

RESQTOOL

NEWSLETTER



Dear partners, stakeholders, and followers of RESQTOOL,

I am delighted to introduce the third edition of the RESQTOOL newsletter, covering the intense period from Month 14 to Month 22, which concluded our first official Reporting Period. I'm incredibly proud of the progress detailed here, confirming RESQTOOL's critical role in advancing a circular hardmetal industry in Europe.

The major highlight was our Fourth General Meeting and interim assessment in June 2025 in Jyväskylä, Finland. Joined by our Project Officer and an external Evaluator, we showed the consortium's formidable technical strength. We confirmed tangible breakthroughs: the successful demonstration of automated, AI-based robotic systems for sorting small-sized mixed HM scraps (WP2), and the pilot-scale implementation of biochemical and zinc-based recycling processes (WP3). These processes are showing promising recovery rates for tungsten (W) and cobalt (Co). Our Life Cycle Assessment (LCA) work (WP6) has already confirmed the environmental benefits of using recycled feedstock, a finding crucial to meeting the EU's Critical Raw Materials Act (CRMA) targets. The external assessment confirmed we are firmly on track to strengthen European resilience in Critical Raw Materials (CRMs).

In the «Technical Shorts» section, you can explore how AI and robotics are set to replace tedious manual sorting, dramatically increasing recycling efficiency. Our LCA work supports the CRMA's goal of 25% recycling by 2030, revealing a critical gap: while the recycling rate for tungsten is 53% in Europe, domestic processing is only about 19%. This gap underscores the vital importance of RESQTOOL scaling up processes like the optimized Zinc Reclaim technology, where GTP Finland is achieving excellent results.

Kenan Boz (EPMA), RESQTOOL coordinator

PREVIOUS NEWSLETTERS

Catch up on past issues! You can download all our previous newsletters directly from our website here: <https://www.resqtool.eu/documents/>



Co-funded by
the European Union

This project has been funded with support from the European Commission.
This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project: 101138144 | HORIZON-CL4-2023-RESILIENCE-01-05

TABLE OF CONTENTS



NEWS FROM RESQTOOL	3	Plansee Seminar	9
Activity from Month 14 to Month 22	3	Summer School 2025	10
D6.1 - Hardmetal Market Streams	3	Clustering Workshop “Primary and Secondary Raw Materials: How Can Europe Reduce Scarcity Risks and Boost the Green Transition” (Glasgow, UK, 14th Sep 2025)	11
Internal Meetings	3	Euro PM2025 (Glasgow, UK, 14th-17th Sep 2025)	14
Fourth General Meeting, and Review Meeting, of RESQTOOL (Jyväskylä, Finland)	3	Business Networking Day (1st Oct 2025)	17
TECHNICAL SHORTS	5	UTIS Conference (Kemer, Türkiye, 30th Oct - 2nd Nov 2025)	18
TS05: Automated Sorting Progresses	5	Raw Materials Week 2025	19
TS06: Market and Life Cycle Analysis of the European Hardmetal (Cemented Carbide) Sector	6	Hagener Symposium Pulvermetallurgie (Hagen, Germany, 27-28th Nov 2025)	20
Why We’re Doing This	6	Upcoming Events	20
What We’re Doing	6	1st RESQTOOL Free Training Webinar (5th Dec 2025)	20
Progress and Key Findings So Far	7	SummerEv (6th-7th May 2026)	21
Next Steps	7	World PM2026 (Montreal, Canada)	21
TS07: Activities on Zinc Reclaim Recycling	8	RESQTOOL TEAM TOUR	22
Overview of Activities	8	Phoenix Surowce	22
Key Activities and Achievements	8	TEMSA	23
Challenges and Mitigation	8	KEEP IN TOUCH WITH RESQTOOL	24
Next Steps	8		
RESQTOOL EVENTS	9		
Workshop at the IIS “Cobianchi” (Premosello-Chiovena, Italy)	9		

ACTIVITY FROM MONTH 14 TO MONTH 22

We are continuing our review of the project's progress.

