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 Reducing environmental footprint, improving circularity in extractive and  
 processing value chains (IA)  
 Refractory Sorting Using Revolutionizing Classification Equipment  
 Grant Agreement No 101058310

**WP 9: “Technology utilisation and cross-project cooperation”**

D9.5 – Report on networking and joint activities (Final)

# ReSoURCE

**Project website and social media channels**

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## 1. Executive Summary

The work reported in this deliverable refers to ReSoURCE project ([Resource - Refractory Sorting Using Revolutionizing Classification Equipment](#)) in the framework of WP9 – Technology utilization and cross-project collaboration.

The aim of the document is to provide an overview of the activities implemented by 42<sup>nd</sup> month of the project and the general plan of the framework of joint cooperation for the coming years. The document covers further opportunities for clustering within the "Circular Industry Helix" on the Crowdhelix platform, its status by the end of the project, the ReSoURCE project's relevant insights and results along with other projects working on similar challenges, advanced materials and circular economy. The document equally shows a picture of the clustering activities which have been taking place throughout the project. An important part of the synergies within the project, realized in cooperation with the defined sister projects ""Hephaestus" (Grant Agreement No. 101058696), coordinated by Rina Consulting," and " ROTATE" (Grant Agreement No. 101058651), coordinated by ANEFA," both funded by HORIZON Europe Programme and part of the Horizon-CL4-2021-TWIN Transition Programme and their contribution are also described in the report. As the goal of these partnerships is to improve value chains' environmental impact and circularity alongside the sustainable cooperation to work on similar challenges, the report also highlights potential clustering prospects in the future.

## 2. Introduction

Clustering activities in European funded projects are instrumental in promoting collaboration, enhancing impact, aligning with policies, fostering innovation, and creating a supportive ecosystem for research and development initiatives. These activities contribute significantly to the success and effectiveness of large-scale, multi-stakeholder projects supported by European funding programs.

The ReSoURCE project has been funded under the Horizon-CL4-2021-TWIN Transition Programme "Reducing environmental footprint, improving circularity in extractive and processing value chains (IA)" and for the clustering activities focused on the related "sister projects" ROTATE and HEPHAESTUS with which a roadmap of activities has been started with the aim of paving a common way for mutual enhancement of the project results.

In the clustering activities, consortium member Crowdhelix, in addition to the preliminary programme outlined with the sister projects, included further networking opportunities to provide visibility and strengthen collaborative relationships between the ReSoURCE project and other projects implementing new innovative solutions and new technologies for the circular economy and in particular for scientific and innovation progress on advanced and low impact materials.

## 3. Objectives

As the ReSoURCE project draws to a close at Month 42, clustering activities continue to be a strategic pillar for enhancing the impact, relevance, and long-term sustainability of project outcomes. The project's last phase (2024–2025) has demonstrated that cooperation between the policy, scientific, and industrial groups is crucial to hastening the shift to circular and resource-efficient value chains. Therefore, the goals of networking and clustering activities during this final reporting period go beyond visibility and sharing to assist with the long-term adoption and utilization of the project's results.

In this regard, the following succinctly describes the goals of networking and clustering efforts for the duration of the project and beyond:

- Increasing Cooperation and Information Sharing

The project consortium focuses on organized cooperation between initiatives, organizations, and projects focused on circularity and raw materials. In addition to ensuring that the ReSoURCE outputs reach the audiences who can most benefit from them, the clustering activities conducted in 2025 are intended to enhance information exchange among industrial end-users, technology providers, research centers, and policy actors.

- Increasing the Visibility and Impact of ReSoURCE Outcomes

Clustering facilitates greater visibility and cross-sector recognition of ReSoURCE's scientific and technological accomplishments as the project moves into its final phase of distribution and commercialization. Accelerating the adoption of the project's lessons and placing its innovations within the European circular economy ecosystem have been made possible by joint participation in topic events, cross-project workshops, and cooperative communication initiatives.

- Encouraging Technology Transfer and Cross-Sectoral Uptake

The goal of the clustering initiatives implemented in 2024–2025 is to improve communication not only within the refractory sector but also between related industries where the project's results have significant potential for use. Clustering guarantees that collaboration and technology transfer paths are accessible for the adoption of the project's innovations by promoting contact between industrial representatives spanning raw materials, steel, cement, construction, and advanced materials.

- Compliance with Strategic Agendas and EU Policies

Additionally, the last clustering phase strengthens alignment with EU priorities, especially the Critical Raw Materials Act, the Green Deal, and the Circular Economy Action Plan. The incorporation of ReSoURCE insights into broader policy discussions, industry roadmaps, and standardization initiatives is facilitated by collaborative efforts with other Horizon Europe projects and industrial initiatives.

- Increasing Capacity and Growing the Network of Collaboration

Consolidating the network created by the Circular Industry Helix is an ongoing goal for 2025 and beyond. By giving project partners and outside stakeholders the chance to develop their capacity, clustering activities guarantee that the community will have access to the knowledge, resources, and best practices created during the project even after it is finished.

- Maintaining Innovation, Sustainability, and Exploitation After the Project

Ensuring continuity of influence is one of the project's main goals. Therefore, establishing the groundwork for further collaboration between industry players, research initiatives, and technology suppliers beyond ReSoURCE's lifecycle is another goal of clustering actions during 2025. Clustering facilitates the deployment and exploitation of project outputs, including the ongoing development of the Circular Industry Helix (<https://platform.crowdhelix.com/helixes/circular-industry>) as a long-term collaboration platform, through knowledge exchange, stakeholder involvement, and strategic networking.

## 4. The ReSoURCE project cluster

The ReSoURCE project's clustering ecosystem unites EU-funded projects aimed at circular industrial transformation, waste valorization, sustainability, and resource efficiency. Projects directly related to ReSoURCE are included in the cluster, along with other initiatives linked by the Crowdhelix platform and other networking activities arising from adjacent Helixes that cross with the Circular Industry Helix.

As mentioned in the previous report as well, the three projects, HEPHAESTUS, ReSoURCE, and ROTATE, are all focused on **sustainability and efficiency in resource extraction and processing**, with an emphasis on recycling and minimizing environmental impact. They are funded by the European Union in the call HORIZON-CL4-2021-TWIN-TRANSITION-01-20 and aim to provide solutions that can be implemented across various sectors related to mining, quarrying, and metallurgy. These projects were defined as sister projects within the initiation of the ReSoURCE project and the consortium since then kept them in priority in collaboration through common activities.

**HEPHAESTUS** aims to develop a set of scalable and tunable unit operations for treating multiple process wastes from primary mineral and metallurgical streams. The project focuses on **transforming waste into usable materials**, such as transforming dust into metal alloy or into mineral wool, extracting zinc from dust, and converting CO<sub>2</sub> gas into methanol or formic acid. It also includes hydrometallurgical processes to produce recyclable Fe-rich residues and recover metals from electric arc furnace (EAF) dust.

**ReSoURCE**, on the other hand, is centered on refractory recycling. Its main goal is the **green and digital transformation of refractory recycling**, using AI-supported multi-sensor sorting equipment as its core technology. This project is expected to lead to significant reductions in CO<sub>2</sub> emissions, energy consumption, and landfill capacity, as well as contribute to the digital transformation of manual processes and upskilling of the workforce.

The **ROTATE** project is focused on providing environmental solutions to facilitate synergies between diverse industrial sectors related to mining and quarrying. Its main goals include boosting efficiency at extractive sites, enhancing circularity and waste valorization, developing sustainable processes along the mining and quarrying productive chain, and improving social awareness about the strategic importance of these sectors. The project aims to provide **profitable and replicable solutions for the mining and quarrying market** regarding cut-off grade decrease, eco-friendly extraction & processing, circularity, and social acceptance. The project also focuses on increasing efficiency and recovery rate of critical raw materials, reducing emissions, valorizing waste, and fostering site rehabilitation and biodiversity management. In addition to the sister projects funded under the same call, the two projects “BioICEP” and “Thermodust” equally considered as a part of the ReSoURCE Project Cluster:

**BioICEP:** Through creative waste plastic biotransformation, this project aims to advance a circular economy model for plastics. In order to meet the huge demand for these sustainable materials, BioICEP is working to develop a triple-action depolymerization system that will turn waste plastics into useful bioproducts and bioplastics.

**Thermodust:** By developing a unique material with improved transfer performance, ThermoDust aims to transform thermal management in new materials. This initiative, which is intended for Additive Manufacturing, is a noteworthy development in material science with potential uses in several industries that demand effective thermal control. All together, these initiatives foster the cluster's emphasis on innovation and sustainability by utilizing state-of-the-art research and development to address urgent environmental issues in several industries.

The sister projects and the other projects involved as a part of the ReSoURCE cluster are given in the table below:

<b>Sister projects</b>		
<b>Name</b>	<b>Description</b>	<b>Sector</b>
<b>Hephaestus</b>	The HEPHAESTUS project explores the innovative use of robots and autonomous systems in construction, a field where the incidence of such technologies is minor to non-existent. The project aims to increase market readiness and acceptance of key developments in cable robots and curtain walls.	<b>Robotics and autonomous systems use in the construction sector</b>
<b>ROTATE</b>	ROTATE aims to provide environmental solutions that will contribute to facilitate the generation of synergies between diverse industrial sectors related to mining and quarrying.	<b>Mining and quarrying</b>
<b>Convert2Green</b>	Convert2Green will establish an Open Innovation Test Bed (OITB) to complement the European Open Innovation Ecosystem. It will complete eco-impact analysis from raw material to product-as-a-service. The project will be the first OITB that establishes the procedures and contract models for licensing of joint ownership of intellectual property rights. The project will integrate its services with the whole European innovation ecosystem.	<b>Open Innovation Test Bed (OITB) for raw materials</b>
<b>BiolCEP</b>	The project aims to demonstrate a seamless sustainable pathway to a circular economy for plastics by developing an advanced energy, carbon and cost efficient biotransformation of waste plastics through a triple action depolymerisation system to meet the high market demand for bioproducts and bioplastics.	<b>Mixed plastics degradation</b>
<b>Thermodust</b>	ThermoDust aims to achieve a real breakthrough in investigating new flexible materials, for engineering a radically new material (ThermoDust) with outstanding transfer performance and suitable for Additive Manufacturing.	<b>Thermal management for new materials</b>

Figure 1 – ReSoURCE Project’s Sister Projects

In addition to the ReSoURCE’s defined sister projects and related other clustering projects, a stakeholder mapping were put in practice in order to find out and analyse possible collaboration opportunities throughtout and after the project. Within the stakeholder mapping, a wide variety of possible collaborators were defined.

Projects like DOT, Plastfri, and REVaMP focus on environmentally friendly production methods and technology retrofits. SWIRup is an image sensor project funded by the European Commission that could help the commercial and earth observation sectors with its hyperspectral imaging applications. NanoQi is concerned with the characterization of nanomaterials for advanced manufacturing, which is pertinent to industries such as coatings and solar cells. The goal of illuMINEation is to digitize mining operations in order to improve environmental performance, efficiency, and safety. Also, companies which promote production technology in the European manufacturing sector, such as EFFRA has been listed among possible collaboration opportunities. The other initiatives, Clean Steel Partnership and the Processes4Planet Co-programmed Partnership are to revolutionize the European steel sector and attain climate neutrality and circularity by 2050. Through training, research, and teaching programs, Cerame-Unie and ECREF represent and assist the ceramic and refractory sectors, respectively. Vesuvius, Imerys, and Sidenor are examples of Early Adopters and End Users who are well-positioned to adopt and profit from cutting-edge technology in industries including high-temperature processes, steel production, and refractory materials. Suppliers and research facilities that specialize in material sciences, especially refractory solutions and laser processing, include Refratechnik and the University of Malaga UMA Laser Lab are also considered as possible collaborators for joint activities or initiatives who could either become direct beneficiaries of the ReSoURCE project results or support initiatives to foster the dissemination and exploitation.

The main goal of fostering clustering activities was to increase the body of knowledge already available on refractory recycling while also encouraging the sharing of concepts, techniques, and R&D advancements that can facilitate the use, duplication, and scaling of technologies created by the participating projects. The cluster helps accelerate the adoption of new technical solutions and circular practices throughout Europe by fostering a collaborative environment.

The cluster has developed further over the project's last phase, growing to incorporate new partnerships and cooperative initiatives that support the ReSoURCE ecosystem's technological and commercial significance.

Beginning with a joint contribution to the workshop "Unlocking New Opportunities with Recycled Refractory Materials," which successfully brought together academic and industrial stakeholders to investigate synergies between multi-sensor sorting, material recycling, and sustainable industrial processes, a new clustering collaboration with the IS2H4C project has been established. This partnership represents a significant expansion of the cluster into new theme domains related to the sustainable process and high-performance materials

Additionally, the consortium organized and two webinars focused on innovation and circularity alongside ReSoURCE Project’s outputs, which provided a platform for knowledge sharing, interaction with relevant stakeholders, and enhanced visibility for the projects involved.

**4.1. The Circular Industry Helix**

For information sharing, open innovation, and cross-sector cooperation pertinent to the ReSoURCE project, the Circular Industry Helix remains a key virtual center. With a common goal of promoting circularity throughout industrial value chains, the Helix, which is hosted on the Crowdhelix Open Innovation Platform, unites research organizations, academic institutions, SMEs, big businesses, investors, and end users. The Circular Industry Helix maintains close relationships with other Helix communities, such as Climate, Digital, Manufacturing, Materials, and Raw Minerals, in addition to its thematic significance to refractory recycling. This ensures multidisciplinary involvement and broadened innovation pathways.

