of experience in lean methodologies development and its cross-assessment on life cycle engineering management. The main fields of action include the investigation of new methodologies and tools for product-service development and complex systems, interconnected with digitisation, sustainability, circular economy, regenerative and bio-based context. He led the development of more than 12 original methodologies for performance evaluation and decision support, part of which have already been transformed into commercial software. He has been coordinator of more than 50 projects, published more than 60 scientific works, and is co-author of 7 (active) patents. António graduated in mechanical engineering and holds a Ph.D. degree in production technology from the University of Coimbra in Portugal.



### **INGEBORG FRØYSNES**

#### Special Advisor, Artificial Intelligence, Innovation Norway

Ingeborg Frøysnes leads initiatives focused on artificial intelligence (AI), education technologies and entrepreneurship at Innovation Norway. She previously served as chief operating officer at Anzyz Technologies, where she directed AI-driven text analysis projects across public sector, healthcare, and energy domains. Ingeborg's professional experience includes senior roles in technology and innovation sectors. She holds a bachelor of science degree in German studies from the Norwegian University of Science and Technology (NTNU) and a joint European master's degree in health economics and management.



## **DENIS GAUVREAU**

#### Advisor, Quebec Innovation Council

Denis Gauvreau is an expert in technology transfer and entrepreneurship with more than 30 years of experience in Canada, France, the UK and Saudi Arabia. Most recently, he was an advisor to the Innovation Council of Québec on the study of non-financial measures to support R&D and innovation in companies. Since 2019, he has played a key role at Polytechnique Montréal, where he developed a pre-seed investment fund to support the commercialisation of R&D, while also advising on international strategy and innovation initiatives. He also serves as an external expert for OECD initiatives on entrepreneurship and knowledge sharing in higher education. He holds a Ph.D. degree in pharmacology from the University of Cambridge and a background in biochemistry from the University of Montreal.

### **PHILIPPE GIARO**

## Senior Research Officer, Georesources, Mineral Engineering and Extractive Metallurgy Group, University of Liège

Philippe Giaro has held the position of senior research officer for the georesources, mineral engineering, and extractive metallurgy research group at the University of Liège since 2017. He founded Golden Share Mining Corporation in 2008 and, following the growth of several gold projects in Canada, merged with a Chinese mining group. Between 2000 and 2005, he worked for the Belgian engineering company TPF Basse Sambre and, in 2005, was appointed chief executive officer of SearchGold, a Canadian junior explorer. From 1984 to 2000, he held various positions as geologist and project manager for junior and major mining companies such as Cogema (now Orano) and Falconbridge (now Glencore). Philippe holds a bachelor's degree in geology from McGill University in Canada) and a master's degree in geological sciences from the Université de Liège.

## MÅRTEN GÖRNERUP

## Technical Manager, SisAl Pilot & Researcher, Norwegian University of Science and Technology

Mårten Görnerup is the technical manager of the SisAl Pilot through his work as a researcher at the Norwegian University of Science and Technology (NTNU). He is also chief executive officer of Metsol AB, consulting the metallurgical and energy sectors on future transitions. Previously, he served as chief executive of Hybrit Development AB, advancing fossil-free solutions for the iron and steel industry. With a Ph.D. degree in process metallurgy, he has over 25 years of experience in the metal production industry, focusing on fossil-free energy and hydrogen integration.



## **EDIT HERCZOG**

#### Chair, Administrative Board, European Union Agency for the Cooperation of Energy Regulators

Edit Herczog is chair of the SciencelBusiness Widening Group. She also holds the position of director general of Vision & Values situated in Brussels and is chair of the administrative board of the European Union's agency for the cooperation of energy regulators (ACER). She also works as senior EU liaison adviser to GÉANT, the pan-European data network for the research and innovation community. Edit is a board member of Research Data Alliance (RDA) Europe and former member of the Global Council (2017-2023). She is cochair of the RDA FAIR Data Maturity Model Working Group, and serves on the board of the Transatlantic Policy Network (TPN). Prior to establishing her company, she served two consecutive terms in the European Parliament from 2004 to 2014. Before that, she was member of the Hungarian Parliament in which role she was delegate to the Council of Europe. Before her political engagement, she worked in the private sector as regional (CEE) sales and technical manager for the specialty chemicals company, National Starch & Chemical (part of Unilever and later ICI). Edit holds an a master's degree in degree in food conservation engineering. She has held positions as research fellow at the Hungarian Academy of Sciences and teaching assistant at the University of Horticulture, and holds a certificate of company direction for strategic marketing, financial management and company law from the Institute of Directors.