We are submitting, just as we write this newsletter, nine new deliverable reports (due date 30th November). Because if the timing and the fact they are still being prepared while we compile this publication, we cannot comment on them here. We will have to postpone their summary to the next occasion, in a few months... We can only summarise here one deliverable, that we had prepared for the end of May 2025 and that was a large effort.

D6.1 - HARDMETAL MARKET STREAMS

Our partner, IMR, has completed a comprehensive Market and Life Cycle Analysis (LCA) of the European hardmetal (cemented carbide) sector. This crucial work mapped the flow of Tungsten (W) and Cobalt (Co) — from initial extraction through processing, production, and final recycling. The insights gained will be vital for reducing the sector's environmental impact and significantly strengthening Europe's material resilience for these Critical Raw Materials. Dive deeper into the findings in Technical Short TS06, just a few pages below!

INTERNAL MEETINGS

On 11-13 June 2025 our fourth general meeting took place in Jyväskylä, Finland, hosted by our partner GTP Finland, formerly Tikomet (the partner profile can be found in the RESQTOOL Team Tour section issue #2 of this newsletter). As it coincided with the end of our project's first Reporting Period, our Project Officer from the funding agency HaDEA and the Project Evaluator nominated by them joined our group to carry out an interim assessment of our progress. In fact, for the sake of funding formalities, Horizon Europe projects' activities are normally split into 3 periods, after each of which the technical and financial advancements are evaluated and costs are refunded.



Figure 1 | Kick-off of day 1 of the TM4 meeting in Jyväskylä, with the presence of the EU project officer and the external evaluator

The meeting brought together all academic and industrial partners for two intensive days of technical discussions, progress reporting, and strategy alignment in the areas of recycling, circularity, and traceability of hardmetal tools. Representatives from the European Commission and an independent expert also attended, highlighting the project's strategic importance within the EU's circular materials framework.

Key topics included updates on scrap collection and sorting (WP2), where automated and AI-based robotic systems for separating small-sized mixed HM scraps were demonstrated, and on biochemical and zinc-based recycling processes (WP3), which reached pilot-scale implementation with promising recovery rates for cobalt and tungsten. The partners also discussed the progress of demonstrator trials (WP5) and life cycle assessments (WP6), confirming tangible environmental benefits when using recycled feedstock. Further sessions covered the implementation of laser data-matrix coding for tool traceability and the development of an IPR and circular business model under WP8.

Beyond the technical sessions, partners had the chance to strengthen collaboration and informal exchange during a boat cruise on the Jyväskylä harbour (Figure 2), offering a relaxed setting to celebrate the achievements of the first project period.

The meeting concluded with a plant visit to GTP's recycling facilities (Figure 2, left), offering participants a first-hand view of industrial-scale processes for reclaiming critical raw materials. Strong collaboration across partners and alignment on exploitation planning marked our fourth consortium meeting as a decisive step toward achieving RESQTOOL's objectives of strengthening European resilience in critical raw materials and advancing sustainable production cycles for hardmetal tools.

The next meeting is already organised to happen soon, on 1-2 December 2025, at the premises of our partner Fraunhofer IKTS Dresden. You will read about it in the next issue of this newsletter.



Figure 2 | Left: Consortium visit to GTP's recycling and production facilities ; Right: Consortium members during the evening boat cruise on the Jyväskylä harbour

TECHNICAL SHORTS

In this section consortium partners provide some technical info to dive deeper into some important topics related to the RESQTOOL project. In this issue, we go over 3 different topics: the sorting of used tools by a newly developed sorting line, the analysis of the supply chain for hardmetals, and the work carried out on the zinc reclaim process.

TS05/ AUTOMATED SORTING PROGRESSES

The RESQTOOL project addresses the entire value chain of hardmetal tool recycling and production. Tools at the end of their life are collected and sent to professional metal scrap companies where the initial recycling operations take place. The first operation is sorting, due to the variety of materials and metals the tools are composed of. Sorting allows the segregation of mixed hardmetal scraps into uniform material groups, which is essential for the metals recycling operations carried out in specialized plants and processes. Currently, sorting is carried out partially by mechanical operations, but the final sorting is a manual, tedious, and boring process for employees.



