EU Horizon program: Horizon-CL4-2021-TWIN Transition

Reducing environmental footprint, improving circularity in extractive and processing value chains (IA)

Grant Agreement No 101058310

ReSoURCE

Refractory Sorting Using Revolutionizing Classification Equipment

WP11 Communication & Dissemination

D11.5 Key stakeholders identified

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Document description	The results of the ReSoURCE project will have an impact on many stakeholders in Europe and globally. The report prepared in task T11.2 for this deliverable will describe ReSoURCE mapping activities of EU and non-EU stakeholders, including their identification, assessment and prioritisation and the engagement strategy to enhance their involvement.

Document revision history

Version	**Date**	**Modification introduced**	
		Modification reason	**Author**
V1	10/05/2023	1st version	Crowdhelix
V2	23/05/2023	2nd version	Crowdhelix
V3	30/05/2023	3rd version	Crowdhelix
V4	31/05/2023	Final version for submission to EC	Crowdhelix

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Abbreviations

ECREF - European Center for Refractories

EFFRA - European Factories of the Future Research Association

EIT – European Institute of Innovation and Technology

HEI - Higher Education Institution

KER – key Exploitable results

KPI – Key Performance Indicator

RTO - Research and Technology Organisation

SME – Small and Medium Enterprises

SRM - Secondary Raw Materials

1. Executive Summary

The ReSoURCE project's impact activities are based on a tailored strategy that relies on the engagement of stakeholders who play a key role in the extractive and processing value chains in the “Circular Industry” Helix, a dedicated community populated by members from different areas: RTOs, SMEs and industries, associates, corporates, regulatory and policy makers and investors.
The involvement of the above stakeholders aims to maximise sustainability and facilitate the acceleration of ReSoURCE outcomes beyond the life of the project through direct engagement with targeted domain experts, SMEs and industry stakeholders identified through the stakeholder mapping process described in this document.
However, the process must be seen as a living document that will be regularly updated as the network and engagement of stakeholders evolves with the progress of the project activities.
The purpose of this document is to present the criteria used to identify the stakeholders mapped so far, to describe the general framework within which the activities are planned and to outline the approach to building the roadmap for their involvement.

2. Introduction

The aim of the ReSoURCE project is to enable the overall recycling share in refractory products to be increased by extending the insufficient SRM availability with currently unexploited sources. Theoretically, the share could be increased from the current value of 10% up to 50%.
Combining laser-induced breakdown spectroscopy, hyper spectral imaging with optimised pre-processing and automated ejection can lay the foundation to set a new state of the art for refractory sorting starting from particle sizes down to below 1 mm.
The project wants to ensure the green and digital transformation of the refractory recycling value chain to innovate the full process chain with an AI-supported multi sensor sorting equipment as its core technology.

To achieve this goal, the impact acceleration of the ReSoURCE project is based on the collaboration between:

- Industrial partners focusing on the commercialisation of technology developments, leveraging their technical know-how and core business expertise.
- Research and academic partners supporting the consortium with scientific guidance, research and development activities in their respective fields, as well as expanding their industrial networks and generating valuable know-how.
- The networking partner Crowdhelix will play a crucial role in stakeholder management and networking with other projects and organisations to increase the medium and long-term exploitation potential of the technologies.

In order to support the realisation of the above-mentioned impacts, the analysis of the stakeholders to be involved in the project and a clear strategy for their involvement as the project evolves is essential to ensure the outreach to different groups (such as innovative start-ups, small, medium and large enterprises, as well as research and knowledge dissemination organisations, non-profit organisations and other related economic actors) in order to stimulate fruitful interaction and effectively contribute to knowledge transfer, networking, information dissemination and cooperation.

3. Objective

ReSoURCE addresses one of the major challenges facing the process industries, namely innovative real-time sorting and classification technologies for materials in particulate form.
Although the scope of the project directly addresses a specific industrial application (i.e. sorting and recycling of refractory waste), the methods and tools developed during the project will undoubtedly be useful in many other industrial sectors addressing typical challenges such as sorting and classification of particulate materials, improving process efficiency and product quality, and promoting process circularity.
The knowledge developed in ReSoURCE can be used in many other applications related to the circular economy to address challenges and influence further innovation in the respective industry sectors and to support the recovery of valuable and reusable elements and components from waste streams to ensure process circularity.

The aim of this document is to provide a more detailed overview of the stakeholders to be involved and the mapping methodology.
In particular:

- The identification of EU and non-EU stakeholders;
- Their assessment and prioritisation;
- The engagement strategy to improve their involvement.

4. Methodology

4.1. The stakeholder mapping

The results of the ReSoURCE project will have an impact on many stakeholders in Europe and worldwide.
As such, ReSoURCE stakeholders need to be identified and analysed at an early stage and then managed throughout the life of the project, as they will have a direct impact on the success or failure of the ReSoURCE project.
The following questions arise:

- Who should be invited to participate in ReSoURCE?
- Who are the key actors who have the power to generate impact from the results of ReSoURCE in Europe and internationally?
- Who are the key stakeholders who may or may not contribute to the innovative and impactful outcomes of ReSoURCE?
- What are the barriers, needs and drivers for engaging these stakeholders?

The stakeholder mapping process aims to answer these questions and help the ReSoURCE consortium to identify the key actors in their networks, their relationships, and their drivers and barriers in order to enhance stakeholder involvement and foster engagement.