The Circular Industry Helix has been growing and operating actively during the last reporting period, which reflects a consistent rising trend in stakeholder engagement.

	Month 30	Month 42
Total Organizations	169	298
Total Users	345	829
Countries Represented	45	47

*Table 1 – Crowdhelix – Circular Industry Helix M30-42 Comparison*

This expansion shows the community's growing significance and the success of the engagement efforts made during the project's last stage. Notably, the Helix's capacity to draw businesses directly involved in industrial innovation and raw materials research is demonstrated by the ongoing influx of SMEs and RTOs. The Helix has continued to be quite active during the reporting period, assisting the ReSoURCE project by:

- Key Exploitable Results (KERs) are continuously promoted, allowing for visibility and matching with pertinent industry and research parties.
- Members continue to communicate and work together in a dynamic manner, exchanging private messages, finding partners, and coordinating possible funding offers.

- Support for collaborative events and clustering initiatives, such as the two webinars conducted by ReSoURCE and the workshop co-organized with the relevant projects such as IS2H4C project.

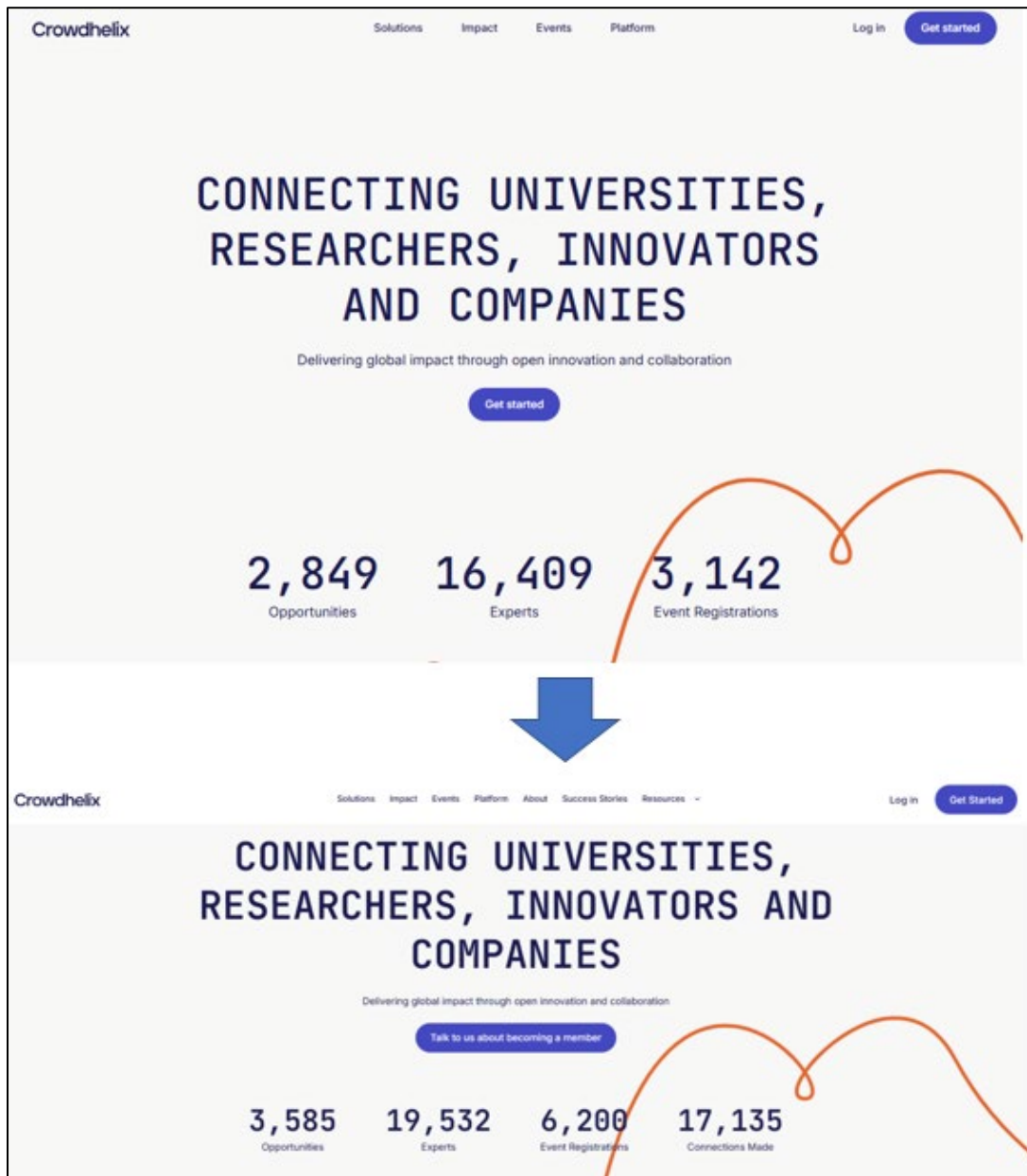


Figure 2 – CrowdHelix Platform – Overall M30-M42 Comparison

The platform is supported by a tailored technology platform, AI, and machine learning tools and the network encompasses over 45 virtual thematic areas or clusters, known as "Helixes," covering diverse research and innovation fields. The Circular Industry Helix is the place where sister projects and other clustering projects can come together, not only to create new interactions and knowledge sharing, but also to showcase the Key Exploitable Results (KERs) that can be collected in the 'Results' feature of the Helix.

In addition, networking on the platform will be complemented by a series of events, webinars and roundtables (virtual and face-to-face), which will strengthen relationships with other stakeholders and projects, bringing further opportunities for growth in terms of R&D, impact acceleration and commercialisation.

**Circular Industry**  
Circularity in heavy industry, foundries, works: analysing, processing and re-valourising refractory and specialist materials

**Background**  
A key priority area for the European area is to increase security and sustainability in the access and use of primary and secondary raw materials, with a focus on those Critical Raw Materials which have been defined as vital for EU industrial value chains and strategic sectors.

Applying technological solutions to transform industrial waste management processes in extractive and energy-intensive industries has the potential to yield rapid and significant results. The potential for impact is clear: extractive industries alone are responsible for 50% of the world's carbon emissions and more than 80% of biodiversity loss. For energy intensive industries, in most cases the primary raw material production has the highest impact on a product's carbon footprint. Safe and efficient circular process strategies are needed.

Open data and modelling, standardisation, demonstration, industrial symbiosis and cross-sectoral cooperation are required to de-risk and spread the benefits of research and innovation advances.

**Key Project: ReSoURCE**  
Refractory products are indispensable for all high-temperature processes above 1200°C, such as steel, cement, glass, and nonferrous metal production. Since the refractory lining of a furnace or vessel is designed for a specific material and application, multiple refractory product types, with different chemistries, are combined to achieve the required performance. This poses major challenges for reuse, as the chemical composition of the recycled material is critical if it is to be used again in a refractory.

The ReSoURCE project goal is a comprehensive, advanced sensor-based system for refractory waste sorting and powder handling. Key technologies include LIBS and hyperspectral imaging. If the project is successful, it will enable the robust engineering of an automated sorting equipment that will increase the recycling of refractory breakout material from the current estimate of 7-30% (plus 10% of downcycling) to up to 90%. With approximately 28 million tons of used refractory bricks generated annually, the ecological and societal benefits will be considerable.

**Circular Industry Helix**  
The Circular Industry Helix is an international Open Innovation community of specialists and stakeholders, including those from the domains of materials science, process engineering, mineral waste recycling and industrial innovation, as well as relevant policy makers, standardisation agents and citizen interest groups. The Helix was initiated to support in validation and steering of the ReSoURCE project, and to accelerate translation of the ReSoURCE project results into cross-sectoral impact for the European economy and its citizens.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the granting authority. Neither the European Union nor the granting authority can be held responsible for them. This project has received funding from the European Union's Horizon 2020 or Horizon Europe research and innovation programme under grant agreement No 101058310.

**Seeking collaborators for Circular Industry projects?**  
Post a new Opportunity in this Helix

**345 Experts**  
**169 Organisations**  
**45 Countries**

**Dr. Valeria Pulieri**  
Helix Manager

**Alexander Leitner**  
Helix Leader

**Organisations**  
RHI Magnesita  
Leading Organisation

**Projects**  
ReSoURCE  
Key Project

**Resources**

Figure 3a – Circular Industry Helix by M18 of the Project

The Helix community has been promoted throughout the research and innovation ecosystems since its launch on March 2023. By project month 18, 9 months after its launch, it has reached 345 experts and 169 organizations from 45 countries. By month 42 of the ReSoURCE project, the platform hosts 829 experts and 298 organizations from 47 countries.

A constant stakeholder profile within the Circular Industry Helix is demonstrated by the fact that, despite an increase in the number of registered users on the platform during the previous reporting period, the distribution of participants across organization types has remained essentially unchanged. Most users are still Small and Medium-sized Enterprises (SMEs), which is indicative of their keen interest in and active involvement in circular sector innovation.

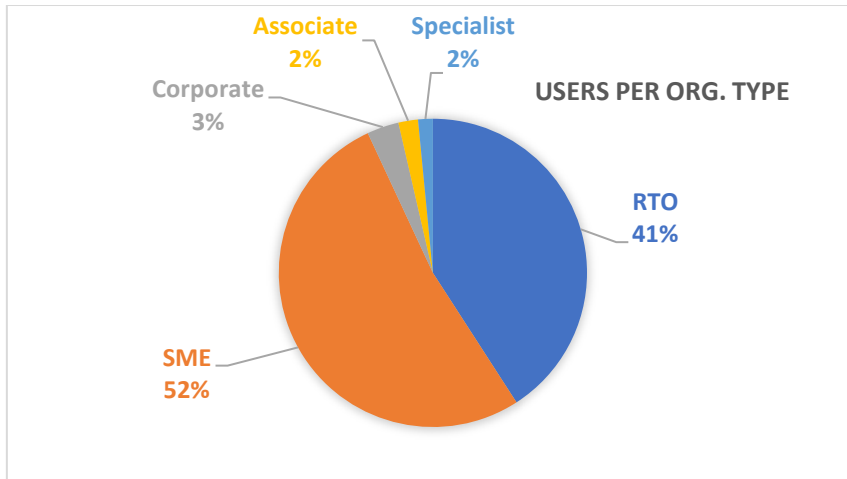



Figure 3b – Users on the Circular Industry Helix Status per Organization Type

As the second-largest category, Research and Technology Organizations (RTOs) continue to play a crucial role in advancing science and technology in the community. Additionally, corporate entities, associates, and specialists maintain their respective representations.



**Circular Industry**  
Circularity in heavy industry, foundries, works: analysing, processing and re-valourising refractory and specialist materials

Join

[View Opportunities](#)

**Background**

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 **829 Experts**

 **298 Organisations**

 **47 Countries**

 **Marco Lopes**  
Helix Manager

"RHI Magnesita are proud to lead this community on circularity in energy-intensive industries including refractories. Industrial-scale waste streams represent significant opportunity to recover value by application of novel technologies and processes."

 **Alexander Leitner**  
Helix Leader

**Organisations**


 **RHI Magnesita**  
Leading Organisation

Figure 4 – Circular Industry Helix Status by M42 of the Project

User activity on the platform has dramatically grown in comparison to the prior reporting period, indicating a considerable strengthening of collaboration within the Circular Industry Helix community. From 912 messages on Month 30 to 2,175 messages at Month 42, the quantity of private communications sent between subscribed members has more than doubled. This significant increase shows a deeper level of interaction among members who are actively reaching out to one another to investigate synergies, build consortia, and co-design innovative prospects rather than just higher platform traffic.

The increase in message exchanges demonstrates how the Helix has changed from being mainly a place for networking and information exchange to a collaborative setting where actual cooperation is occurring. Opportunities pertaining to research funding, industrial demonstration efforts, technology scaling, and the exploitation of Key Exploitable Results (KERs) have all sparked many of these connections. Additionally, the trend shows that SMEs and industrial customers are becoming more interested in interacting with research and technology organizations, which is a step in the right direction toward closing the innovation-market gap.

The Circular Industry Helix is becoming an active catalyst for strategic partnerships, cross-project clustering, and forward-thinking industrial innovation initiatives within the ReSoURCE ecosystem and beyond, as evidenced by the overall increase in communication volume.

The Circular Industry Helix Community has been providing a vibrant platform to share and support the exploitation of the project results. In that sense, in the previous reporting period, two key exploitable results (KERs) of the project has been published on the helix. Both results aimed to reduce carbon emissions and improve material sustainability. The goal of CPI, a ReSoURCE project partner, has been to find creative, non-refractory uses for leftover refractory materials produced during refractory lining removal. The materials that are manufactured have significant value-added applications in numerous sectors. Spent refractory linings from the steel and cement industries were milled to create the two primary components. CPI has created economical techniques to mill the materials to an appropriate size for integration into polymer systems, with an emphasis on utilizing the leftover material as additives in polymer composite systems. "mRefCem and mRefFerro" materials offer the possibility of increased sustainability. Both materials' "Technical Data Sheets" are available in the Knowledge Vault area of the project website as well: <https://www.project-resource.eu/knowledgevault/>.