Figure 3 | Mixed hardmetal scraps

That is why this aspect is also addressed in the RESQTOOL consortium, where Phoenix Surowce, together with Stadler, is developing a robotized solution that uses Artificial Intelligence and vision systems to allow automated sorting of hardmetal scraps. Applying automated and robotized solutions to sort highly variable hardmetal scraps is challenging due to the wide range of shapes, colors, sizes, wear marks, and other physical differences present on used tools. Additionally, the variety of hardmetal tools is extremely wide, which increases the randomness of the scraps that have to be sorted.

In Work Package 2, Phoenix Surowce is developing an AI-based vision system for the identification of selected groups of scraps, allowing their sorting by robotic means. This way, the exhausting and boring human labor will be replaced by automation and robotics, freeing up valuable employee time for other activities in the company. Robotized sorting allows continuous operation, easy increase in sorting throughput, and adaptation to changing sorting requirements. That is why this approach was selected to address this first, but most important, step in hardmetals recycling and efficient recovery.

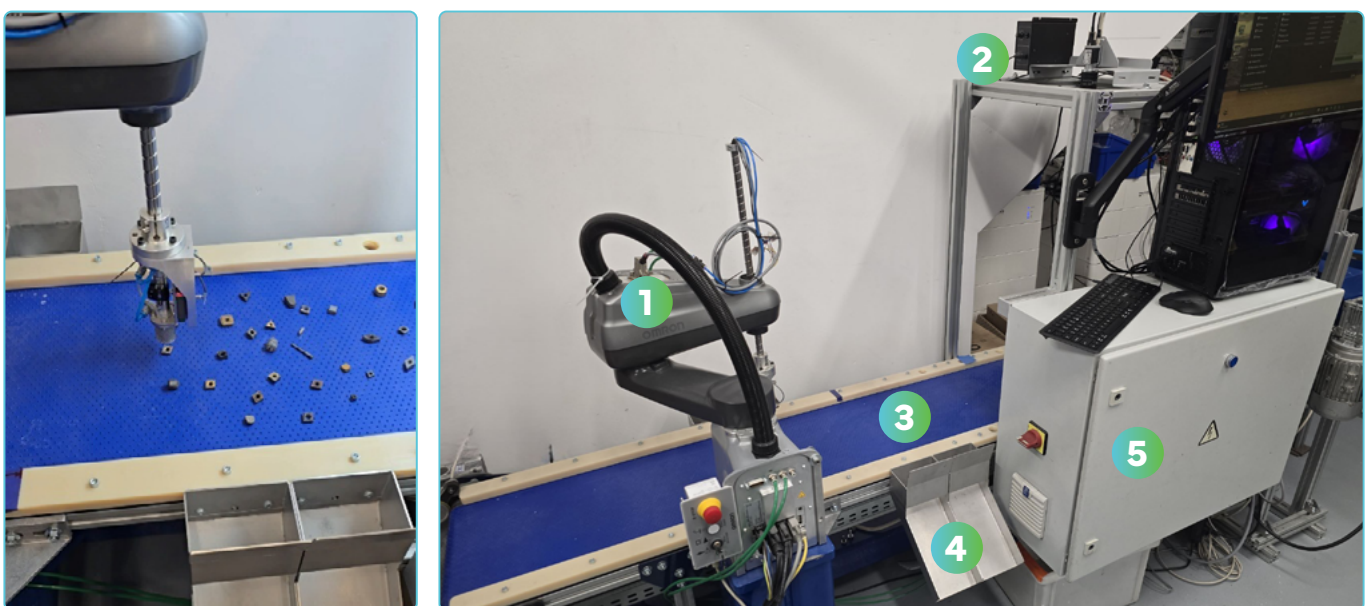


Figure 4 | Robotized sorting stand developed by Phoenix Surowce: 1 – Robot with gripper for picking up the selected scraps (also in left picture); 2 – Vision system with camera, and light; 3 – Conveyor belt for scraps transportation; 4 – collection boxes for segregated scraps; 5 – Control and electrical cabinet; 6 – Feeding system; 7 – PC computer for control and HMI

To implement the robotized sorting operation, Phoenix Surowce has developed a vision system, which is collecting pictures of hardmetal scraps. Based on this data, the AI models are being trained and verified to provide information for the sorting operations. Next, robots equipped with specialized grippers (also being developed during this task) are programmed to pick identified hardmetal scraps and segregate them into programmed groups. Figure 4 presents part of the Phoenix developed test stand, with a conveyor belt, vision system, PC, control cabinet, and robot, which allows tests and software development for carrying out the sorting operations in an automated way.