4.2. Building the Circular Industry community for ReSoURCE

The Circular Industry Helix is a virtual space for knowledge exchange that will act as a network and interaction platform, bringing together a community of 150+ cross-disciplinary and cross-sector organisations across Europe. Due to the cross-cutting nature of the ReSoURCE project, the Circular

Industry Helix is closely integrated with the activities of several other Helix Communities, including Climate, Digital, Manufacturing and Raw Minerals.
The Circular Industry Helix is hosted on the Crowdhelix Platform, a pan-European Open Innovation Network and Technology Platform that profiles and connects universities, research organisations, SME, large multinational corporations, investors, end-users, and other industry stakeholders to collaborate, innovate, and grow.
The network has more than 650 member organisations from 57 countries, with the potential to reach more than 600.000 research and innovation stakeholders from its existing membership base. The network includes all EU Member State countries, and organisations that have collectively won more than €8 billion of research and innovation funding from Horizon 2020. This network, supported by a customised technology platform, AI and machine learning tools, has +45 virtual thematic areas/clusters (called "Helixes"), that cover various research and innovation fields.

4.3. The Stakeholder Mapping Methodology

The methodology for the stakeholder mapping relies on 3 main phases:

- Identification of the stakeholders;
- Analysis of their role and contribution in the engagement process;
- Prioritisation of the stakeholders in the engagement process.

The identification process has taken place since the preparation of the project proposal and a first set of about 36 stakeholders have been identified by M6.
The core group of this first set of stakeholders is mainly based on sister projects (funded under the same call/stream), competitors, a large network of associates and key enablers of innovative technologies in the manufacturing sector.
However, this part of the stakeholder mapping, in particular the clustering with other projects, is essential to involve a highly interested group of stakeholders, to create a common impact in public communication and to raise awareness of the ReSoURCE project.

The process of stakeholders' identification started from 7 main categories listed below (this list is non-exhaustive) and aimed at connecting them with the Key Exploitable Results of the project.

Table 1 - Main stakeholders' categories

Category	Description	Main drivers for engagement
Refractory manufacturers	Stakeholders with interest in ensuring that their products are recycled and reused whenever possible, as this can reduce their raw material costs and environmental impact.	Innovative technologies, lower material costs, lower disposal costs and reduced environmental impact, competitiveness, higher availability of raw materials (available on site), higher quality of secondary raw materials.
Refractory users	They include steelmaking, cement manufacturing, and petrochemical refining.	Reduced cost of refractory materials (when recycled and reused), sustainability of materials (reduced emissions along the supply chain), application of cost reduction incentives, cost reduction (lower material costs).
Refractory recyclers	They are companies or organisations that specialise in collecting, processing, and distributing recycled refractory and they may work directly with manufacturers or end-users to collect and process their waste materials.	Introduction of incentives to develop new technologies or processes that improve the efficiency and cost-effectiveness of recycling.
Regulators and policymakers	European, National and local policymakers, lawmakers, and regulators.	Setting targets for waste reduction or recycling rates, providing funding or incentives for recycling programs, enforcing regulations related to waste disposal and environmental protection.
Environmental and community groups	Associates, Specialists, NGOs.	They may push for innovative regulations or more effective waste reduction targets or provide education and outreach to raise awareness about the benefits of recycling and the environmental impacts of refractory waste.
Tech providers	High-tech companies, university engineering and digital departments	They may be interested in the latest results of ReSoURCE activities related to sorting technologies and may also provide support and advice.
End users of the new applications for waste materials	Potential users of sorted material in alternative products. They will be identified in detail by M24.	This group can include a wide range of potential end users (beyond the refractory sector) who may be interested in using sorted material as an additive component in new materials to add further and enhanced functionalities.

The mapping of the target groups listed above identified a ranked list of stakeholders relevant to the initial objectives of the project, which included:

- **Primary target groups**: EU, (refractory) industry, research institutes, industrial associations, small and medium-sizes enterprises (SME) from the process industry sector.
- **Secondary target groups**: Public bodies at a local, regional, and national level, standardisation bodies, foundations, special media related to industry, digitalisation, innovation, and sustainability topics, young scientists, and young professionals.
- **Tertiary target groups**: Science and research community, educational institutions (e.g., universities and schools), public entities, chambers of commerce and industry, centres/think tanks of economic and/or environmental experts, professional associations, journalists, and general media.

4.4. Stakeholder analysis

The adoption of more sustainable manufacturing practices can help manufacturers reduce their dependence on virgin materials, the amount of waste sent to landfill and the environmental impact of industrial processes (the production of refractories requires significant amounts of energy and resources).

Stakeholders in refractories recycling can therefore vary depending on the specific context and their specific interest in the recycling activity.

The methodology used to identify them started with mapping, in order to:

- Identify those who could benefit from, contribute to and/or be affected by the project.

- Understand the project's existing relationships with these stakeholders (if any).

- Generate strategic actions to the potential value of this network.

The stakeholders listed below will be involved in the networking activities and events on the open innovation platform of the partner Crowdhelix, involving all members of the Circular Industry Helix.