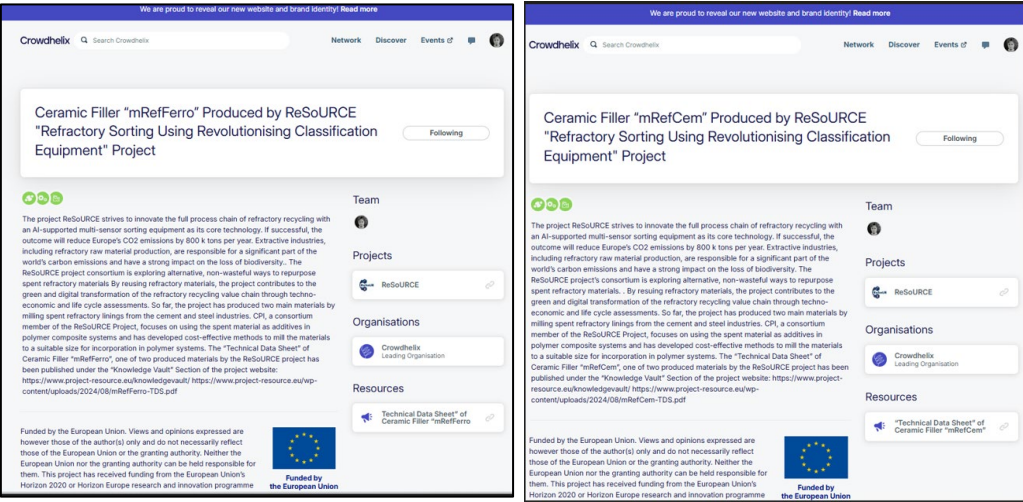


Figure 5 – Circular Industry Helix Posts on KERs: mRefFerro and mRefCem

All of the ReSoURCE project's Key Exploitable Results (KERs) have been posted to the Circular Industry Helix by Month 42, guaranteeing widespread visibility and facilitating focused interaction with pertinent industry and research parties. The remaining KERs have now been published on the platform, completing the portfolio of project outcomes accessible to the general public, even though KER4- Materials Passport (RefCem and RefFerro) had previously been distributed in the form of two distinct articles.

<b>ID</b>	<b>Title/Name of KER</b>	<b>Owner(s)</b>
KER 1	RAPTOR	RHIM
KER 2	PHOENICS	RHIM, LSA, SINTEF
KER 3	Boosting Recycling Rates in Low-Carbon Refractory Products	RHIM, SINTEF
KER 4	Materials Passport (RefCem and RefFerro)	CPI, RHIM
KER 5	Dual Integrated LIBS Systems for Real-Time, High-Precision Material Classification	LSA, Fraunhofer ILT, INN
KER 6	AI-based Multi Sensor System	Fraunhofer ILT, LSA, NEO
KER 7	Multi Chamber Fluidized-bed Particle Separator	SINTEF
KER 8	Real-Time Hyperspectral Material Classification Platform for Industrial Sorting	NEO/ Fraunhofer ILT/RHIM
KER 9	LCA and TEA study	CPI

*Table 2 – List of KERs by M42*

The most recent Key Exploitable Results (KERs) of the project will also be promoted on LinkedIn in conjunction with future Helix-related posts, in keeping with increasing exposure and engagement. The project intends to maximize outreach, guarantee that innovations reach pertinent industrial and research communities, and encourage more partnerships both within and outside the Helix network by strategically connecting KER communication with Helix activity updates.

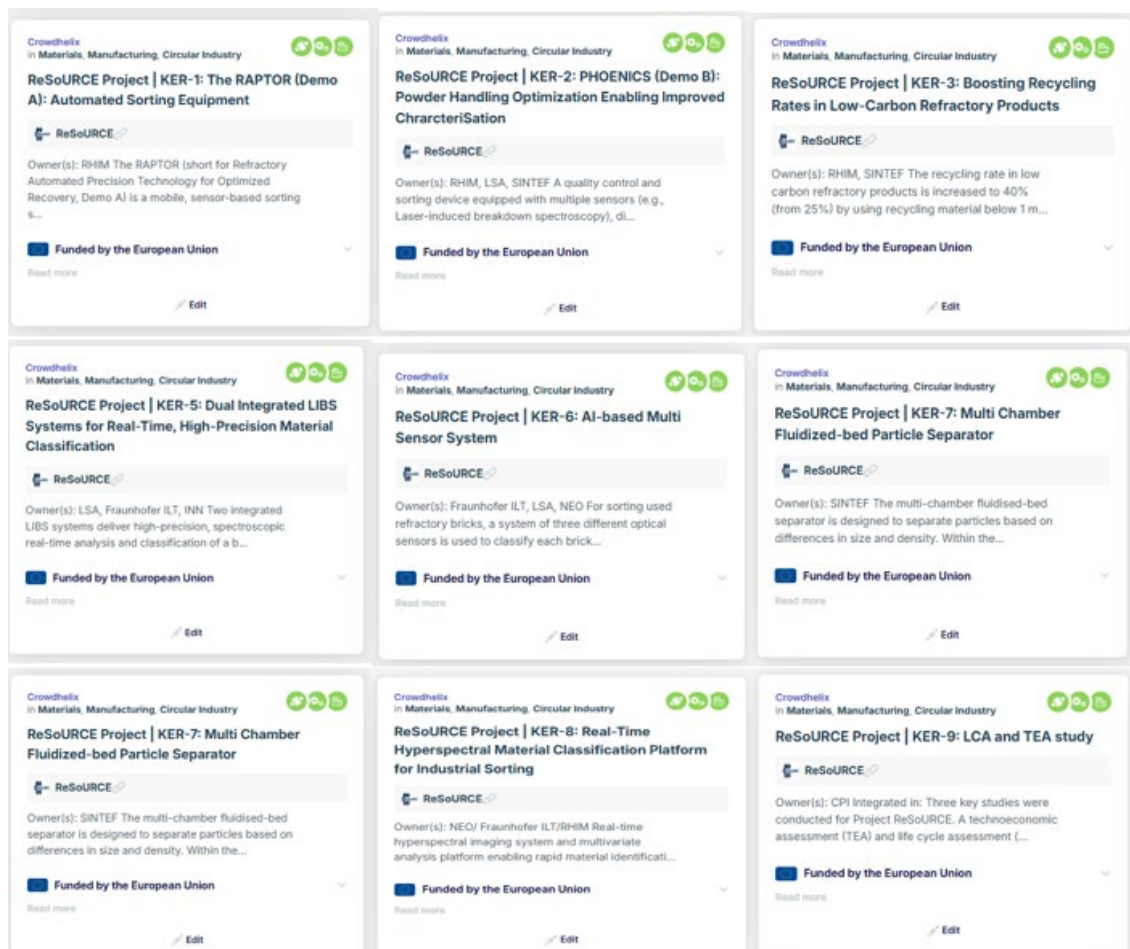


Figure 6 – Circular Industry Helix Posts – KERs 1-9

## 4.2. The events and other activities

By M42, the ReSoURCE project's strategy to promote cooperation, information sharing, and synergy amongst linked efforts and stakeholders still heavily relies on planning and taking part in clustering activity events. Building a strong and interconnected cluster, facilitating the exchange of knowledge between specialists, researchers, and business-focused actors, and enhancing their comprehension and proficiency in the domains of circularity and industrial sustainability are all made possible by networking events with projects operating in the same thematic area.

In this regard, Crowdhelix has been essential in helping ReSoURCE with its clustering initiatives, guaranteeing robust participation throughout the innovation ecosystem. By 2025, the Crowdhelix network will be hosting over 50 events yearly, producing about 6,200 event registrations, and actively engaging the 700+ members of the platform's stakeholder community. These gatherings offer priceless chances to highlight the innovations created inside ReSoURCE, further the common goals of the clustered projects, and greatly expand exposure, outreach, and recognition at the European level. The impact and sustainability of the clustering activities carried out by ReSoURCE up to M42 are strengthened by Crowdhelix's strategic approach, which stimulates new collaborations across related but varied sectors. The Helix events, which combine networking, matchmaking, and co-creation formats to promote cross-sectoral interaction and the formation of long-lasting partnerships across academia, industry, and innovation ecosystems, stand out among these activities as flagship events.

### **1<sup>st</sup> Helix Event: Materials Helix Event (Dublin, November 22–23, 2023)**

The inaugural Helix event was the Materials Helix Event, which was organized by Crowdhelix in association with the AMBER Centre (Advanced Materials and Bioengineering Research Centre) and took place at Trinity College Dublin (Paccar Studios, Naughton Institute) on November 22–23, 2023.

With an emphasis on matching with upcoming Horizon Europe calls (e.g., in Cluster 4 and Cluster 6), this event brought together coordinators, partners, researchers, and industry actors working on advanced materials, biomanufacturing, and circular economy topics. One of the main features was a panel discussion with a clustering focus called "Materials Innovation for Circular Economy," which was led by Dr. Vincent Jamier (Leitat Technological Center). ReSoURCE used this occasion as a strategic platform to:

- Establish connections with relevant Horizon-Europe initiatives and circular materials stakeholders.
- Raise awareness of the initiative in a community that is very interested in circularity and refractory materials.

### **2<sup>nd</sup> Helix Event: Circular Economy & Materials Matchmaking (Barcelona, 29–30 April 2025)**

The Circular Economy and Materials Brokerage & Matchmaking Event was the second and most recent Helix event. It was hosted by Crowdhelix in collaboration with the Leitat Technological Center and took place at DFactory Barcelona on April 29–30, 2025.

Leading researchers, cutting-edge businesses, SMEs, and public institutions were among the attendees, all of whom were committed to promoting sustainable materials and circular economy solutions. This was specifically created as a matchmaking forum.

Under the same theme of circular materials, it promoted multi-actor collaboration by uniting academics, industry, and innovation centers. It served as a project pipeline generator, assisting in the identification and engagement of possible collaborators for upcoming joint proposals. By focusing on certain Horizon Europe calls, it improved the ReSoURCE project's relevance and integration within the clustering ecosystem by bringing it closer to the larger European research and innovation agenda. Additionally, the helix events helped the clustering activities within the project in following aspects:

- Shared theme alignment: Since advanced materials and the circular economy are the main topics of both events, ReSoURCE can interact with other projects tackling related issues.
- Brokerage + matching: The matchmaking format speeds up the creation of consortia for upcoming project proposals, which is a crucial component of clustering, especially in the Barcelona event.
- Cross-sector engagement: These events foster the kind of cross-helix collaboration (academic + business + innovation) that propels industrial uptake by including both industry (businesses, SMEs) and research actors (universities, research centers).
- Strategic positioning in Horizon Europe: ReSoURCE can increase its sustainability and effect by influencing and participating in future project consortia by aligning with specific Horizon Europe calls.

The clustering activities in parallel to the helix events which were carried out up to M30, as detailed in the previous deliverable, is given in the next section. By highlighting new engagements, increased participation, and the improved impact of ReSoURCE's strategy to promote synergies and cooperation across the circular economy and materials sectors, this report builds on that foundation by highlighting the additional clustering and networking initiatives carried out between M18 and M42.

## 5. The clustering activities implemented by M42

Building on the fundamental data provided in Deliverable D9.3—First Report on Networking and Joint Activities, submitted in November 2023—this section offers a thorough summary of the networking and joint activities conducted by the ReSoURCE project up to M42. It discusses the project's clustering strategy's continuity, growth, and consolidation, paying special attention to initiatives, events, and cooperative actions carried out between M18 and M42.

The initiatives outlined here demonstrate ReSoURCE's ongoing dedication to promoting cross-sectoral synergies, improving information sharing, and bolstering collaboration among stakeholders from academia, business, SMEs, and innovation centers. They emphasize how taking part in project-led workshops, matchmaking sessions, and targeted networking events has allowed the project to:

- Encourage collaborations with other EU-funded projects and comparable Horizon Europe programs.
- Increase awareness of and impact from ReSoURCE's circularity and industrial sustainability research outputs and breakthroughs.
- Promote co-creation and teamwork in the circular economy and materials industries.
- Project goals should be in line with more general European research interests, especially in Horizon Europe Cluster 4 and other clusters.

This section highlights the project's continuous efforts to fortify the European innovation ecosystem and guarantee the sustainability of its clustering activities by showcasing the most pertinent events and initiatives. It also serves as a link to the in-depth explanations of particular events, like the Helix gatherings, that demonstrate these efforts in action.

### 5.1. EIT Raw Materials – Raw Materials Summit 2024

As mentioned in the previous reporting, one of the key events attended by the ReSoURCE consortium was the “EIT Raw Materials – Raw Materials Summit 2024”. The event took place from May 14th to 16th 2024, marking an excellent opportunity for the ReSoURCE project team to connect with key industry participants, decision-makers, and researchers, emphasizing sustainable sourcing, circular economies, and material advances. Especially, the exchange with many of the attending start-ups led to valuable new contacts, which are essential for promoting and driving innovation. These new collaborations and investigated joint potentials for developing material recovery and recycling technologies, are crucial to the project's long-term goals.