Current work focuses on the training and testing of the AI models, tests of the robots, transport operations, feeding and handling of the hardmetal scraps, increasing accuracy, and throughput, developing interfaces, and finalizing the robotized sorting system design.

TS06/ MARKET AND LIFE CYCLE ANALYSIS OF THE EUROPEAN HARDMETAL (CEMENTED CARBIDE) SECTOR

The RESQTOOL Project is advancing its sustainability assessment through a comprehensive market and life cycle analysis of the European hardmetal (cemented carbide) sector — an industry vital to Europe’s high-precision manufacturing and engineering landscape. This work focuses on understanding how tungsten (W) and cobalt (Co) — two critical raw materials — move through extraction, processing, production, and recycling stages, and how these flows can be optimised to reduce environmental impacts and strengthen Europe’s material resilience.

WHY WE’RE DOING THIS

Europe’s dependence on imported tungsten and cobalt presents a major supply chain vulnerability. With over 80% of global tungsten mining and processing concentrated in China, recent geopolitical shifts — such as new U.S. tariffs and Chinese export controls — have driven price volatility and supply disruptions. In response, the EU has introduced the Critical Raw Materials Act (CRMA), targeting 10% domestic extraction, 40% domestic processing, and 25% recycling for the aggregate EU strategic raw materials and critical raw materials by 2030.

RESQTOOL directly supports these goals by generating a robust sustainability framework and evidence base to guide policy, industry, and recycling innovations within the European hardmetal market.

WHAT WE’RE DOING

The team has completed a detailed market segmentation of the hardmetal value chain, dividing it into seven core activities — from raw material extraction to recycling and losses management. This structure allows for a systematic understanding of environmental performance and market dynamics across each stage.

A Life Cycle Assessment (LCA), developed under ISO 14040 and ISO 14044 standards, is underway to quantify environmental impacts and identify “hotspots” along the supply chain. The scope covers all cradle-to-gate processes relevant to WC-Co tool production in Europe for both Tungsten and Cobalt, focusing on both virgin and secondary (recycled) material streams. Four representative case studies are being assessed, each reflecting different material compositions, recycling routes, and technological variations.

These will enable comparison between conventional production and emerging circular solutions such as zinc reclaim and chemical recovery technologies—both key to achieving the EU’s circular economy objectives.

PROGRESS AND KEY FINDINGS SO FAR

- The project has mapped the European tungsten and cobalt supply chain, identifying key extraction, processing, and recycling nodes.
- Preliminary analysis shows that 77% of EU tungsten extraction originates from Austria, Portugal, and Spain, but only ~19% of processing occurs domestically — highlighting a critical dependency on imported refined materials.
- Recycling rates for tungsten have improved, now contributing an estimated 53% of the European supply, though recent disruptions have exposed vulnerabilities in secondary material stocks.
- A comprehensive process flow diagram (PFD) and market segmentation model have been developed, forming the backbone for sustainability assessment and subsequent data collection.

NEXT STEPS

The next project phase focuses on identifying all intermediate and elementary flows — including materials, energy, emissions, and waste — across each unit process. This will lead to the creation of a detailed data collection plan, ensuring every dataset aligns with ISO 14044 requirements for completeness, consistency, and representativeness. Each data stream will be assigned to consortium partners for validation and benchmarking against established databases and literature.

By integrating market intelligence, environmental metrics, and life cycle modelling, the RESQTOOL project is building a transparent and data-driven foundation for sustainable raw material management. This work not only supports Europe's transition toward resource autonomy and circularity but also positions the hardmetal industry as a benchmark for sustainability-driven innovation in critical raw materials.