## LUBOR KALAFUS

#### Manager, Circular Economy, European Steel Association

Lubor Kalafus has been with the European Steel Association (EUROFER) since 2021, focusing on circular economy issues in the steel industry, including waste-related legislation and ecodesign for sustainable products. Before joining EUROFER, he worked for a steel company in various roles, ranging from industrial hygiene and R&D to innovation and energy, earning multiple awards for his contributions to sustainability and competitiveness. Additionally, Lubor volunteers with a local civic organisation, supporting efforts to alleviate both material and moral poverty for those in need.

## HENNING KRASSEN

#### Head of Department, Future of Work and Value Creation, Industry 4.0, German Federal Ministry of Education and Research

Henning Krassen is head of department for future of work and value creation at the German federal ministry of education and research (BMBF), where he focuses on industry 4.0 initiatives. He has over 13 years of experience in energy and research policy, having previously worked as a referent overseeing energy research at Helmholtz Centres and the Wendelstein 7-X fusion project. Before joining the BMBF, he managed renewable energy and efficiency projects at Projektträger Jülich. He also held academic positions, including postdoctoral research at Uppsala University in Sweden. Henning holds a doctorate in biophysical chemistry from Bielefeld University, where he studied hydrogen production through photosynthesis.

## **FLORIAN LOOSE**

## Research Scientist, German Federal Institute for Materials Research and Testing

Florian Loose is a research scientist at the German Federal Institute for Materials Research and Testing (BAM). Prior to this, he joined the laboratory of Paul J. Chirik at Princeton University with a fellowship from the German Research Foundation (DFG). After a DFG return fellowship with Werner Thiel at TU Kaiserslautern, he transitioned to the BAM in 2020, advancing resource efficiency and circular economy by developing the recycling of carbon fibers and their safe waste treatment. Between 2021 and 2023 he also held a parttime position as desk officer supporting the Federal Ministry for Economic Affairs and Climate Action (BMWK) in the field of lightweighting. He has studied chemistry at the Carl von Ossietzky University Oldenburg and earned his Ph.D. degree *summa cum laude* in 2016.



**GUES** 



## **ELIAS MATINDE**

## Executive Manager, Pyrometallurgy Department, Mintek - South African Mineral Research Organisation

Elias Matinde leads multidisciplinary research teams in extractive metallurgy at Mintek, with over 20 years of experience in academic and applied research. He is a professional engineer and fellow of the Southern African Institute of Mining and Metallurgy (SAIMM) where he focuses on sustainable pyrometallurgical flowsheets for recovering valuable metals from industrial and urban wastes, aligning with the United Nations' Sustainable Development Goals. He holds a Ph.D. degree in metallurgical engineering from Tohoku University in Japan, a master's degree in business administration, a bachelor of science degree in metallurgical engineering from the University of Zimbabwe, and a postgraduate diploma in higher education from the University of the Witwatersrand in South Africa.



## FRANCESCO MATTEUCCI

## Former EIC Programme Manager, Advanced Materials for Energy & Environmental Sustainability, European Commission

Until September 30, Francesco Matteucci served as programme manager for advanced materials for energy and environmental sustainability within the European Innovation Council. He has 20 years of experience as an innovation manager, previously working as a researcher in materials science and as a corporate R&D manager in renewable energy technologies. During his time as an R&D manager, Francesco co-founded and directed multiple start-ups and joint labs, managing public-private partnerships. He was also a visiting professor at the University of Ferrara in Italy. He has co-managed publicly funded projects and initiatives such as the Emilia Romagna Climate-KIC Innovation Centre, the Dhitech Living Lab on Nanotechnologies, and the Emilia-Romagna Greentech Clust-ER. He has contributed as a scientific expert to the Vanguard Initiative ADMA Pilot and co-authored over 30 scientific papers and 5 patents.