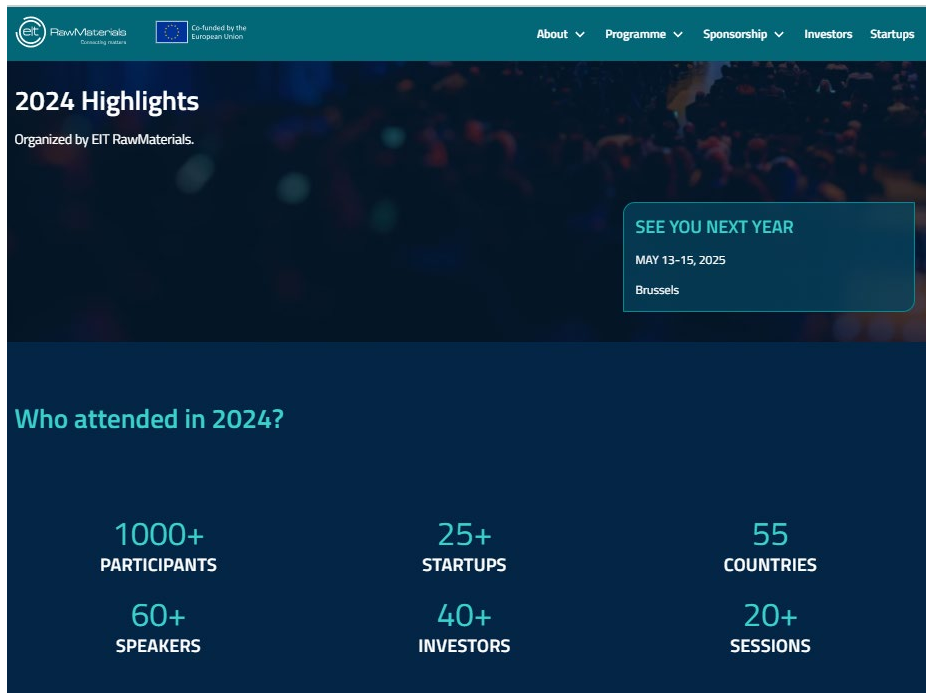


Figure 7 – EIT Raw Materials Summit Stats

To increase the project’s visibility, ReSoURCE representatives also participated in a dedicated workshop along with three other Horizon Europe-funded projects: ROTATE, Hephaestus, and RawMina (Leaflet in Annex). The workshop, titled “Accelerating the Adoption of Circular Strategies in the Raw Materials and Steel Industries” focused on groundbreaking technologies that are driving circular strategies in the raw materials, refractories and steel industries. Project advisor Susana Xarà introduced the topic with an interview addressing the need for improvements in the extractive, refractories and steel industries. This was followed by presentations from project representatives, who shared their innovative solutions with the diverse audience, including international industry professionals, research center and university representatives. A key highlight of the workshop was the roundtable discussion, where ReSoURCE led a session regarding industrial synergies having, e.g., engaging discussions with stakeholders from the construction industry and PhD students. These conversations highlighted the potential for collaboration between refractory and construction industry, with PhD students contributing fresh perspectives and innovative ideas. The fully booked room and active participation from the audience underscored the strong interest and the significance of advancing innovation in these fields.



*Figure 8 – EIT Raw Materials Summit – Workshop: Accelerating the Adoption of Circular Strategies in the Raw Materials and Steel Industries*

The revolutionary potential of breakthrough technologies in the raw materials and steel industries was highlighted at the workshop "Accelerating the Adoption of Circular Strategies in the Raw Materials and Steel Industries,". Susana Xarà (HaDEA) conducted the three engaging sessions, which started with a summary of EU-funded projects Hephaestus, ROTATE, and ReSoURCE, highlighting their state-of-the-art technology. Experts from all four participating projects, including Marco Lopes (RAWMINA), Simone Neuhold (ReSoURCE), and others, participated in a roundtable discussion after Dr. Valeria Pulieri (Crowdhelix) presented techniques for engaging stakeholders in circularity and industry transformation. Circular strategies, Industry 5.0 and industrial transformation, and industrial synergies were among the main issues covered. There were lively debates about how steel, refractory, and construction industries should work together. The importance of the Raw Minerals Helix and Circular Industry Helix communities as forums for promoting cooperation and furthering sustainability objectives was emphasized by these sessions. A wide range of participants, including researchers, policymakers, and representatives of civil society, contributed to the presentations and interactive discussions, highlighting the workshop's significance as a turning point for fostering innovation and stakeholder collaboration across value chains.



*Figure 9 – EIT Raw Materials Summit – ReSoURCE Participation*

In order to reach a larger professional audience, the workshop was disseminated through different channels such as LinkedIn. By drawing interest from stakeholders in a variety of industries and encouraging online interaction around the innovations and circular methods addressed, this digital outreach increased the event's prominence.

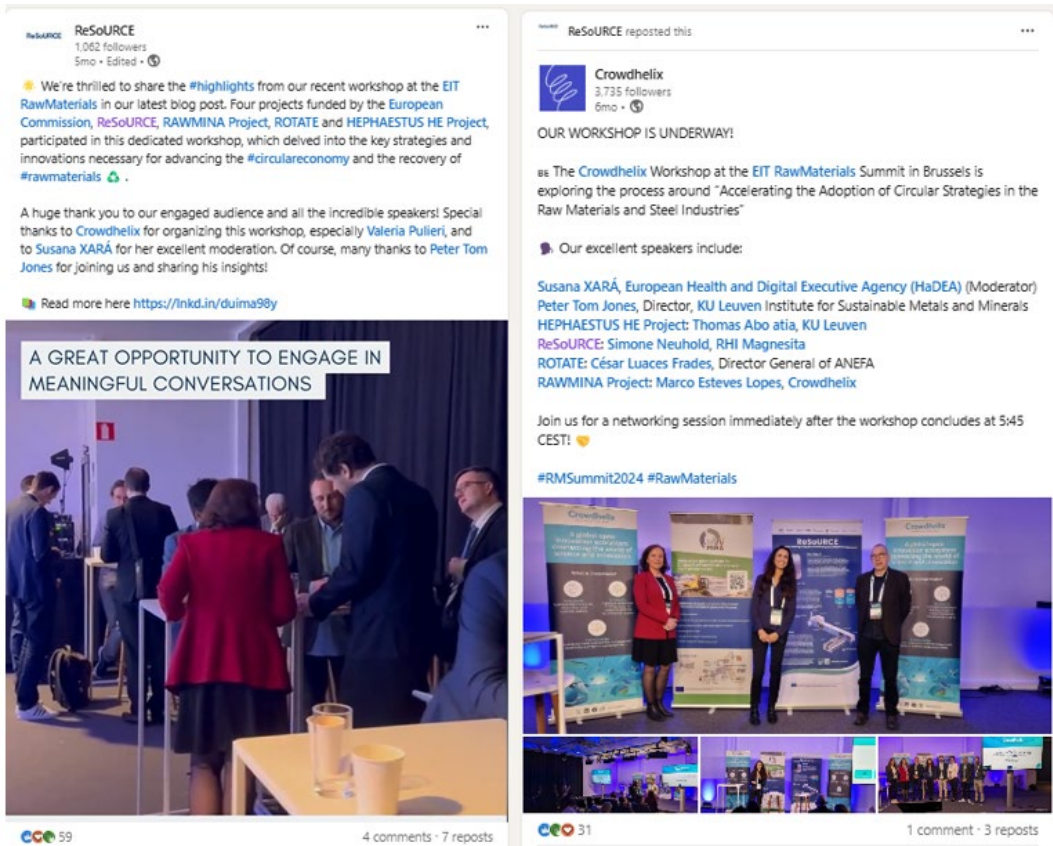


Figure 10 – EIT Raw Materials Summit – Visibility Posts

The ReSoURCE project was a prominent participant of the EIT Raw Materials Summit 2024 alongside ROTATE, Hephaestus, and RAWMINA projects. The discussion centered on developing synergies in the steel and raw materials industries, industry change, and circular strategies. The event's specifics and results were also posted on the ReSoURCE project website, which increased its exposure to a wider audience and strengthened the project's contribution to the advancement of sustainability and innovation in the sector (<https://www.project-resource.eu/news/resource-attends-eit-raw-materials-summit-2024/>) The workshop concluded with an interactive roundtable session on “How to engage stakeholders in circular strategies and industry transformation,” which began with a presentation of the digital communities around circular industry and raw materials from the open innovation platform CrowdHelix. The session featured three engaging discussions that provided takeaways at the societal, environmental, and innovation levels, aiming to engage the audience and create new connections for the future exploitation of the projects’ outcomes. The following topics were discussed:

- Circular strategies
- Industrial transformation towards Industry 5.0
- Industrial synergies



Figure 11 – EIT Raw Materials Summit – Project Dissemination Materials

In 2024, in addition to the EIT Raw Materials Summit, three more major conferences/events were attended. The summary of the events (Provided in detail within the previous deliverable – D9.4) are given as follows.

## 5.2. North East Automotive Expo 2024

The event was attended by researchers Claire Defty and Ananda Roy on behalf of the ReSoURCE Project on 26<sup>th</sup> September 2024. It was an expo for growing networking and clustering initiatives in the automotive industry.

The Expo, which was organized by the North East Automotive Alliance, brought together top manufacturers, suppliers, innovators, and stakeholders to talk about sustainability, developments, and problems facing the automotive sector. Claire and Ananda had insightful conversations on sustainable practices and the circular economy, which complemented the project's goals of encouraging creativity and resource efficiency.

As a part of the networking and clustering activities, ReSoURCE representatives established contacts with 17 businesses at the NEAA Expo 2024. The list of the established contacts are as follows:

	<b>Company</b>	<b>Contact</b>	<b>Position</b>	<b>Email</b>	<b>Website</b>
1	Isoclad	Rob Palmer	MD	<a href="mailto:robert.palmer@isoclad.co.uk">robert.palmer@isoclad.co.uk</a>	<a href="https://www.isoclad.co.uk/">https://www.isoclad.co.uk/</a>
2	Forteq	Steve Roberts	Business Development Manager	<a href="mailto:steve.roberts@forteq-group.com">steve.roberts@forteq-group.com</a>	<a href="http://www.forteq-group.com">www.forteq-group.com</a>
3	ACCEDO GROUP Ltd	Ben Richardson	Director	<a href="mailto:ben.richardson@accedogroup.co.uk">ben.richardson@accedogroup.co.uk</a>	<a href="http://www.accedogroup.co.uk">www.accedogroup.co.uk</a>
4		Carl Lamb		<a href="mailto:carl.lamb@accedogroup.co.uk">carl.lamb@accedogroup.co.uk</a>	
5	NEFAB	Phil Bell	Business Development Manager	<a href="mailto:phil.bell@nefab.com">phil.bell@nefab.com</a>	<a href="http://www.nefab.co.uk">www.nefab.co.uk</a>
6	Avon Group	Paul Radford	Business Development Manager	<a href="mailto:pradford@tsa-ltd.co.uk">pradford@tsa-ltd.co.uk</a>	<a href="http://www.avon-group.co.uk">www.avon-group.co.uk</a>
7		David Smith	Sales Manager	<a href="mailto:david@gbbelting.co.uk">david@gbbelting.co.uk</a>	<a href="http://gbbelting.co.uk">gbbelting.co.uk</a>
8		Jeremy Byrne	Managing Director	<a href="mailto:jeremy@gbbelting.co.uk">jeremy@gbbelting.co.uk</a>	<a href="http://gbbelting.co.uk">gbbelting.co.uk</a>
9	GV Engineering Ltd	Paul Brown	Sales representative	<a href="mailto:sales@gvengineering.co.uk">sales@gvengineering.co.uk</a>	<a href="http://www.gvengineering.co.uk">www.gvengineering.co.uk</a>
10	RTC	Simon Cave	Business Support Specialist	<a href="mailto:simon.cave@rtcnorth.co.uk">simon.cave@rtcnorth.co.uk</a>	
11	Zentia	Gavin Scott	Technical Manager	<a href="mailto:gscott@zentia.com">gscott@zentia.com</a>	
12	Paltech	Adrian Doyle		<a href="mailto:adriandoyle@paltech.ie">adriandoyle@paltech.ie</a> ;	<a href="http://paltech.ie">paltech.ie</a>
13	Paltech	Keith Doyle		<a href="mailto:keithdoyle@paltech.ie">keithdoyle@paltech.ie</a>	
14	Polymer compounders	<u>Richard Clay</u>		<a href="mailto:r.clay@polymer-compounders.co.uk">r.clay@polymer-compounders.co.uk</a>	
15	<u>Arpower</u>	<u>Will Illingworth</u>		<a href="mailto:will.illingworth@arpower.co.uk">will.illingworth@arpower.co.uk</a>	
16	<u>Nefab</u>	<u>Phil Bell</u>		<a href="mailto:phil.bell@nefab.com">phil.bell@nefab.com</a>	
17	<u>Ljamiers</u>	<u>Matthew Carless</u>		<a href="mailto:matthew.carless@ljamiers.co.uk">matthew.carless@ljamiers.co.uk</a>	

Table 3 – List of Possible Clustering Contacts

### **5.3. Circular Economy Conference: Industrial By-Product Utilization and Value Creation**

One of the key events which was attended by the ReSoURCE consortium members project was CIRCON2024 - Circular Economy Conference: Industrial By-Product Utilization and Value Creation in Jamshedpur, India on 3-4 October 2024. This event brought together experts from the industry, research and academia to address the pressing need to recycle and re-purpose by-products in the metallurgical sector. On behalf of RHI Magnesita, Josu A. and Manas Kumar Panja presented the ReSoURCE Project as part of his talk on Recycling of Refractories: Towards Sustainable Steel in India. This innovative, sensor-based automated sorting equipment, which will offer a new standard for recycling refractories, was met with great enthusiasm.

### **5.4. Second Process Industry Conference: Shaping the Transformation**

On October 23–24, 2024, in Brussels, the ReSoURCE project took part in the Second Process Industry Conference: Shaping the Transformation. Alongside business executives and EU policymakers, the event gave ReSoURCE academics a forum to address decarbonization, the circular economy, and energy efficiency. The project strengthened its role in promoting green transformation in the process industries by connecting with important stakeholders and investigating prospects for cooperation on sustainable industrial practices through seminars and networking sessions.