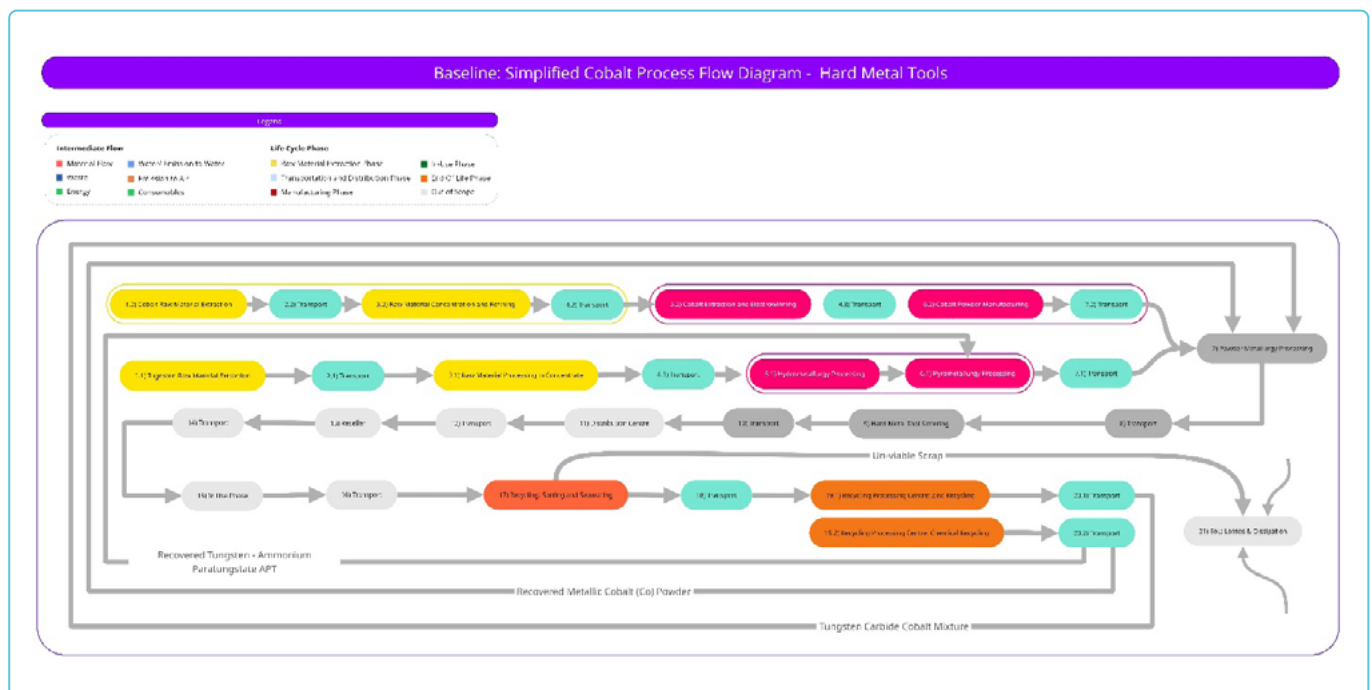


Figure 5 | Global chart of the hardmetal supply chain, cradle to grave including recycling and value chain losses, focusing on tungsten and cobalt

TS07/ ACTIVITIES ON ZINC RECLAIM RECYCLING

OVERVIEW OF ACTIVITIES

GTP Finland Oy (TIKO is the acronym we still use in the project, linked to the original name of the company, Tikomet) is responsible for advancing the Zinc Reclaim process for recycling hardmetal (HM) scrap, particularly WC-Co materials, to recover critical raw materials (CRMs) such as tungsten and cobalt. The company brings industrial-scale expertise to the project.

KEY ACTIVITIES AND ACHIEVEMENTS

Zinc Reclaim Process Optimization

GTP Finland has initiated modifications to its zinc reclaim furnace system to increase energy efficiency and decrease the cycle time. Modelling dust exposure and drafting a ventilation strategy are ongoing efforts to reduce employee exposure to dust.