## **ROBERT MIEHE**

### Head, Sustainable Value Creation Systems Research Area, Fraunhofer Institute for Manufacturing Engineering and Automation

Robert Miehe is head of the sustainable value creation systems research area at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA and an associate professor in life cycle theory of value creation systems at the Institute of Industrial Manufacturing and Factory Operation IFF at the University of Stuttgart. In these roles he is responsible for up to 60 scientists. His scientific interests lie in the fields of systems and life cycle theory, as well as the life cycle modeling and optimization of product and production systems. His scientific work is documented in numerous publications, most recently as co-editor of the first handbook on the subject of circular value creation in Germany. He also serves as an expert on the circular value creation working group of the Eureka Association.

## **CHRISTOPHE PINCK**

### Chair, Hubs 4 Circularity & Advisor, Process4Planet Partnership & Eyde Cluster

Christophe Pinck is the chair of Hubs 4 Circularity and an advisor at the Process4Planet Partnership and Eyde Cluster. With a foundation in design for sustainability, he has dedicated over 20 years to advancing sustainability across diverse fields, including transportation, product design, and ecological architecture. Christophe leads initiatives aimed at developing next-generation industrial and urban symbiosis through the Process4Planet partnership. His work at Eyde Cluster involves collaborating with approximately 80 members to foster circular production systems that enhance resource efficiency and promote new business models. He holds a bachelor's degree in 3D design for sustainability from Falmouth University in the UK and a foundation degree in transportation and product design from the Strate School of Design in France.

## PAULA PINHO

### Director, Just Transition, Consumers, Energy Security, Efficiency, and Innovation, DG Energy, European Commission

Paula Pinho has been serving as director at the directorate-general for energy in the European Commission since April 2021. She oversees key areas including just transition, consumers, energy security, efficiency, and innovation. A lawyer by training, she applies her deep knowledge of EU energy policy and her leadership and negotiation skills to support Europe's clean and just energy transition. Prior to this, Paula was acting director for energy policy, managing international energy relations, financial instruments, and inter-institutional relations. She has represented the Commission in several legislative negotiations. From 2004 to 2015, she served as a member of the cabinet for several EU commissioners, including Günther Oettinger during his terms as commissioner for energy and digital economy. Paula was involved in the trilateral gas talks between the EU, Russia, and Ukraine.





## **AURELA SHTIZA**

### Director, Industrial Affairs and Raw Materials IMA - Industrial Minerals Association Europe

Aurela Shtiza is director of industrial affairs and raw materials at the Industrial Minerals Association Europe (IMA-Europe), advocating for raw materials policy, sustainability, and corporate governance since October 2017. She is also vice president of Processes4Planet, focusing on climate-neutral solutions and sustainable circular business models. Aurela serves as secretary general of ESMA and board member of A.SPIRE, and she has been a Sherpa for the European Innovation Partnership on Raw Materials since 2013. Her previous experience includes roles at Glencore as a product safety and corporate sustainability specialist, and at Arcadis/EURAS in environmental and health affairs.

Aurela earned her Ph.D. degree in environmental geology from KU Leuven in Belgium, with involvement in institutions such as the European Synchrotron Radiation Facility and the French Institute of Petroleum.

## LUIS ALBERTO TERCERO ESPINOZA

## Coordinator, Raw Materials Business Unit, Fraunhofer Institute for Systems and Innovation Research

Luis Tercero Espinoza is head of the raw materials business unit within the ompetence center for sustainability and infrastructure systems of the Fraunhofer Institute for Systems and Innovation Research ISI in Karlsruhe, Germany. He has been actively involved in the process of identifying critical raw materials for the EU since its beginnings in 2009. He is a member of the board of trustees of the ESM Foundation, dedicated to supporting research and development activities in the field of rare and critical elements. He received his formal training as a chemical engineer in Nicaragua, the US and Germany.



## **GABRIELLA TRANELL**

## Professor & SisAl Project Coordinator, Norwegian University of Science and Technology

Gabriella Tranell is a professor at the Norwegian University of Science and Technology (NTNU), having joined in 2009 after serving as senior scientist and research manager at the Norwegian Foundation for for Industrial and Technical Research (SINTEF). She studied geotechnology at Luleå University of Technology in Sweden and earned a Ph.D. degree in materials science and engineering from the University of New South Wales in Australia. Her research focuses on the production and refining of ferroalloys and silicon, aluminium refining, solar cell materials, environmental issues from metal production, and the recycling of metals and metallurgical sidestreams.