Dissemination, networking, and cooperation efforts increased as the ReSoURCE project progressed towards 2025. The consortium continued to actively showcase project results at international events, interacting with new stakeholders, and fortifying relationships by organizing activities with similar European projects. In addition to raising awareness of the project, taking part in these events promoted new partnerships, encouraged the sharing of information, and created opportunities for the future exploitation and adoption of ReSoURCE results.

### **5.5. AI, Data and Robotics Forum 2025**

In September 23-24, 2025, representatives from the ReSoURCE project consortium attended the ADRA Forum in Stavanger, Norway. Recent project findings were presented by our colleagues Kristin Sjøiland and Akhilesh Kumar Srivastava from SINTEF, showcasing developments in AI-assisted recycling technologies created inside ReSoURCE. Additionally, they took part in a panel debate that addressed: the promise of AI-powered recycling solutions in the future, the significance of cross-sector collaborative innovation, and the real-world difficulties businesses encounter when using AI-based solutions.



Figure 12 – AI, Data, Robotics Forum – Project Presentation

## 5.6. Mineral Recycling Forum 2025

Alexander Leitner, Head of Pioneer Research at RHI Magnesita, represented ReSoURCE at the Mineral Recycling Forum in early April 2025 at Cannes (Mandelieu-La Napoule). During the event, he delivered a presentation entitled “All About Sorting – The Future of Refractory Recycling.” The talk addressed why advanced sorting technologies are essential for improving recycling rates and reducing reliance on primary raw materials, and demonstrated how these technologies can be implemented in practice.

Sorting was emphasized in the presentation as a crucial component of high-quality refractory recycling, not just a technical aspect but also a tactical tool for circularity. Sensor-based sorting solutions were discussed, along with how they could significantly boost the quantity and caliber of recovered refractory materials.

Attending the event offered a great chance to network with industry and research stakeholders, such as plant managers, materials experts, and young professionals, encouraging candid conversations about digitalization, circular resource management, and sustainable industrial practices. In addition to strengthening ReSoURCE's position as a link between innovation and industrial realities, the event helped generate momentum for circularity in a sector of the economy that has historically been conservative.

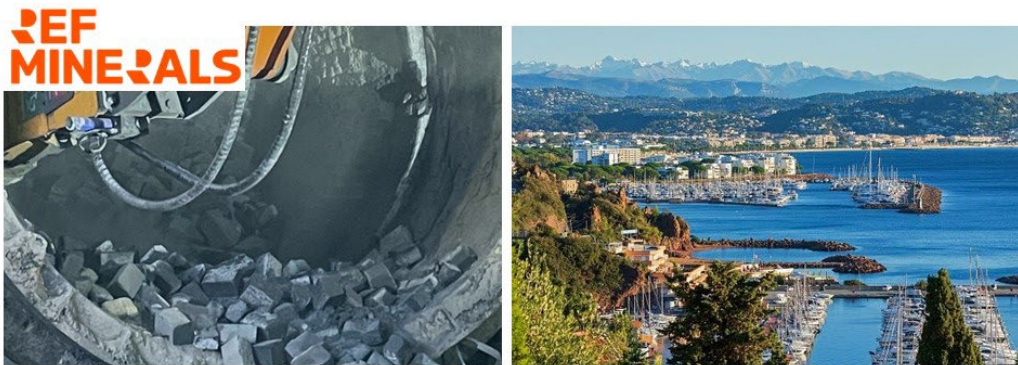
Karl Friedrich, also representing the ReSoURCE project, attended the refractory recycling session at the Mineral Recycling Forum 2025. He presented "Refractory Recycling: Comparison of Conventional and Alternative Comminution Processes" summarizing the project's main results on the prospects and technical difficulties associated with treating refractory materials that have reached the end of their useful lives. The discussion covered: the unique difficulties of recycling refractories, such as pollution and material heterogeneity, a comparison between conventional and alternative methods of comminution, and how circular value chains might benefit from more effective material recovery through creative processing methods. The networking activities within the event improved technical interactions with business and research players involved in the recovery of high-value materials.

# MINERAL RECYCLING FORUM 2025

Pullman Cannes Mandelieu, 9-11 April 2025

Secondary raw material sources, supply, processing, and markets

Sponsor



**CALL FOR PAPERS | EARLY BIRD RATES**



**Mineral Recycling Forum 2025**

Figure 13 – Mineral Recycling Forum 2025 Poster & Project Presentation

Overall the project's visibility within the mineral-recycling world was further enhanced by its Cannes appearance, which also served to establish ReSoURCE as a major contribution to refractory recycling plans that are focused on the future.

### 5.7. International Conference on Solid Waste 2025 (ICSWDG2025)

International Conference on Solid Waste 2025 (ICSWDG2025) took place between 9–12 June 2025, hosted by Dongguan University of Technology, Zhejiang University, and the International Waste Working Group (IWWG). The gathering centered around “Waste Management for Carbon Neutrality and Circular Economy”.

The ReSoURCE project was presented at ICSWDG 2025, contributing to the broader discussion on waste management. The presentation highlighted the project’s overarching objectives, emphasizing its focus on addressing a particularly significant and valuable waste stream within the broader context of sustainable resource management. Key findings from the analysis of the European waste management systems were shared. It concluded with the introduction of a GIS-based map, designed to improve data visualization and decision-making in waste management regarding spent refractories.



Figure 14 – ICSWDG 2025 Poster and ReSoURCE Presentation by Florian Feucht

Participating in ICSWDG2025 also made it possible to have beneficial conversations with global specialists working on carbon-neutral resource management, waste treatment technology, and circular economy strategies. Through these exchanges, the ReSoURCE team obtained input on methodological strategies and discovered possible connections with ongoing international efforts to valorize industrial waste. The occasion offered a venue to increase the project's visibility abroad and to cultivate new partnerships that could aid in the advancement and adoption of ReSoURCE findings.

## 5.8. 17th International Conference on Materials Chemistry (MC17)

The 17th International Conference on Materials Chemistry (MC17) took place between 7-10 July 2025 in UK, hosted at the Edinburgh International Conference Centre (EICC). The conference marked a milestone for the MC series: it was the largest conference to date, boasting a record number of abstract submissions and welcoming over 600 delegates from across academia, industry, and research institutions. The scientific programme was structured around four core themes: Functional inorganic materials Nano and porous materials Soft matter and biomaterials Materials for energy and sustainability—including recycling, and critical materials usage. Each theme was supported by a range of oral presentations and poster sessions.

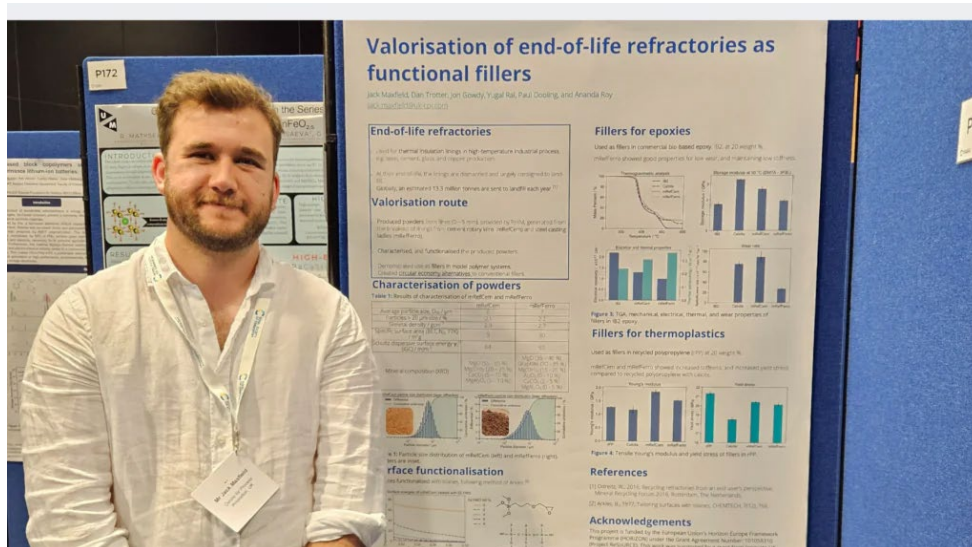


Figure 15 – Poster Presentation by Jack Maxfield at MC17 (2025)

Jack Maxfield, research scientist at the Centre for Process Innovation (CPI) attended the conference and presented his own research within the materials for energy and sustainability theme. His poster focused on the valorisation of end-of-life refractories as functional fillers, exploring the potential of two materials—mRefCem and mRefFerro. These materials, fully characterised in project’s materials passports, show promise as fillers in thermoset and thermoplastic systems, contributing to the circular economy.

## 5.9. Workshop: “Unlocking New Opportunities with Recycled Refractory Materials” organized by ReSoURCE Project

The online workshop “Unlocking New Opportunities with Recycled Refractory Materials” was delivered by 4<sup>th</sup> of December 2024 as a part of the ReSoURCE project which brought stakeholders together to discuss the innovative ways to recycle refractory materials. The goal of this event was to

showcase the most recent developments and prospects in the sustainable management of refractory materials, which are essential to many high-temperature industrial operations. Participants talked about obstacles and exchanged ideas on how to improve resource efficiency, decrease waste, and increase circularity in the refractory industry. The workshop demonstrated the ReSoURCE project's dedication to environmental innovation and reaffirmed the value of sustainable practices in promoting a circular economy through presentations and group discussions.

Two recycled materials created within ReSoURCE, mRefCem and mRefFerro, which are fine powders made by grinding leftover refractories from the steel and cement industries, were the focus of the workshop. In addition to providing a more environmentally friendly option, these secondary-source materials have the ability to be functionalized (for example, using silanes) to suit certain industrial uses.

Speakers included professionals from academia and business, including:

- Project Coordinator: Alexander Leitner (ReSoURCE Technical Coordinator, RHI Magnesita)
- Jack Maxfield and Ananda Roy (CPI)
- Claire Defty and Daniel Trotter (CPI)
- Cais Jurgens, Crowdhelix's Head of Membership Development

The workshop emphasized:

- Sustainability aspects: how using recycled materials in place of traditional fillers can reduce a product's carbon footprint;
- Technical viability, including processing routes, functionalization techniques, and performance considerations
- Opportunities for collaboration include developing use-cases, encouraging communication between stakeholders from other industries

In terms of clustering, the workshop was beneficial as it helped uniting a wide range of stakeholders around a common technological and sustainability concern, it served as a catalyst for multi-actor participation. It complemented ReSoURCE's primary objective, which is to facilitate the market adoption of secondary refractory materials in addition to creating recycling technologies. The workshop expanded the network of partners who could contribute to future value chains and possibly new EU-funded initiatives by disseminating information about the technical, ecological, and economic advantages of these recycled materials.

All things considered, the workshop illustrated ReSoURCE's proactive approach to converting its technology advancements into tangible industrial applications while furthering its clustering strategy through significant involvement and forming partnerships in the circular economy.

**Website Announcement:** <https://www.project-resource.eu/news/unlocking-new-opportunities-with-recycled-refractory-materials-workshop/>

**Circular Industry Helix Post:** <https://platform.crowdhelix.com/opportunities/join-us-for-unlocking-new-opportunities-with-recycled-refractory-materials-workshop-online-4-december-2024-2pm-cet-3982>

**LinkedIn Post:** [https://www.linkedin.com/posts/project-resource\\_recycled-sustainable-refractories-activity-7262076195238780928-KeT6/?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/project-resource_recycled-sustainable-refractories-activity-7262076195238780928-KeT6/?utm_source=share&utm_medium=member_desktop)

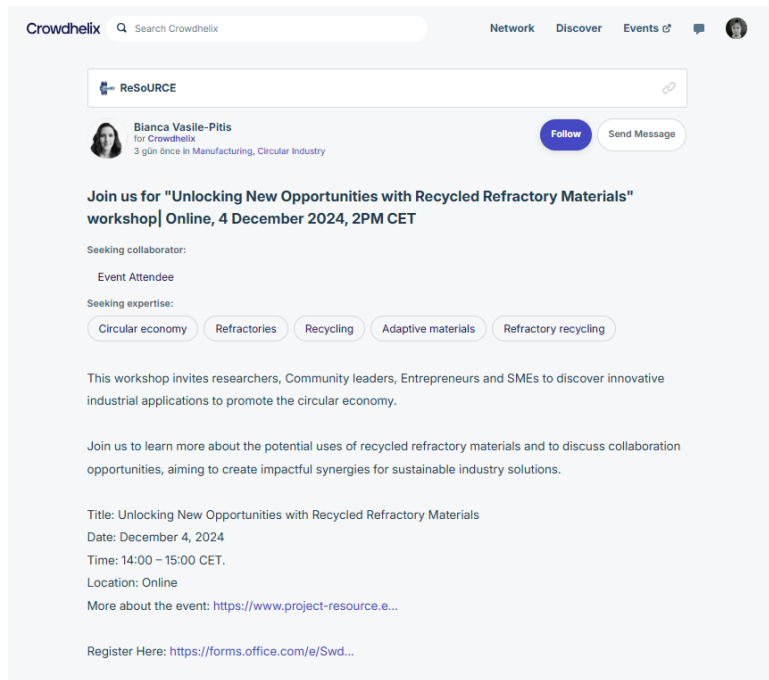


Figure 16 – Helix Announcement “Unlocking New Opportunities with Recycled Refractory Materials” Workshop

In addition to the Helix announcements, the workshop has been also shared by the consortium members through the websites in order to reach out more researchers working in the similar fields.