Recycling Trials

GTP Finland has conducted multiple recycling trials using HM scrap provided by Stadler and other partners. WC-Co powders produced from sorted scrap have been delivered to CEIT and IKTS for characterization and validation. Initial results show promising properties, with <50 ppm Zn content in reclaimed powders. Effects of zinc traces into HM properties have been studied and results have been published in the Plansee Seminar 2025. Further investigations are planned, to study the effects during the sintering.

CHALLENGES AND MITIGATION

Despite high processing capacity, scrap availability remains a limiting factor. GTP Finland is working with Stadler and other partners to improve collection and sorting efficiency. Rising electricity prices due to increased demand and renewable integration are being addressed through process redesign and energy recovery strategies.

NEXT STEPS

In the future months, the work will be focused on:

- Finalizing furnace modifications for energy recovery
- Scaling up recycling trials with optimized scrap input
- Supporting project's Work Package 4 (characterization & validation) and Work Package 5 (Re-use & Functionality assessment) with powder samples for tool manufacturing and performance testing



Figure 6 | Left: Dust exposure is one of the key aspects of treating hardmetal; Right: Typical mix of end-of-life hardmetal tools, with coated and uncoated grades, different shapes and size

WORKSHOP AT THE IIS "COBIANCHI"

(Premosello-Chiovenda, Italy)



Figure 7 | The students visiting the recycling plant being built within the RESQTOOL project at OMCD TEKHUB

An event that we had not reported about in the previous newsletters: a training workshop organised by our partner OMCD TEKHUB (formerly FILMS) was carried out on 14th April in the Secondary School "Cobianchi", in Premosello Chiovenda (Italy), a school with several technical courses, including chemistry and materials.

During the day, G.P. De Gaudenzi of OMCD TEKHUB talked about RESQTOOL to a group of students at the institute. The group had then the chance of visiting the recycling plant being built at OMCD TEKHUB premises.

PLANSEE SEMINAR

RESQTOOL was recognized at the 21st Plansee Seminar, the prestigious, expert-led meeting on hard and refractory materials held by the Austrian company Plansee in Reutte on June 1-6, 2025. T. Karhumaa (GTP Finland) was invited to present RESQTOOL's insights on "Hardmetal Recycling: Challenges and Opportunities".

More than 200 presentations have been made during the seminar, where the main focus was on Sustainability, particularly recycling and Critical Raw Materials, thus along RESQTOOL's own focus. Due to an exceptionally high number of registrations with more than 500 participants, the organisers have stated that registration was closed before the foreseen deadline. Next event will be held in 2029.



Figure 8 | T. Karhumaa speaking at the Plansee seminar

SUMMER SCHOOL 2025

RESQTOOL was present at the 23rd Residential PM Summer School organised by EPMA in Lund (Sweden) from 22nd to 27th June 2026.

This school is organised by EPMA, our coordinator, since 1998. It is a very popular intensive week where participants receive comprehensive instruction on powder metallurgy technologies and materials. The program combines direct lectures from outstanding industry and academic speakers with practical lab experiences organized at the host location, which changes annually. This year some more room was given in the school to the hardmetal, cutting tools and machining topics, as this is the expertise of the department of the Lund University that hosted the school. The project was featured in multiple presentations, starting with a mention by B. Vicenzi (EPMA) during the introductory talk on June 23rd. The team's work was then detailed in a demonstration talk on June 27th, given by S. Norgren (Lund University/Sandvik) and S. Moseley (Hilti). To ensure everyone received the information, they spoke to the trainees (62) in two separate sessions, explaining the practical aspects, goals, and significance of our work, with the help of project materials (roller banner and samples).

A similar participation is already under preparation for the next edition, that will take place next year in Porto (Portugal), in July.