The organisations identified so far are listed in the figure below:

Stakeholders identified

Typology	Name	Description	Sector and Role	
Associate	Made In Europe Partnership	Made in Europe is the manufacturing partnership with the European Commission under the Framework Programme Horizon 2021-2027	Manufacturing	Networking, innovation opportunities
Associate	Clean Steel Partnership	The European Steel Technology Platform (ESTEP) brings together all the major stakeholders in the European steel industry.	Steel industry	Opportunities for testing
Associate	Processes4Planet Co-programmed Partnership	The Processes4Planet aims to transform the EU process industries to achieve circularity and overall climate neutrality.	Cement, Ceramic, Chemicals, Engineering, Non-ferrous metals, Minerals, Pulp & Paper, refining, Steel, Water	Networking, opportunities for testing
Associate	EIT Raw Materials	IT RawMaterials is a key European actor established in 2015 to advance Europe's transition into a sustainable economy.	supply of critical raw materials to the European industry	Networking with SMEs and start-ups, Accelerator, Open Calls
Associate	World Refractories Association	Forum to debate regulatory issues affecting global trade, circulate aggregated industry statistics and promote the interests of the worldwide refractory industry	Refractory materials	Support in regulatory affairs

Typology	Name	Description	Sector and Role	
Associate	Cerame-Unie	Cerame-Unie represents the European ceramic industry. The mission is to ensure that the voice of this competitive, dynamic and innovative industry is heard at the EU level.	Ceramic industry	Networking, opportunities for testing
Associate	ECREF	The European Center for Refractories (ECREF) promotes science and research as well as education and professional training in the field of refractory products throughout Europe.	Refractory sector	Education and training
Suppliers	Several companies identified	Companies dealing with engineering services and solutions for steel and foundry industries.	Innovative technologies for steel and foundry industries	Tech transfer agent
Customer/ end users	Several companies identified	World leader in mineral-based specialties for industry,	Refractory materials	Early adopter
RTO	University of Malaga UMA Laser Lab	Research group specialized in laser processing and analysis of materials (including steel products and processes).	Laser processing and analysis of materials	R&D
RTOs	Several RTOs indentified	Members of the Circular Industry Helix	Technology, engineer, materials	R&D

Figure 1 - Preliminary Stakeholders mapping

The stakeholder engagement strategy aims to connect and strengthen relationships to polarise the interest of the helix community to increase the knowledge of best practices in refractory recycling.

The engagement strategy responds to two main drivers:

- Engage the right category of stakeholders according to the stage of development of the project;

- Engaging stakeholders according to their key interests and motivations.

The main elements that can contribute to stakeholder engagement and that require a tailored and timely approach can be summarised as follows:

- linking them through their main interest in the project (scientific/financial/informational/emotional);
- shaping (in form and time) the messages disseminated through the Circular Industry Helix according to their desire to know about the project's activities and/or results;
- nurture their motivation to engage with the project;
- use the best approach to communicate with them;
- plan the most effective tools to obtain feedback from them.

The above activities are included in the Circular Industry Helix Roadmap, which aims to clearly outline the engagement strategy over time and the contribution expected from each partner, to keep stakeholders engaged throughout the progress of the project.

The roadmap is based on the Power/Interest Matrix, which highlights which stakeholders should be prioritised according to their influence and interest in the project:

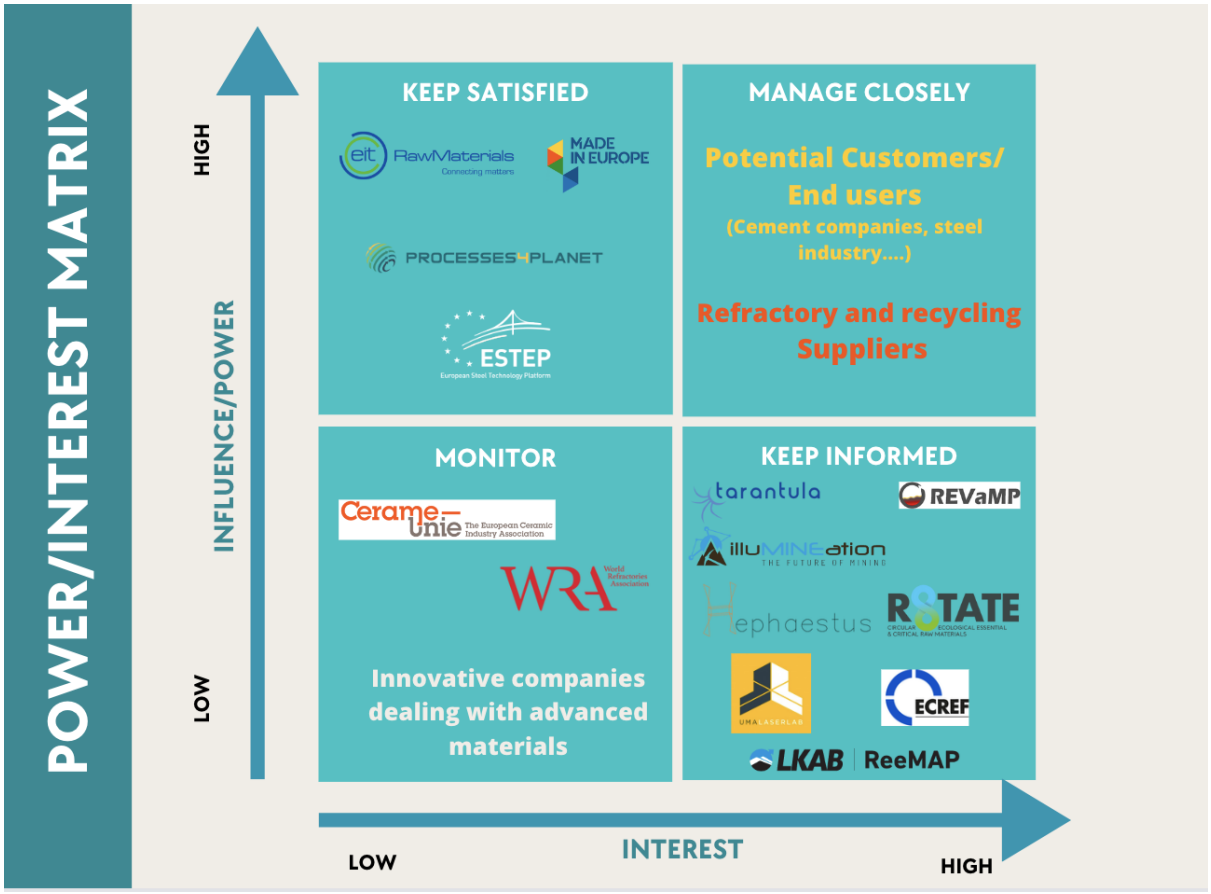


Figure 2 - Stakeholders Power/Interest Matrix

The implementation of the roadmap needs to take in account different elements such as:

- Which role do they play in the value chain?
- How much impact can be leveraged by each of them?
- When in the project are they most influential?

In the Power/Interest Matrix above, the stakeholders shown in Figure 2 are grouped according to the following criteria:

a. **Monitor**: Stakeholders that need to be monitored, to address general communication to keep them up to date with the project and hopefully get them more involved and moving in the right direction (keep them informed). The stakeholders identified so far in this group are Cerame-Unie, World Refractories Association and innovative companies dealing with advanced materials.

b. **Keep them happy**: Stakeholders who need to be engaged and consulted on a regular basis in order to maintain their interest and awareness. Their opinion may be critical to the project. The stakeholders identified so far in this group are suppliers dealing with technologies for the refractory sector, the European Steel Technology Platform (ESTEP), EIT Raw Materials, Processes4Planet (P4Planet) Partnership, the Made in Europe Partnership (EFFRA).

c. **Manage closely**: It's important to build a relationship with this group and engage with them on a regular basis. They are key to the success of the project and every effort should be made to ensure their satisfaction. The stakeholders identified so far in this group are several companies and organizations such as cement companies, potential customers and end-users and suppliers.

d. **Keep them informed**: These stakeholders can be the ambassadors/supporters of our project and can help the project in its development. They need to be involved and informed on a regular basis. The stakeholders identified so far in this group are the sister projects listed in section 6.2.

These elements are the key factors that feed the impact acceleration strategy driven by the Circular Industry Helix:

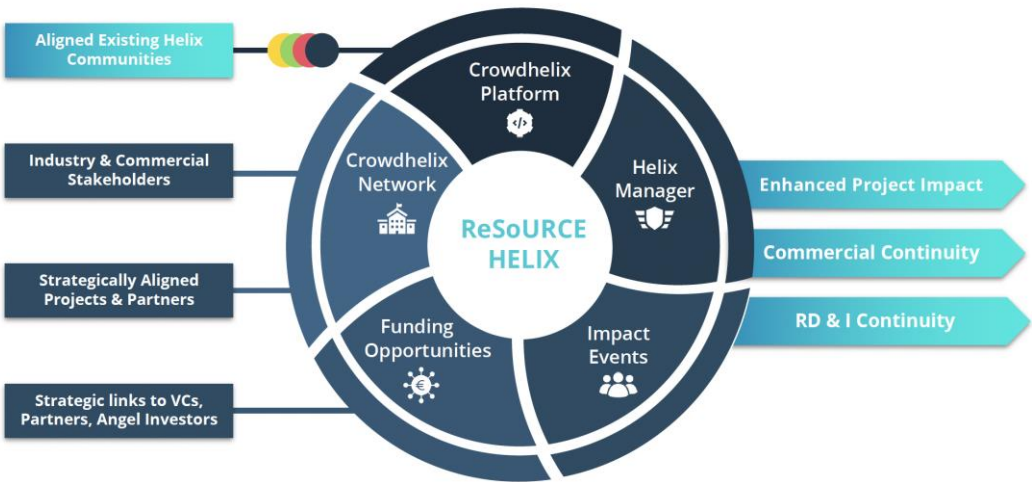


Figure 3 - Crowdhelix impact acceleration strategy – Circular Industry Helix

The Circular Industry Helix will be specifically calibrated to support stakeholder engagement in the project value chain through collaboration, impact, exploitation and strengthening strategic partnerships with EU higher education institutions.

The Helix will provide a feedback loop to help shape the needs, impact, outcomes and shared values of the Circular Industry community through expert stakeholder input.

The Helix community will interact on the Crowdhelix platform and link to other aligned Helixes (such as the Energy Helix, the Raw Minerals Helix, the Materials Helix, the Manufacturing Helix), thus providing continuity of impact for the project.