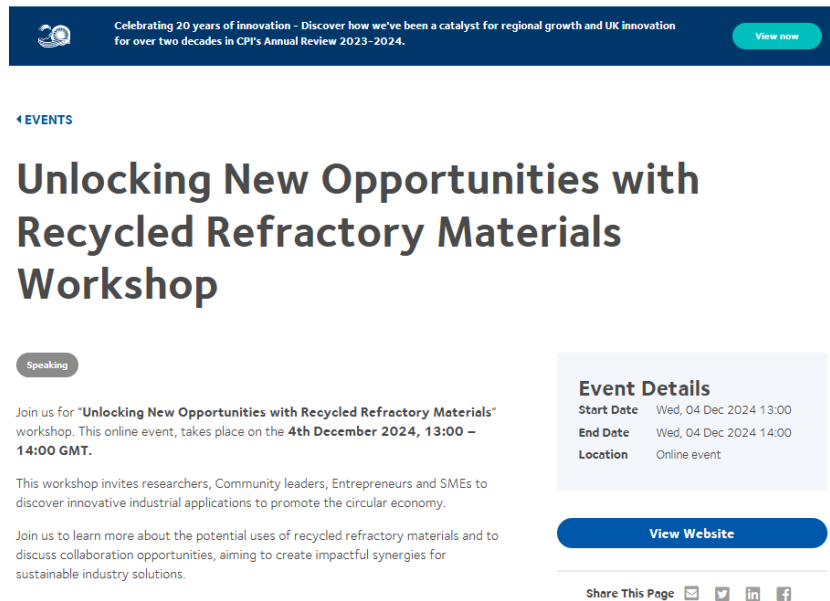





Figure 17 – Website Announcement by CPI “Unlocking New Opportunities with Recycled Refractory Materials” Workshop

Attendees, including researchers and SMEs, explored collaboration opportunities, sustainable material applications, and carbon reduction strategies. In order to share the workshop, the Project results and any other possible events and outputs of the Project with wider audience, related LinkedIn groups have been gathered previously. As an example, the LinkedIn post considering the workshop has reached the following stats:


<b>Post URL</b>	<a href="https://www.linkedin.com/feed/update/urn:li:share:7262428401813131264">https://www.linkedin.com/feed/update/urn:li:share:7262428401813131264</a>
<b>Post Date</b>	Nov 13, 2024
<b>Post Publish Time</b>	11:37 AM
<b>Post Performance</b>	
Impressions	290
Members reached	180
Reactions	5
Comments	3
Reposts	4
<b>Reactions Highlights Nov 13, 2024 to Nov 14, 2024</b>	
Top job title	Project Manager
Top location	Tyneside Area
Top industry	Higher Education
<b>Comments Highlights Nov 13, 2024 to Nov 14, 2024</b>	
Top job title	Project Manager
Top location	Tyneside Area
Top industry	Research Services

Table 4: Statistics on the “Unlocking New Opportunities with Recycled Refractory Materials” Workshop


**ReSoURCE**  
 1,049 followers  
 2d • Edited • 


**Unlocking New Opportunities with Recycled Refractory Materials Workshop** 


The **ReSoURCE** Project, in collaboration with **CPI** and **CrowdHelix**, is excited to host an insightful workshop on **December 4, 14:00 – 15:00 CET** focused on the potential of **#recycled** refractory materials. This event will gather researchers, industry leaders, entrepreneurs, and SMEs to explore innovative, **#sustainable** solutions that reduce carbon footprints across various industries.

 **Why Attend?**


- **Discover Collaboration Opportunities:** Connect with experts across sectors interested in the applications of recycled refractory materials.
- **Promote Circular Economy:** Learn about integrating recycled refractory materials into products to minimize waste and maximize resource lifecycle.
- **Reduce Carbon Footprint:** Hear about practical applications that lower carbon emissions while meeting sustainability goals.

The workshop will showcase materials like **mRefCem** and **mRefFerro**—fine powder materials derived from spent **#refractories** used in the cement and steel industries. By replacing traditional fillers, these materials can significantly **#reduce** the carbon footprint of new products. To check the technical data sheets, please visit <https://lnkd.in/dY6Eb9x7>.



 **Register now** to join us in exploring the environmental and economic benefits of recycled refractory materials and discovering new collaboration opportunities! <https://lnkd.in/dJ5Ctm2Z>



 To know more about the workshop, please visit our News section <https://lnkd.in/dRk5sE9B>

[#CircularEconomy](#) [#Innovation](#) [#Refractory](#) [#recycling](#)



**Upcoming Workshop**  
**Unlocking New Opportunities  
 with Recycled Refractory Materials**  
**December 4, 14:00 -15:00  
 CET**  
**Register now!**



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  39

3 comments · 10 reposts

Figure 18 – LinkedIn Announcement “Unlocking New Opportunities with Recycled Refractory Materials” Workshop

ReSoURCE's clustering strategy was greatly aided by the workshop "Unlocking New Opportunities with Recycled Refractory Materials." In addition to raising awareness of the recycled materials mRefCem and mRefFerro and encouraging conversation about their technological and sustainable possibilities, it improved engagement with stakeholders from academia, industry, and SMEs. Although the event did not directly lead to any publicly announced sponsored projects or consortia, it did provide important chances for cooperation, information sharing, and possible future partnerships. Additionally, the workshop strengthened the project's long-term effect and networking goals by bringing ReSoURCE into line with more general European research priorities in industrial sustainability and the circular economy.

### 5.10. Webinar: Unlocking Circular Potential – Refractory Fillers in Advanced Composites

The ReSoURCE project collaborated with RHI Magnesita, CPI, and Crowdhelix to offer an innovation webinar titled "Unlocking Circular Potential: Refractory Fillers in Advanced Composites" on June 26, 2025. In order to investigate how recovered refractory materials might function as sustainable fillers in composite applications, notably in industries like roofing and automotive, the workshop gathered together researchers, SMEs, industry experts, and entrepreneurs. The webinar's main topic was mRefCem and mRefFerro, two secondary-source powders made from milled discarded refractory linings from the steel and cement industries. The presenters emphasized how these materials may benefit the larger circular economy, lessen the carbon footprint of composite products, and reduce the use of raw materials.

The graphic is a promotional poster for a webinar. At the top, the title "Unlocking Circular Potential – Refractory Fillers in Advanced Composites Webinar" is written in a large, dark blue serif font. Below the title, on the left, is the date "05.06.2025" and a "Share" button with a left-pointing arrow. The central part of the graphic features a background image of grey, angular refractory material. Overlaid on this image is a dark blue banner with the text "Upcoming Webinar" in white. Below the banner, the webinar title "Unlocking Circular Potential: Refractory Fillers in Advanced Composite" is written in white, followed by the date and time "June 26, 10:30 -11:45 CEST" and a red "Register now!" button. In the bottom left corner, there are logos for "ReSoURCE" and "Funded by the European Union". In the bottom right corner, there is a QR code.

Figure 19 –Webinar Announcement: “Unlocking Circular Potential – Refractory Fillers in Advanced Composites”

Among the important speakers were:

- Alexander Leitner (Project Coordinator, RHI Magnesita)
- Ananda Roy (Team Leader, Nanomaterials & Composites, CPI)
- Yugal Rai, Senior Research Engineer, Materials Science, CPI
- Jack Maxfield (Sustainable Materials Research Scientist, CPI)

This webinar greatly improved ReSoURCE's cooperative network from a clustering perspective by bringing together players from industry, materials science, and SMEs committed to sustainability, it improved cross-sector collaboration, Investigating practical uses of recycled refractory fillers in well-established industrial value chains, it increased the opportunity for innovation. By demonstrating how industrial byproducts may be recycled in high-value composite applications, it closely linked with ReSoURCE's aim of fostering circularity in materials. It provided a platform for new initiatives, pilot projects, or collaborative proposals, opening the door to future collaborations and co-creation opportunities.

The webinar was a powerful event that highlighted ReSoURCE's approach of converting technological innovation into sustainable, market-relevant solutions and reaffirmed the project's function as a link in the European circular economy ecosystem.

### **5.11. Webinar: Exploring LIBS for Industry-Wide Recycling and Material Characterisation – A Construction Waste Case Study**

A webinar titled "Exploring LIBS for Industry-Wide Recycling and Material Characterization – A Construction Waste Case Study" was held by ReSoURCE in July 2025. This online event showcased how Laser-Induced Breakdown Spectroscopy (LIBS) can revolutionize recycling processes in the construction industry and emphasized its usage as a potent tool for real-time elemental analysis. This seminar employed building and demolition waste as a case study instead of refractories, demonstrating how LIBS may identify chemical compositions of mixed elements from construction debris and assist minimize dependency on virgin raw materials.

## Upcoming Webinar: Exploring LIBS for Industry-Wide Recycling and Material Characterisation – A Construction Waste Case Study



Figure 20 –Webinar Announcement: “Exploring LIBS for Industry-Wide Recycling and Material Characterisation – A Construction Waste Case Study”

Participants were introduced to the main benefits of LIBS throughout the webinar, including its ability to supply multielemental data, analyze data quickly, and adapt to industrial processes. Speakers described how better sorting and classification of building waste is made possible by incorporating LIBS into recycling operations, opening the door to circular value chains and higher-quality material recovery. Importantly, the conversation moved beyond theory and focused on real-world applications, demonstrating how LIBS may promote sustainability by facilitating more effective material reuse in construction.

This webinar reaffirmed ReSoURCE's function as a link between advanced sensor technologies (such as LIBS) and larger industrial sectors from the perspective of clustering. The event strengthened cross-sector collaboration and created opportunities for new partnerships by bringing together specialists from materials research, recycling, construction, and laser-analysis firms. It also closely matched the project's goal, which is to promote circularity by using cutting-edge digital and sensor-based sorting technologies for a variety of industrial waste streams, not just refractories.

### 5.12. ReSoURCE Final Event: Driving Digital Innovation for a Circular and Competitive European Industry

The ReSoURCE consortium concluded its project activities with the Final Event, held on 17 November 2025 at the “House of Austria” in Brussels. In order to invite relevant stakeholders, sister projects and researchers working on similar fields, an open call and registration page was initiated through the official project website.



Figure 21 –Final Event Announcement Poster: “Driving Digital Innovation for a Circular and Competitive European Industry”

In addition to the invitations through the website, Crowdhelix Platform and the social media (LinkedIn), special invitations has been sent to the representatives of each defined sister project of the ReSoURCE project.

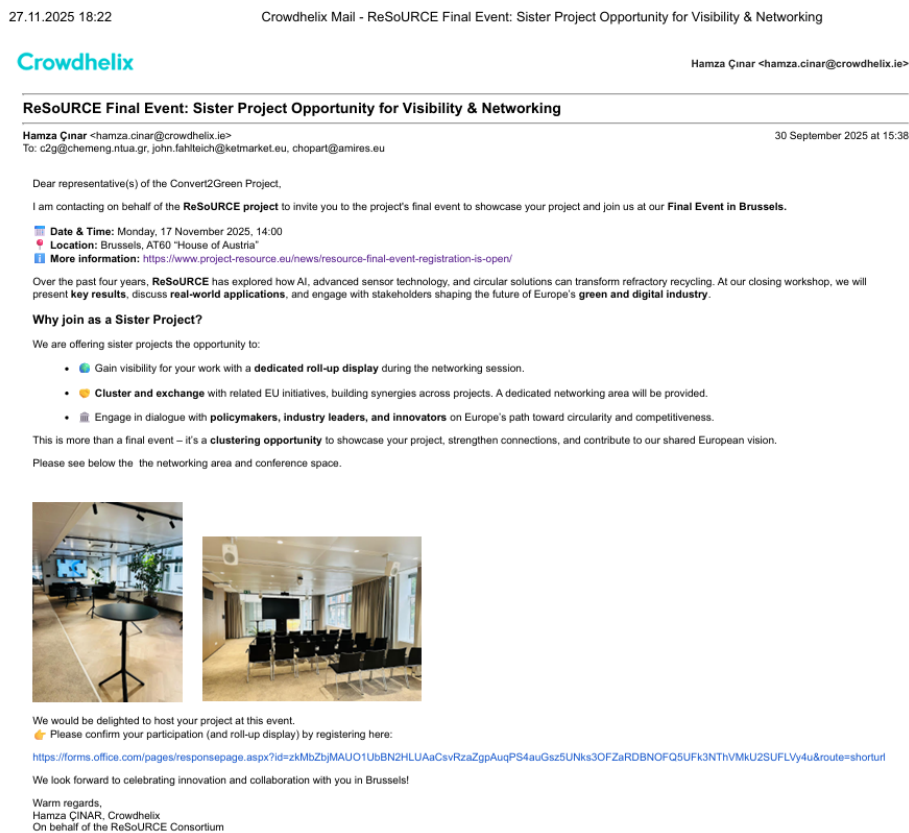


Figure 22 –Final Event – Invitation to the Sister Projects

Hephaestus, BioICEP, ROTATE, Convert2Green, and Thermodust were among the sister projects alongside other stakeholders that were specially invited to the ReSoURCE Final Event. The consortium took extra efforts to involve these projects, emphasizing possible synergies and creating chances for cooperation within the larger European circular economy and industrial recycling community. Their involvement, whether in person or through discussion contributions, was meant to improve networking, facilitate information sharing, and investigate the alignment of upcoming research and innovation initiatives. A specific area has been provided to the attending stakeholders where they could share their own projects and network among the other participants.