Figure 9 | S. Norgren and S. Moseley addressing the trainees at the EPMA Summer School in Lund

CLUSTERING WORKSHOP (Glasgow, Uk, 14th September 2025) /

"PRIMARY AND SECONDARY RAW MATERIALS : HOW CAN EUROPE REDUCE SCARCITY RISKS & BOOST THE GREEN TRANSITION"

RESQTOOL / BLOOM Clustering Workshop "Primary and Secondary Raw Materials: how can Europe reduce scarcity risks and boost the Green Transition"				
Sunday, 14th September 2025				
8:30	9:00	Participants admission		0:30
9:00	9:10	Welcome and Host presentation	Bruno Vicenzi (European Powder Metallurgy Association) - Marko Komac (International Raw Materials Observatory)	0:10
Part 1: Scenarios				
9:10	9:30	UK's place in the critical minerals supply chain towards Net Zero	Enzo GRANZELLA - Critical Mineral	0:20
9:30	9:50	Foundational but at risk: the EU CRM agenda at a crossroads	Ludivine WOUTERS - Latitude Five	0:20
9:50	10:10	U.S. Critical Minerals Dynamics: Policy Aspirations vs. Market Realities vs. Market Warping	Christopher KEANE - International Raw Materials Observatory / American Geosciences Institute	0:20
10:10	10:30	Establishing a Resilient European Permanent Magnet Supply Chain: Challenges and Strategic Opportunities	Nabeel MANCHERI - EIT Raw Materials	0:20
10:30	11:00	Coffee break / networking		0:30
Part 2: R&I contributes				
11:00	11:10	RESQTOOL Project: Recycling of High Quality CRM Resources from Machining Tools for Re-use Applications"	Jakub Szatatkiewicz - Phoenix Surowce Sp. z o.o.	0:10
11:10	11:20	BLOOM project - Liberation analysis for optimizing extraction and processing of CRMs	Marko Komac - International Raw Materials Observatory	0:10
11:20	11:30	Data-Driven Titanium Production: Reducing Scarcity Risks and Environmental Impacts through Predictive Analytics and Lifecycle Management in EURO-TITAN	Rosanna Babagiannou - SMART AI SOLUTIONS	0:10
11:30	11:40	Mining with Responsibility: How REESOURCE Advances Europe's Primary Raw Materials Supply Through Innovation, Social Awareness, and Environmental Responsibility	Duygu Yilmaz - IFE	0:10
11:40	11:50	STARTing the Future: Transforming Mine Waste into Sustainable Energy Harvesting Materials	Filipe Neves - LNEG	0:10
11:50	12:00	REPTIS Project: Responsible Extraction and Processing of Titanium and other Primary Raw Materials	Christian Kukla - Montanuniversität Leoben	0:10
12:00	12:10	Recycling of NdFeB magnets in Europe: a review of research activities	José Manuel Martin Garcia - CEIT	0:10
12:10	12:20	MAGELLAN Project – Make, Use, Recover : actions for high-performance permanent magnets	Alexandre Damiens - Orano	0:10
12:20	12:30	PERSEPHONE – Autonomous Exploration and Extraction of Deep Mineral Deposits	Marko Komac - International Raw Materials Observatory	0:10
12:30	12:40	Long-loop recycling of magnets to produce separated, high purity Rare Earth Oxides	Thomas Kelly - Ionic Technologies	0:10
12:40	13:40	Buffet lunch / networking		1:00
Part 3: Roadmap to 2030				
13:40	14:55	Round Table Discussion: "CRM Act and 2030: where are we?"	Moderator: M. Komac - International Raw Materials Observatory	1:15
14:55	15:00	Recap and End		0:05

Figure 10 | Full programme of the RESQTOOL/BLOOM clustering workshop

We joined forces with the BLOOM Project (website) to organize a free, high-impact workshop on Critical Raw Materials (CRM). This event, titled «Primary and Secondary Raw Materials: how can Europe reduce scarcity risks and boost the Green Transition», took place in Glasgow on Sunday, September 14th, 2025, at the Crowne Plaza Hotel. Its location and date were chosen so that participants had the chance of joining the participation in this event with the opportunity of joining the subsequent Euro PM2025 Congress & Exhibition.

The core focus of the workshop was to examine strategies for reducing the scarcity risks of Critical Raw Materials and furthering the Green Transition. This included comparing the policies and approaches currently being implemented for primary and secondary materials across various geopolitical regions. Furthermore, for us it also was the chance of meeting similar projects, to establish links for possible future collaborations, that is the basis of the “clustering” concept.