The key elements of the strategy, in coordination with the communication and dissemination activities and the exploitation strategy, are:

- Targeted exploitation & engagement events
- Access to domain experts, SMEs & industry partners
- Initiating links with VCs, partners & angel investors
- Strategic links with commercial accelerator networks

4.5. KPIs

The Key Performance Indicators of the stakeholders' engagement strategy can be summarised in two main following areas:

Stakeholders' engagement activities - The following metrics are important to keep track of the dynamics in the Helix and to be aware of qualitative and quantitative trends in the Helix community:

a. Number of stakeholders mapped (and categories);
b. Number of stakeholders that joined the Helix;
c. Interaction within the Helix;
d. Events attended.

Open Innovation & Tech transfer opportunities – These KPIs are critical to provide a real insight of the impact created by the project and keep track of the progress made in the exploitation of the KERs:

a. Patents filed;
b. Patent pooling;
c. Licensing;
d. Open innovation initiatives (contests, hackathons);
e. Technology/Solution adopted;
f. By products & New projects.

5. The value chain of refractory materials recycling and the Circular Industry Helix Roadmap

In line with the above objectives, it's important for a successful stakeholder engagement strategy to identify their role in the refractory recycling value chain and plan appropriate actions to keep them involved as the project progresses, working out the best approach to generate impact for each phase of the project.

The stakeholder engagement roadmap can't have a static approach, it's something dynamic that evolves as the project progresses.
However, drafting potential pathways that can address the activities can help to maintain consistency in stakeholder engagement, and that's why it's important to draft a general roadmap according to the objectives to be achieved for each KER that can provide impact to the project.

The detailed definition of the KERs is still in progress, but a first overview (according to Deliverable D11.2 - Initial plan for dissemination, communication and exploitation) in relation to the areas of the KERs can be summarised as follows:

Sensor technologies:

- Spitlight DPSS laser system;
- LIBS process and sensor development (optics, spectrometer);
- Advanced LIBS data analysis
- Multi-sensor sorting: LIBS + HSI + 3D scanner

Sorting process

- System for automated data evaluation and material classification;
- New innovative comminution technologies and their upscaling possibilities (e.g., electrodynamic fragmentation);
- Performances of fines processing;
- Direct sorting method for fine refractory fractions;
- Dust removal method for fine refractory waste;
- Powder handling system for fine refractory fractions;
- Sensor-based sorting methods for fine refractory fractions.

Sorted materials

- Performance of refractories developed based on new sorting qualities.
- Evaluation of performances of sorted materials used in alternative products;

Knowledge

- Life cycle and techno-economic assessment;
- Standardized sampling of bulk material with grain sizes > 120 mm;
- Waste management concept of refractory bricks over Europe;
- Chemical composition and possible end-of-life solutions for refractory bricks and the residues of the recycling process in different industrial sectors..

The exploitation pathways for each KER help define when and how to engage with stakeholders along the value chain and regularly update the Circular Helix roadmap with strategic activities that can trigger the most impactful connections as the project progresses.

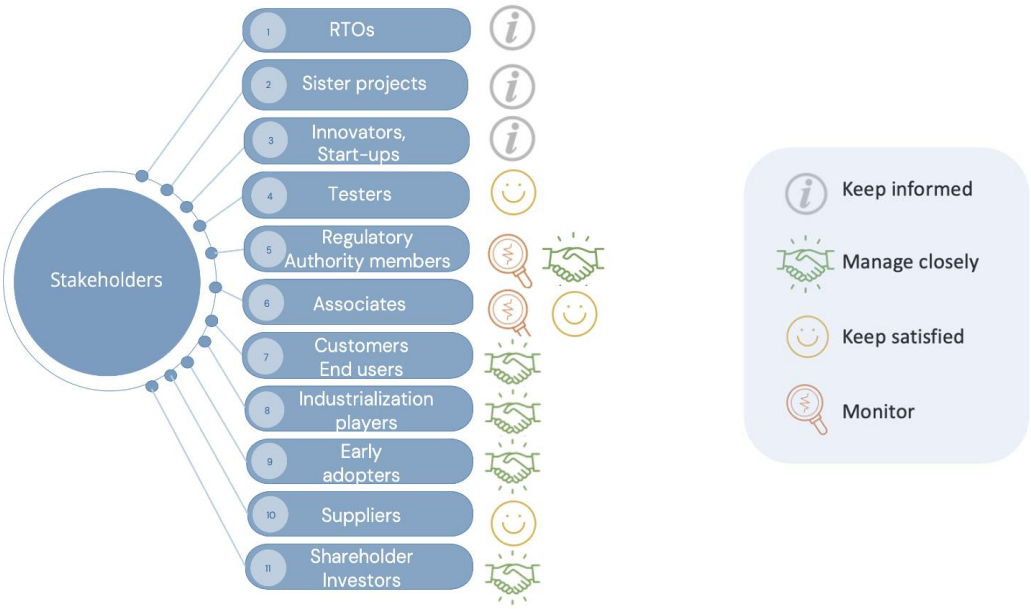


Figure 4 - Stakeholders Value Chain

The general segmentation of stakeholders is a work in progress, and the management of each segment along the implementation of the project, can help to update the Circular Industry Helix roadmap according to the progress and needs of the project.
The following table shows the general approach of the Circular Industry Helix roadmap that will be followed during the implementation of the project:
Each phase of a project should be deepened as the project progresses, with the contribution and support from the other partners.