The event was the result of more than four years of cooperative research and development focused on creating sensor-based, AI-assisted solutions for effective recycling of refractory and other industrial waste materials. A wide range of stakeholders, including project partners, business representatives, legislators, and possible end users, came together for the Final Event, which offered a special forum to highlight the project's accomplishments, talk about lessons learned, and look into ways to use its outcomes in the future.

The strategic significance of digitalization and AI-driven material sorting technologies for improving circularity in industrial processes was emphasized in Philipp Sedlazeck's keynote address from Montan-University Leoben. A series of presentations on the project's Key Exploitable Results ensued, showcasing the technological innovations made possible by ReSoURCE, such as the RAPTOR multisensor sorting system, dual-integrated LIBS systems for accurate material identification, and hyperspectral classification platforms. The capabilities of these devices and their useful applications in industrial recycling were thoroughly explained to the attendees.



Figure 23 –Final Event – Presentations

Industrial partners and research teams offered real-world experiences in the case study and best practice session that followed, demonstrating how ReSoURCE solutions may increase the efficiency of recycling refractory and industrial waste. Lessons learnt, obstacles surmounted, and the importance of incorporating cutting-edge sorting technology into current industrial workflows were all highlighted in the discussion. Experts from business, academia, and policy interacted throughout the forward-thinking panel debate.

The ReSoURCE Final Event was attended by more than 40 participants, representing a wide range of stakeholders from throughout Europe. The wide applicability of the project's results for both industrial operations and policy-oriented efforts was reflected in the attendees, who came from industry, research organizations, universities, EU-funded projects, public agencies, and consultancy firms. A comprehensive and interdisciplinary discussion on the future of AI-assisted recycling and circular resource management was secured by the participation of delegates from many industries.

### **Sector Representation:**

Strong industrial interest in the project's technological breakthroughs was demonstrated by the sizeable percentage of guests who were from businesses engaged in manufacturing, materials processing, and recycling. Perspectives on practical implementation and industrial needs were provided by senior engineers, project managers, data science specialists, heads of research, and technology professionals.

Research scientists, process engineers, PhD researchers, and innovation officers from universities and research institutes were among the many members of the academic and scientific community that attended the event. Their contributions promoted knowledge transfer across fields and strengthened the scientific aspect of the conversations.

Additionally, a number of participants represented public authorities, associations, networks, and EU institutions, demonstrating the significance of ReSoURCE results for future funding priorities, standardization, and policy development.

### **Participation and Interests in the Session:**

Participants were particularly interested in the following, according to an analysis of session preferences: Project outcomes and accomplishments, case studies, industry narratives, and chances for networking and teamwork.

Industry participants showed interest in how ReSoURCE technologies may be incorporated into actual production systems by giving priority to sessions that focused on real-world case studies and industrial applications. Sessions on project accomplishments, cutting-edge material categorization methods, and potential future collaborations piqued the interest of researchers and representatives of EU-funded projects.

The Final Event's widespread and engaged attendance demonstrated ReSoURCE's applicability to a variety of stakeholder groups. The combination of researchers, institutional players, and industrial practitioners produced an atmosphere that was favorable to cross-sector cooperation, clustered debates, and meaningful exchanges. The project's effect and sustainability beyond its formal conclusion were further enhanced by the diversified attendance, which also strengthened possible routes for their future adoption and increased visibility of the project's Key Exploitable Results.

Participants highlighted the relevance of cooperative innovation in promoting sustainable industrial transformation as they talked about the routes for technology adoption, regulatory backing, and scaling of circular economy practices.

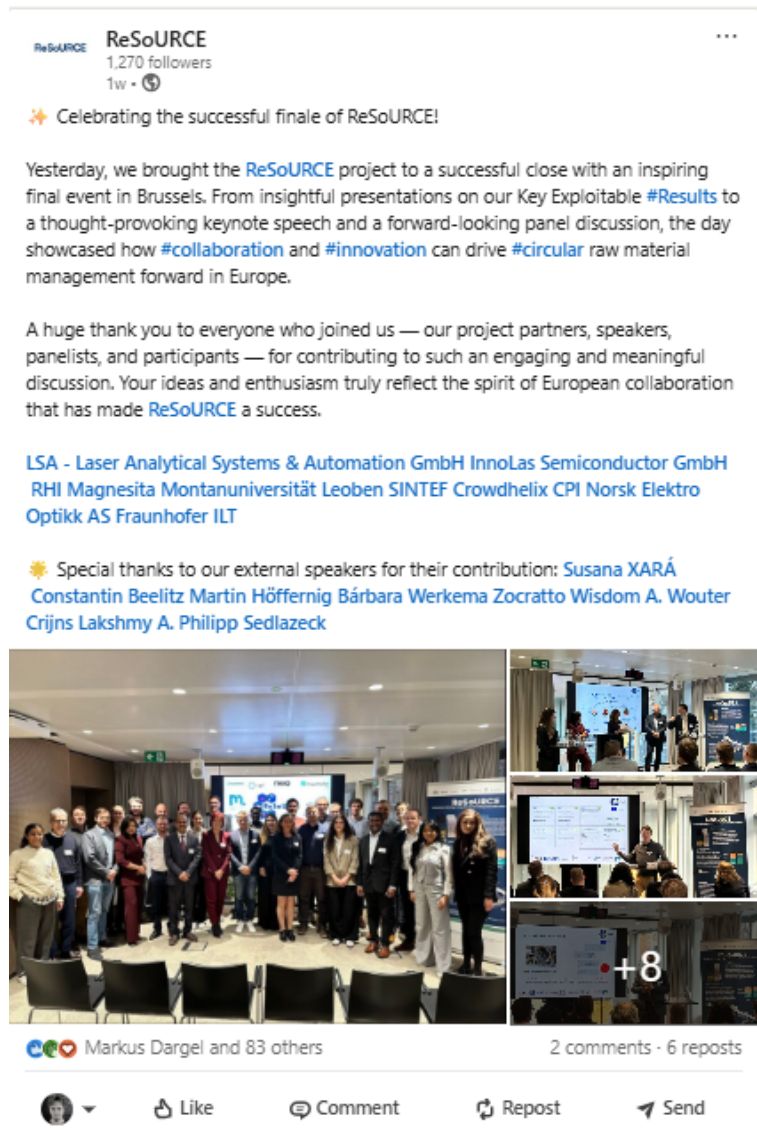


Figure 24 –Final Event – Linked-in Post

Presenting the project's findings, showcasing technology advancements, and encouraging thoughtful conversations about the future of sustainable recycling solutions were all effectively accomplished by the ReSoURCE Final Event. Throughout the event, stakeholders from business, academic institutions, and legislative organizations actively participated, offering perspectives and insights that enhanced the conversations. By disseminating images, highlights, and important insights via LinkedIn and other communication channels, the consortium made sure the Final Event was widely known in addition to the talks and presentations. By interacting with the larger community of stakeholders interested in circular economy solutions, AI-supported recycling technology, and the results of the ReSoURCE project, these posts assisted in expanding the event's reach beyond the physical audience.



*Figure 25 –Final Event – Consortium Photo*

Participants participated in clustering activities during the networking sessions, making connections with representatives from comparable European projects and initiatives centered on digitalization, industrial resource efficiency, and the circular economy. The European network surrounding sustainable material management was strengthened by these meetings, which promoted discussions on new partnerships, synergies, and alignment of upcoming research and innovation initiatives.

## **6. Next steps and the clustering roadmap**

Through a combination of focused events, seminars, webinars, and Helix matching efforts, the ReSoURCE project has considerably improved its clustering and networking strategy by M42. Consolidating alliances, encouraging cross-sectoral collaboration, and optimizing the effect and sustainability of project outputs are the next steps, building on these foundations. Recent Helix events, such as the Circular Economy and Materials Matchmaking Event (Barcelona, April 2025) and the Materials Helix Event (Dublin, November 2023), have shown how successful organized networking and co-creation formats are in creating new chances for collaboration. In this regard, ReSoURCE will keep using multi-actor interaction to find complementary skills, investigate cooperative approaches, and increase the industrial adoption of recycled refractory materials. By bringing together academia, business, and innovation hubs throughout the circular economy landscape, the Barcelona matchmaking event in particular demonstrated the potential for cross-sector synergies.

In addition to spreading technical knowledge, the project's webinars and workshops, like "Unlocking New Opportunities with Recycled Refractory Materials" (December 2024), "Unlocking Circular Potential – Refractory Fillers in Advanced Composites" (June 2025), and "Exploring LIBS for Industry-Wide Recycling and Material Characterization – A Construction Waste Case Study" (July 2025). By raising stakeholder knowledge of sustainable materials, functionalizing recycled powders, and sensor-based characterisation methods, these programs have fostered possible collaborations and established a foundation for next innovation projects.

In the next period, as ReSoURCE approaches its conclusion, one of the main focus of the consortium will be to maximize project's Key Exploitable Results' (KERs) impact and exploitation. This involves making sure that the technical outputs are successfully conveyed to industry and pertinent stakeholders, such as the recycled refractory materials (mRefCem and mRefFerro), their functionalization strategies, and sensor-based characterisation techniques like LIBS. The creation of exploitation strategies, the distribution of technical guides, and assistance with industrial trials or pilot applications will be the project's top priorities. ReSoURCE hopes to deliver concrete benefits for circular economy practices, industrial sustainability, and innovation in materials processing by encouraging the adoption of these findings, ensuring that the knowledge produced during the project will continue to generate value beyond its lifetime.

At the same time, A key component of ReSoURCE's clustering and networking approach, the Crowdhelix Helix community will continue to be active for at least two years following the project's conclusion. This ongoing activity will make it possible for academia, business, SMEs, and innovation centers to continue interacting, which will promote new partnerships, idea co-creation, and the formation of follow-up projects. In order to ensure that the relationships, synergies, and collaborative momentum created by ReSoURCE are maintained well after M42, stakeholders will continue to have access to networking opportunities, take part in matchmaking events, and maintain knowledge sharing channels through the Helix.

## 7. Conclusions

By M42, the ReSoURCE project has advanced circular economy concepts throughout extractive and processing value chains and fostered meaningful partnerships. The project has achieved significant milestones in networking, information exchange, and stakeholder involvement through an organized clustering strategy that combines Helix matchmaking events, seminars, webinars, and multi-project partnerships. In addition to raising the project's profile, these initiatives have improved collaborations, which are essential for converting research findings into workable solutions for sustainable materials and industrial processes.

The creation of a coordinated clustering plan has been greatly aided by important partnerships with sister projects financed by the Horizon-CL4-2021-TWIN Transition Program, such as ROTATE, HEPHAESTUS, and RAWMINA. These interactions made it easier to identify shared difficulties in resource efficiency, recycling, and waste valorization, as well as to coordinate methodology and technological approaches and participate in events together.

ReSoURCE's clustering technique has been greatly aided by the Circular Industry Helix, which is housed on the Crowdhelix platform. The Helix has created a vibrant environment for networking, idea sharing, and the distribution of the project's Key Exploitable Results (KERs) by bringing together more than 630 specialists and 265 organizations from 53 countries. Specifically, the novel recycled refractory materials mRefCem and mRefFerro, as well as their functionalization approaches and sensor-based characterization methods like LIBS, are concrete solutions that improve material sustainability, lower carbon footprints, and provide new industrial uses. In order to guarantee ongoing cooperation, exploitation, and information sharing, the Helix community is anticipated to continue operating for at least two years after the project's completion.

ReSoURCE's specialized workshops and webinars, such as "Unlocking New Opportunities with Recycled Refractory Materials," "Unlocking Circular Potential – Refractory Fillers in Advanced Composites," and "Exploring LIBS for Industry-Wide Recycling and Material Characterization – A Construction Waste Case Study," have been instrumental in spreading project results, encouraging multi-actor participation, and igniting follow-up projects. Opportunities for pilot testing, KER adoption, and co-creation of future innovative projects have been made possible by these events, which have facilitated targeted interaction with academic partners, SMEs, and industrial stakeholders.

The project's visibility was further enhanced, cross-sector networking was facilitated, and synergies with other European initiatives were identified through participation in high-profile events like the North East Automotive Expo 2024, Materials Helix Event (Dublin, 2023), and Circular Economy and Materials Matchmaking Event (Barcelona, 2025). The influence of ReSoURCE has expanded beyond the original project consortium through outreach initiatives, including as cooperation with initiatives like BioICEP and Thermodust and interaction with players in the industrial, refractory, and automotive sectors.

Overall, the ReSoURCE project demonstrates that well-coordinated clustering activities, combined with the strategic dissemination and exploitation of KERs, can generate lasting value for stakeholders. The integration of technical innovation, cross-sector collaboration, and a sustained Helix community ensures that the project's results will continue to drive sustainable advancements in resource management, circular materials, and industrial sustainability well beyond the project's official end.

## 8. Annexes

### Annex 1



**Date(s):** 15-16 May 2024,

**Timings:** 9-18

**Location & Venue:** [Brussels, The Egg Conference Venue](#)

#### Workshop: “Accelerating the Adoption of Circular Strategies in the Raw Materials and Steel Industries”

##### Context:

Groundbreaking technologies that accelerate the adoption of Circular Strategies in the Raw Materials and Steel Industries are the focus of four Horizon Europe-funded projects: ReSoURCE, ROTATE, Hephaestus, and RawMina.