## SIGURGEIR TRYGGVASON

#### **Chief Executive Officer, Summa Asset Management**

Since 2013, Sigurgeir Tryggvason has been the chief executive officer of Summa Asset Management, an alternative investment fund manager focused on infrastructure and clean tech investments. He also serves as a director in several companies, including Silicor Materials Iceland, PCC BakkiSilicon, and Highland Materials, working on solar silicon projects in Iceland and the USA. Prior to leading Summa, he held senior positions in risk management, corporate finance, and project finance at Arion Bank, where he managed large-scale projects in the aluminum industry. He has also worked with the ABB Group on various heavy and power industry projects. He holds master's degrees in management from Thunderbird and in business administration from Arizona State University in the US, a master's degree in electrical power engineering from Karlsruhe Institute of Technology in Germany, and a master's degree in energy law from Reykjavík University in Iceland. He is also a certified securities broker.



## **ROSALINDE VAN DER VLIES**

#### Director, Clean Planet, DG Research and Innovation, European Commission

Rosalinde van der Vlies is the director for clean planet in the European Commission's directorate-general for research and innovation, and also serves as deputy mission manager of the climate-neutral and smart cities mission under Horizon Europe. Prior to her appointment as director, she was the head of the coordination & interinstitutional relations unit, and acting head of the communication & citizens unit. Previously, she held positions in DG Environment, DG Justice and Home Affairs, and in the private office of environment commissioner Janez Potočnik. Before joining the European Commission, she worked as a competition lawyer in an international law firm in Brussels and was a part-time teacher at the Catholic University of Brussels.

## NADIA VINCK

### Director, EHS, Energy and Climate, EuroAlliages - Association of Ferro-Alloy Producers

Nadia Vinck is director of EHS and energy & climate at EuroAlliages, where she has worked since 2006, overseeing chemical regulations, industrial emissions, and transport regulations. From 2012 to 2016, she chaired a CEN sub-group focused on greenhouse gas emissions in energy-intensive industries. Nadia has 17 years of experience in waste management, including roles at the European Commission and FOST Plus. She is a consultant for UNEP and a member of several official committees at the European Commission. She holds a degree in bio-engineering degree and a master's degree in biotechnology.

## MARIA WALLIN

### Project Manager, Norwegian University of Science and Technology

Maria Wallin is a chemical engineer with a Ph.D. degree in material science from Chalmers University of Technology in Sweden. She is currently working as a researcher at the Norwegian University of Science and Technology (NTNU), with focus areas in production, recycling and refining of metals from stable oxides. Previously, she has worked as product developer at Promimic and as a quality and management consultant at Knightec, before joining NTNU in 2017. She is the administrative coordinator of two EUfunded projects, SisAl Pilot and HAIMan. She is also active in several other EU projects including ReSiLex, Thermobat, SUNSON, APOLLO, HARARE and QUEEN.



## KAROLINA WAROWNY-DECOENE

### Sector Group Manager, European Chemical Industry Council

Karolina Warowny-Decoene is sector group manager at the European Chemical Industry Council (CEFIC), where she has been leading efforts since April 2022 to promote the interests of the European chemical industry. She manages initiatives for Catalysts Europe and Silicones Europe, focusing on safe catalyst usage and raising awareness of silicones. Prior to joining CEFIC, Karolina held managerial roles at PricewaterhouseCoopers Polska, specializing in the oil, gas, and chemicals sector. She holds a master of science degree in biotechnology and has a strong background in plant genetics and biochemistry.

## SIMON PICKARD

#### **Network Director, Science|Business**

Simon Pickard leads on network engagement and development for Science|Business in line with the company's growth strategy. He previously held directorial positions with The Academy of Business in Society (ABIS) network and IDAS Global, a technology solutions provider to the global cash industry. Within these roles, he designed and coordinated a wide range of international projects focused on sustainability-driven innovation, both in research and education. Simon holds master's degrees in modern languages from the University of Oxford and in business administration from HEC Paris School of Management.