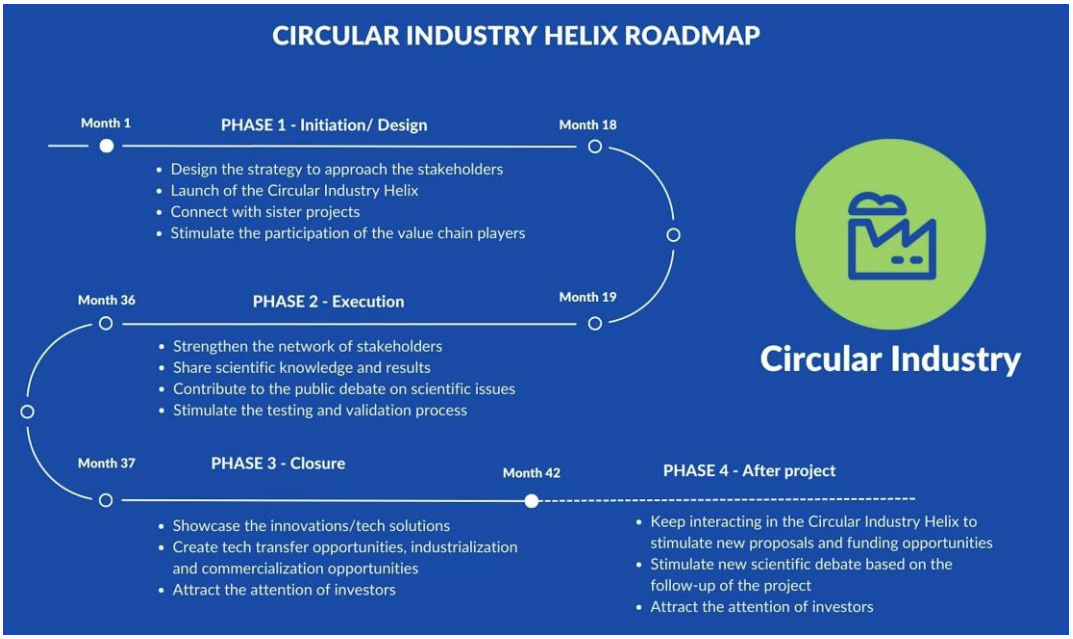
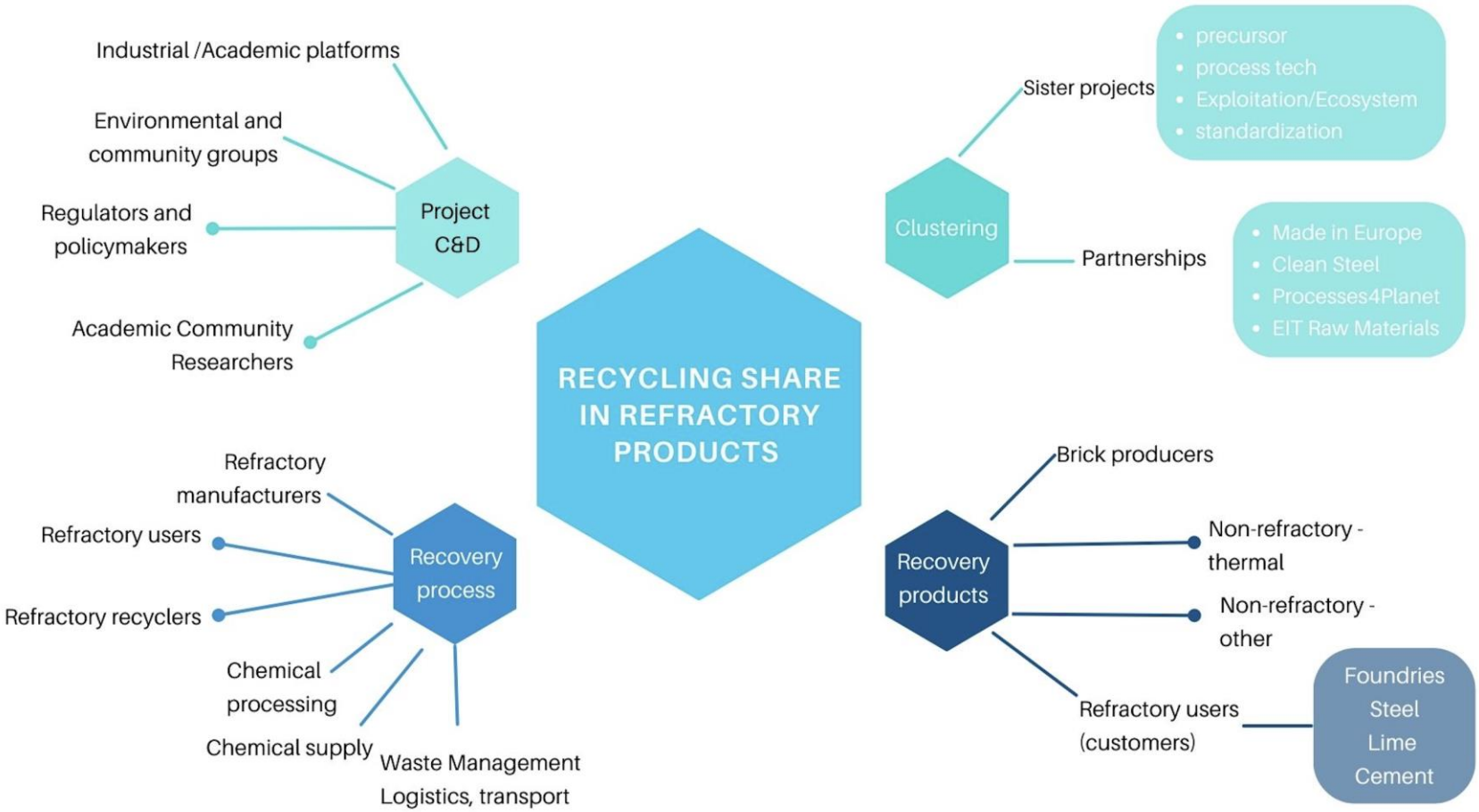