The Crowdhelix Raw Materials Summit presents the opportunity to explore these pioneering innovations, and to participate in a roundtable discussion designed to showcase strategies that stimulate stakeholder engagement in circularity and industry transformation.

This event promises to be a catalyst for meaningful dialogue, insights, and connections, shaping a more sustainable and resilient future for European innovation and industry.

**Date:** 16 May

**Time:** 16,00 - 17,45

**Venue:** The EGG Bruxelles

16.00 - 16.30

Welcome and introduction - Crowdhelix

##### Session 1:

#### “Why we need to improve the extractive, refractories and steel industries”

**Moderator:** Susana Xarà, HaDEA

##### **Speakers:**

- Peter Tom Jones, Director, KU Leuven Institute for Sustainable Metals and Minerals
- Philipp Hartlieb — “The role of technology for shaping the European mine of the future”. Chair of Mining Engineering and Mineral Economics, Montanuniversität Leoben

<p><u>Aim of the session:</u> to provide a high-level view of the global context of the extractive, refractory and steel industries.</p>
<p>16.30 - 17.00  Session 2:  <b>“Overview of the EU-funded projects Hephaestus, Rotate and ReSoURCE and their technologies”</b>  Moderator: Susana Xarà, HaDEA  Opening of the session: Short video about the three projects</p> <p>Speakers:  Hephaestus project: Thomas Abo Atia, KU Leuven  ReSoURCE project: Simone Neuhold, RHI Magnesita  Rotate project: César Luaces Frades, Director General of ANEFA  RAWMINA project: Marco Lopes, Crowdhelix  Q&amp;A</p> <p><u>Aim of the session:</u> Provide an insight into the projects, technologies and expected impacts.</p> <p>HaDEAs' remarks on the way forward for these initiatives and how their results can be better exploited and integrated into the EC vision for 2050</p>
<p>17.00 - 17.45  Roundtable: <b>“How to engage stakeholders in circular strategies and industry transformation”</b>  Introduction to the working groups by Crowdhelix: Valeria Pulieri, Impact Acceleration Manager  <b>“The Raw materials and Circular Industry Helixes as vibrant communities where innovative collaborations can thrive”</b></p> <p>Start of the 3 roundtables/working groups with audience participation - one per project for 20 min.</p> <p>Topics:</p> <ol style="list-style-type: none"> <li>a. Circular strategies (with César Luaces Frades, Director General of ANEFA);</li> <li>b. Industrial transformation and Industry 5.0 (with Thomas Abo Atia, KU Leuven)</li> <li>c. Industrial synergies (with Simone Neuhold, RHI Magnesita)</li> </ol> <p>Final remarks</p> <p><u>Aim of the session:</u> Provide takeaways at a societal, environmental and innovation level to engage the audience and create new connections for future exploitation of the project outcomes.</p>

## JOIN CROWDHELIX FOR AN INTERACTIVE WORKSHOP

### Accelerating the Adoption of Circular Strategies in the Raw Materials and Steel Industries

**DATE**  
16 May 2024

**TIME**  
4pm - 5:45pm CEST

**PLACE**  
The Egg, Brussels

Groundbreaking technologies that accelerate the adoption of Circular Strategies in the Raw Materials and Steel Industries are the focus of four Horizon Europe-funded projects:

**ReSoURCE**

**R8TATE**

**HEPHAESTUS**

**RAWMINA**

The Crowdhelix workshop at the Raw Materials Summit explores these pioneering innovations and our workshop discussion is designed to showcase strategies that stimulate stakeholder engagement in circularity and industry transformation.

#### RAW MINERALS HELIX COMMUNITY



Raw Minerals Helix



The Raw Minerals Helix is an international community of specialists in CRMs recovery and related disciplines in the Crowdhelix global collaboration network. The helix includes researchers, industry actors, ethics specialists and policy makers, civil society (end users) and participants of other relevant projects and relevant actors across Europe/the world. The RAWMINA Horizon 2020 Project is a key project in the helix, aimed at developing and demonstrating an innovative pilot system for the clean and sustainable production of non-energy, non-agricultural raw materials from Mine Waste.

216 Experts

132 Organisations

38 Countries

The RAWMINA project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 958252.

#### CIRCULAR INDUSTRY HELIX COMMUNITY

**ReSoURCE**



Circular Industry Helix



The Circular Industry Helix community of specialists and stakeholders, includes those from the domains of materials science, process engineering, mineral waste recycling and industrial innovation, as well as relevant policy makers, standardisation agents and citizen interest groups. A key priority area for the European area is to increase security and sustainability in the access and use of primary and secondary raw materials, with a focus on those Critical Raw Materials which have been defined as vital for EU industrial value chains and strategic sectors. The Helix was initiated to support the validation and steering of the ReSoURCE project, a comprehensive, advanced sensor-based system for refractory waste sorting and powder handling.

471 Experts

214 Organisations

49 Countries

The ReSoURCE project is funded by the European Union's Horizon Europe Framework Programme (HORIZON) under the Grant Agreement Number: 101058310.

## AGENDA

### 16:00 - 16:30: Session 1

"Why we need to improve the extractive, refractories and steel industries"

**Moderator: Susana Xarà, HaDEA**

#### Speakers:

- Peter Tom Jones, Director, KU Leuven Institute for Sustainable Metals and Minerals
- Philipp Hartlieb — "The role of technology for shaping the European mine of the Future", Chair of Mining Engineering and Mineral Economics, Montanuniversität Leoben.

### 16.30 - 17.00: Session 2

"Overview of the EU-funded projects Hephaestus, Rotate and ReSoURCE and their technologies"

**Moderator: Susana Xarà, HaDEA**

#### Speakers:

- Hephaestus project: Thomas Abo Atia, Research Manager, KU Leuven
- ReSoURCE project: Simone Neuhold, Research Associate for Recycling, RHI Magnesita
- Rotate project: César Luaces Frades, Director General of ANEFA
- RAWMINA project: Marco Lopes, Impact Accelerator Manager, Crowdhelix

### 17.00 - 17.45: Roundtable

**"How to engage stakeholders in circular strategies and industry transformation"**

Introduction to the working groups by Crowdhelix: Dr Valeria Pulieri, Impact Acceleration Manager

**"The Raw materials and Circular Industry Helixes as vibrant communities where innovative collaborations can thrive"**

#### Topics:

- a. Circular strategies;
- b. Industrial transformation and Industry 5.0;
- c. Industrial synergies



## Annex 2

### Projects



#### **ROTATE - CIRCULAR ECOLOGICAL ESSENTIAL & CRITICAL RAW MATERIALS**

**Start date:** 1 September 2022 **End date:** 31 August 2026

**Coordinated by:** ASOCIACION NACIONAL DE EMPRESARIOS FABRICANTES DE ARIDOS, Spain

**Partners:**

ASOCIACION EMPRESARIAL DE INVESTIGACION CENTRO TECNOLOGICO DEL MARMOL,PIEDRA Y MATERIALES, Spain

CENTRE INTERPROFESSIONNEL TECHNIQUE D'ETUDES DE LA POLLUTION ATMOSPHERIQUE ASSOCIATION, France

CHALMERS TEKNISKA HOGSKOLA AB, Sweden

METSO OUTOTEC FINLAND OY, Finland

UNIVERSIDAD POLITECNICA DE MADRID, Spain

HORMISORIA SL, Spain

TEKNOLOGISK INSTITUT, Denmark

UNIVERSITE DE LIEGE, Belgium

INVESTORNET-GATE2GROWTH APS, Denmark

CANTERAS INDUSTRIALES SL, Spain

ADVANCED MINERAL PROCESSING SL, Spain

AGREPOR AGREGADOS -EXTRACCAO DE INERTES, SA, Portugal

ROCTIM AB, Sweden

FUNDACION TORMES-EB, Spain

AKKA HIGH TECH, France

AKKA I&S, France

LAFARGEHOLCIM GRANULATS, France

VELDE INDUSTRI AS, Norway

VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V., Belgium

ZABALA INNOVATION CONSULTING, S.A., Spain

IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE, United Kingdom



# HEPHAESTUS

**HEPHAESTUS - Heavy and Extractive industry wastes PHAsing out through ESG Tailings  
Upcycling Synergy**

**Start date:** 1 June 2022      **End date:** 30 November 2026

**Coordinated by:** RINA CONSULTING SPA, Italy

**Partners:**

RINA CONSULTING - CENTRO SVILUPPO MATERIALI SPA, Italy

ETHNICON METSOVION POLYTECHNION, Greece

GENIKI METALLEUTIKI KAI METALLOURGIKI ANONIMI ETAIRIA - (GENERAL  
MINING AND METALLURGICAL COMPANY S.A.), Greece

ADVANCED MINERALS AND RECYCLING INDUSTRIAL SOLUTIONS IKE, Greece

MYTILNAIOS ANONIMI ETAIREIA, Greece

KATHOLIEKE UNIVERSITEIT LEUVEN, Belgium

AIT EUROPA ENGINEERING SRL, Italy

ENGITEC TECHNOLOGIES SPA, Italy

ACCIAI SPECIALI TERNI SPA, Italy

# ReSoURCE

**ReSoURCE - Refractory Sorting Using Revolutionising Classification Equipment**

**Start date:** 1 June 2022

**End date:** 30 November 2025

**Coordinated by:** RHI MAGNESITA GMBH, Austria

**Partners:**

LSA-LASER ANALYTICAL SYSTEMS & AUTOMATION GMBH

INNOLAS LASER GMBH

NORSK ELEKTRO OPTIKK AS

FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN  
FORSCHUNG EV

MONTANUNIVERSITAET LEOBEN

SINTEF AS

CROWDHELIX LIMITED

CENTRE FOR PROCESS INNOVATION LIMITED LBG

## Annex 3



### ReSoURCE - Refractory Sorting Using Revolutionizing Classification Equipment

Location: **AT60 "House of Austria"** - Avenue de Cortenbergh 60, 1000 Brussels.

Date: **November 17, 2025**

14:00 – 17:00 – ReSoURCE Final event workshop

17:00 – 19:00 – Networking and aperitivo

#### Welcome to the ReSoURCE Final Event:

#### Driving Digital Innovation for a Circular and Competitive European Industry

Time	Speaker	Topic
	<b>Alexander Leitner</b> RHIM <b>ReSoURCE video</b>	<b>Welcome</b>
<b>14:00 – 14:15</b>	<b>Susana Xara</b> – HaDEA (ReSoURCE Project Adviser)	<b>Opening remarks</b>
<b>14:15 – 14:35</b>	<b>Alexander Leitner</b> RHIM <b>Keynote: Philipp Sedlazeck</b> Montan University Leoben	<b>Keynote intro</b> Digital Transformation of Circular Raw Material Management: Facing Today's Challenges in AI-Driven, Sensor-Based Recycling Technologies to Engineer Tomorrow's Solutions.
<b>14:35 – 15:30</b>	<b>Session 1: moderated by Susana Xara</b>	<b>ReSoURCE focus: Key Exploitable Results</b>
	<b>Markus Dargel</b> , LSA	<b>Dual Integrated LIBS Systems for Real-Time, High-Precision Material Classification</b>
	<b>Julio Hernandez</b> , NEO	<b>Real-Time Hyperspectral Material Classification Platform for Industrial Sorting</b>
	<b>Cord Fricke-Begemann</b> , Fraunhofer ILT	<b>AI-Based Multi-Sensor</b>
	<b>Alexander Leitner</b> , RHIM/ <b>Markus Dargel</b> , LSA/ <b>Florian Feucht</b> , MUL	<b>RAPTOR</b>
	<b>Chandana Ratnayake</b> , SINTEF	<b>Multi-Chamber Sorting System for Fine Fractions</b>
	<b>Christina Pözl</b> , RHIM	<b>PHOENICS</b>
	<b>Heidi ElSayed</b> , CPI	<b>LCA and TEA</b>
	<b>Cais Jurgens</b> , CHX	<b>CrowdHelix</b> Introduction the <b>Helix platform</b> and how it connects research, industry, and policy communities.



<b>15:30 – 16:15</b>	<b>Session 2: moderated by Akhilesh Kumar Srivastava</b>	<b>Case study and best practice</b>
	<i>Ananda Roy, CPI</i>	KER on materials and Zentia case study
	<i>Wisdom Asotah, MPI</i>	Cement use case and alternatives for developed materials
	<i>Wouter Crijns, Resourcefull</i>	RHIM – Resourcefull collaboration of recycling
<b>16:15 – 17:00</b>	<b>Session 3: moderated by Barbara Zoccratto</b>	<b>Forward looking / panel discussion</b>
		<b>Now What? Future Directions and Policy Opportunities Emerging from ReSoURCE</b>
	<i>Mariagiovanna Carpinteri, A.SPIRE</i>	A.SPIRE view on what future could bring for such project
	<i>Martin Höffernig, Siemens</i>	Siemens view on how industry and technology could contribute
	<i>Lakshmy Arvind, COGNIMan</i>	Innovation ecosystem and skills perspective.
	<i>Constantin Beelitz, RHIM</i>	RHIM perspective on looking forwards
	<i>Susana Xara, HaDEA</i>	HaDEA perspectives and recommendations
	<i>Open discussions</i>	
<b>17:00 – 17:15</b>	<b>Alexander Leitner and Constantin Beelitz RHIM</b>	<b>Key takeaways and closing remarks</b>

*(GA 101058310 - [Refractory Sorting Using Revolutionising Classification Equipment](#) | [ReSoURCE](#) | [Project](#) | [Fact sheet](#) | [HORIZON](#) | [CORDIS](#) | [European Commission](#))*