- Cornelia Amihalachioae, Innovation Advisor and Programme Manager, EFFRA
- Efthymios Balomenos, Senior Consultant, METLEN Energy and Metals
- Antonio J. Baptista, Senior Researcher and Research Coordinator, Centre for Enterprise Systems Engineering, INESC TEC
- Ingeborg Frøysnes, Special Advisor, Artificial Intelligence, Innovation Norway
- Denis Gauvreau, Advisor, Quebec Innovation Council
- **Philippe Giaro**, Senior Research Officer, Georesources, Mineral Engineering and Extractive Metallurgy Group, University of Liège
- Mårten Görnerup, Technical Manager, SisAl Pilot & Researcher, Norwegian University of Science and Technology
- **Edit Herczog**, Chair, Administrative Board, European Union Agency for the Cooperation of Energy Regulators
- Lubor Kalafus, Manager, Circular Economy, European Steel Association
- **Henning Krassen**, Head of Department, Future of Work and Value Creation, Industry 4.0, German Federal Ministry of Education and Research
- Florian Loose, Research Scientist, German Federal Institute for Materials Research and Testing
- Elias Matinde, Executive Manager, Pyrometallurgy Department, Mintek South African Mineral Research Organisation
- **Francesco Matteucci**, Former EIC Programme Manager, Advanced Materials for Energy & Environmental Sustainability, European Commission
- **Robert Miehe**, Head, Sustainable Value Creation Systems Research Area, Fraunhofer Institute for Manufacturing Engineering and Automation
- Christophe Pinck, Chair, Hubs 4 Circularity & Advisor, Process4Planet Partnership & Eyde Cluster
- Paula Pinho, Director, Just Transition, Consumers, Energy Security, Efficiency, and Innovation, DG Energy, European Commission
- Aurela Shtiza, Director, Industrial Affairs and Raw Materials, Industrial Minerals Association Europe
- Luis Alberto Tercero Espinoza, Coordinator, Raw Materials Business Unit, Fraunhofer Institute for Systems and Innovation Research
- **Gabriella Tranell**, Professor & SisAl Project Coordinator, Norwegian University of Science and Technology
- Sigurgeir Tryggvason, Chief Executive Officer, Summa Asset Management
- Rosalinde van der Vlies, Director, Clean Planet, DG 'Research and Innovation, European Commission
- Nadia Vinck, Director, EHS, Energy and Climate, EuroAlliages Association of Ferro-Alloy Producers
- Maria Wallin, Project Manager, Norwegian University of Science and Technology
- Karolina Warowny-Decoene, Sector Group Manager, European Chemical Industry
  Council

- Thomas Bech Sørensen-Hylle, Rapporteur, Science|Business
- Johan Berg Pettersen, Associate Professor, Norwegian University of Science and Technology
- Massimo Busuoli, Director, Norwegian University of Science and Technology Brussels
  Office
- Krister Engvoll, Project Engineer, Elkem
- Dolores Gomez, Professor, University of Santiago de Compostela
- Thorsten Haarberg, Managing Director, BNW Energy
- Zulkifli Idris, Chemist, Norsk Hydro
- Thais Mothe-Diniz, Senior Research Advisor, Norwegian University of Science and Technology
- Eleonora Nadin, Communication and Project Manager, Science|Business
- Patrick Namy, Founder and CEO, SIMTEC
- **Sifiso Nation Sambo**, Engineer, Pyrometallurgy, Mintek- South African Mineral Research Organisation
- **Mukhethwa Netshia**, Metallurgical Engineer, Mintek- South African Mineral Research Organisation
- **Dimitrios, Panias**, Head of Department, Metallurgy and Materials Technology, National Technical University of Athens
- Elisa Pastor Valles, PhD Student, Norwegian University of Science and Technology
- Madalina Pop, Trainee, Science|Business
- Abdul Rahman Mallah, Researcher, Reykjavik University
- Pilar Salgado, Professor, University of Santiago de Compostela
- Sunniva Schevik, Trainee, NTNU Brussels Office
- Magnus Sievers, PhD Student and Project Engineer RWTH, Aachen University
- Halldór Guðfinnur Svavarsson, Professor, Reykjavik University
- Loriane Tachon Parisot, Director, Global Advanced Elastomers Product Development, Dow
- Michalis Vafeias, PhD Researcher, National Technical University of Athens
- Casper van der Eijk, Senior Research Scientist, SINTEF
- Susana Xara, Project Adviser, HaDEA, European Commission







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