Figure 5 - Circular Industry Helix roadmap

6. Stakeholders mapping diagram



7. Results

7.1. Progress of the Circular Industry Helix at M12

The Circular Industry Helix was launched in November 2022 and has attracted a good number of Experts and Organizations from 35 different countries, as shown in the figure below. The presence of many interested members and the existence of other helixes such as the Materials Helix, the Raw Minerals Helix and the Manufacturing Helix, which focus on areas close to the Circular Industry Helix, helped to increase the interest towards the ReSoURCE project helix.

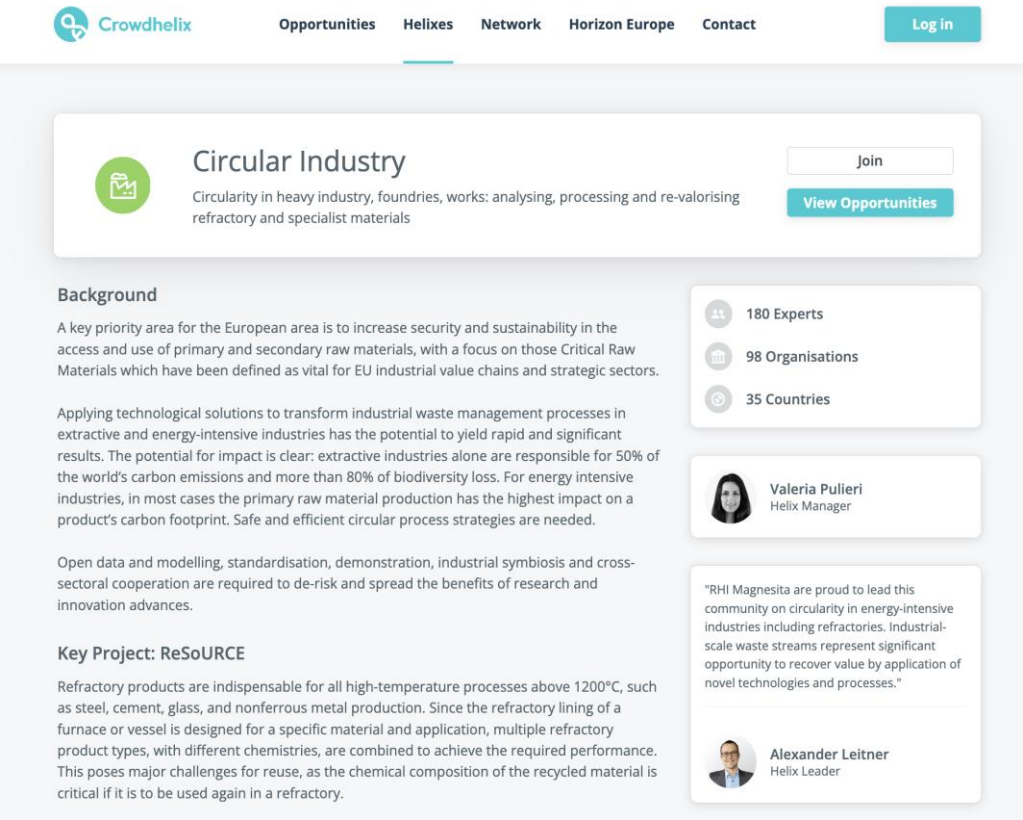


Figure 6 – Snapshot of the Circular Industry Helix (M12)

In M12, the current composition of the stakeholder network is shown in the figure:

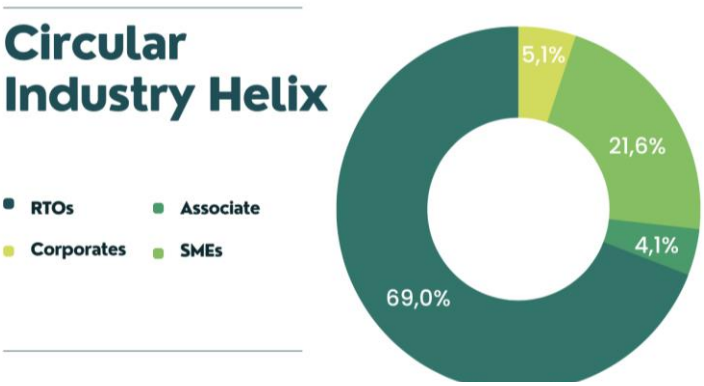


Figure 7 - Percentage of members of the Circular Industry Helix at M12

In recent months, the Helix Manager's and
Helix Leader's promotion of the Helix has helped to raise the profile of the platform, attracting direct

interest from the National Institute of Chemistry of Slovenia and the Instituto Superior Técnico of the University of Lisbon, among others.

The current predominant composition of the Circular Industry stakeholders consists of RTOs and SMEs mainly interested in the fields of circular economy and innovative technologies.

This data is important to strengthen scientific collaboration and knowledge sharing during this phase of the project and to plan accordingly the impact of events that will be of interest to them, but also to introduce more elements from the further development phases of the project (such as life cycle assessment, application of new sorting techniques and use of sorted materials in alternative products) to attract the attention of more key players in the value chain.

7.2. Sister Projects

The networking approach includes activities focused on collaboration with other aligned projects such as those listed in the table below and others (such as COGNITWIN) that will be added as the mapping progresses.

The aim of the networking activities is to polarise the interest of the organisations and the experts of the helix community to increase the knowledge of best practices in refractory recycling.

Networking activities will include joint events with projects funded under the same call and participation in EU/national events organised under national or EU initiatives.

They will:

- Promote the following Horizon EU objectives: RESILIENCE, DUAL TRANSITION;
- Strengthen clustering with extractive waste projects;
- Promote the wider use of the innovative solutions developed in the framework of extractive waste projects and their up-scaling to other sectors and applications.

Thanks to the cluster event with the ROTATE and HEPHAESTUS projects (HORIZON-CL4-2021-TWIN-TRANSITION-01-20) on 20 April, the networking activities have officially started and the contacts with the project will lead to the organisation of a joint event promoted by M18 through the Circular Industry Helix.

Sister projects

Name	Description	Sector
REVaMP	The main objective of the project "Retrofitting Equipment for Efficient Use of Variable Feedstock in Metal Making Processes" (REVaMP) is to develop, adapt and apply novel retrofitting technologies to cope with the increasing variability and to ensure an efficient use of the feedstock in terms of materials and energy.	Retrofitting technologies
SWIRup	SWIRup is a European Commission H2020 project aimed at image sensors for high-resolution earth observation missions in the upper band of shortwave infrared (SWIR).	Image sensor for light with wavelengths up to 2.5 µm.
HARMONI	HARMONI project aims to support the European process industry in identifying and assessing the most relevant standardisation needs, and regulatory bottlenecks that are hampering innovation along their value chains.	Standardization and regulatory needs
Hephaestus	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.	Robotics and autonomous systems use in the construction sector
ROTATE	ROTATE aims to provide environmental solutions that will contribute to facilitate the generation of synergies between diverse industrial sectors related to mining and quarrying.	Mining and quarrying
illuMINEation	IluMINEation project will highlight significant aspects of digitalisation in underground mining activities with the aim of achieving highest possible levels of safety, environmental and economic performance.	IIOT mining sector
DIY4U	DIY4U focuses on digitalizing and transforming European industries and services involved in the formulation, production and supply of particulate and liquid based Fast-Moving Consumer Goods (FMCG),	Product customisation and small-scale manufacturing
LEE-BED	LEE_BED aims to provide: 1. business or technical development assistance; 2. access to pilot lines across the entire value chain, 3. assistance to IPR and patent services	Open Innovation Test Bed
LIFE 5ReFRACT	The LIFE 5REFRACT project planned to design and implement a strategy based on the 5R approach (Reduce-Reuse-Remanufacture-Recycle-Re-educate) for the management of refractory waste generated by the steel industry.	Recycle of refractory waste
RESTAR	The central objective of the project was to increase the competitiveness of the European SME refractory producers by generating up-to-date EN testing standards as a save guidance for the producers	EN testing standards for refractories
REMFRA	The project will develop a process that will allow the valorisation of steelmaking residues, which will be tested and validated in an industrial-scale demonstration plant.	Circularity and sustainability in the EU steel industry

8. Next steps

- Develop specific stakeholders' engagement pathways for each KER with the collaboration of the consortium and accordingly to the exploitation plan;
- Achieve direct engagement with value chain organisations (targeted experts, SMEs and industry stakeholders);
- Schedule in detail the clustering and collaboration activities with strategically aligned EU projects through knowledge exchange events;
- Outreach co-programmed partnerships, government regulators and EU policy stakeholders.

9. Conclusions

Stakeholder engagement through the Circular Industry Helix aims to build a robust community that will work together over time. However, building a functional and sustainable community takes time and the work ahead aims at qualitative outcomes that can contribute to the growth and implementation of European policies in the areas of Raw Materials Resilience, New Industrial Strategy, European Green Deal and Digital Europe.

The ReSoURCE consortium embodies cross-sectoral knowledge that will be a very valuable benchmark and reference point for the entire stakeholder ecosystem: the ReSoURCE project provides a comprehensive approach that considers different technological solutions, the waste management system and includes business and organisational models.

Furthermore, the project can generate a relevant impact on products and services already on the market, and its outcomes can be greatly amplified stimulating the interactions between individual actors, legal and economic frameworks, material quality and technology performers.

Raising awareness and sharing knowledge through a powerful tool such as the Circular Industry Helix is a key element in generating impact in the refractory recycling sector and promoting relevant benefits to the environmental and climate footprint of the refractory industry.