The intensive 9 AM to 3 PM program was divided into three core segments:

- **Scenario Presentations from invited experts**
- **Research and Innovation Contributes from ten different research and industrial projects**
- **A final Round Table discussion, moderated by Marko Komac (BLOOM), focusing on «CRM Act and 2030: Where are we?»**

We began by comparing the CRM policies of the EU, UK, and USA, and the status in the specific sector of permanent magnets, then reviewed project activities aimed at mitigating scarcity risks and advancing the Green Transition. The Round Table then closed the meeting by delving into the situation across many different countries. For a summary of the latter, we recommend reading it on the EPMA website [1].

Our project was presented by J. Szałatkiewicz of Phoenix Surowce (Figure 11). If we could condense the entire discussion into a single sentence, it would be this: **“We need more action for the CRM, we need it now and it must be quick, efficient and coherent!”**

The event was free to attend. With about 30 participants, it featured a high volume of Q&A that continued during the breaks, fostering great networking and creating opportunities for future collaborations.

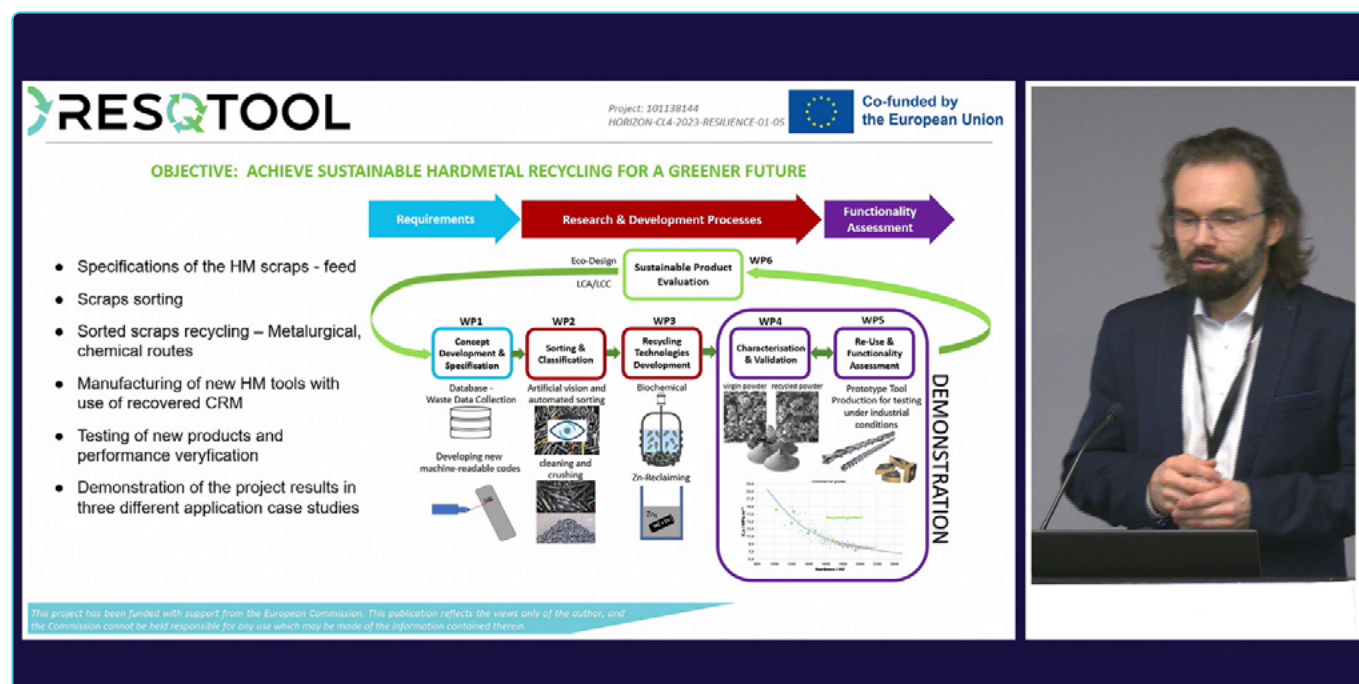


Figure 11 | J. Szałatkiewicz (Phoenix Surowce) during his presentation on the RESQTOOL project at the clustering workshop

[1] <https://www.epma.com/resqtool-and-bloom/>

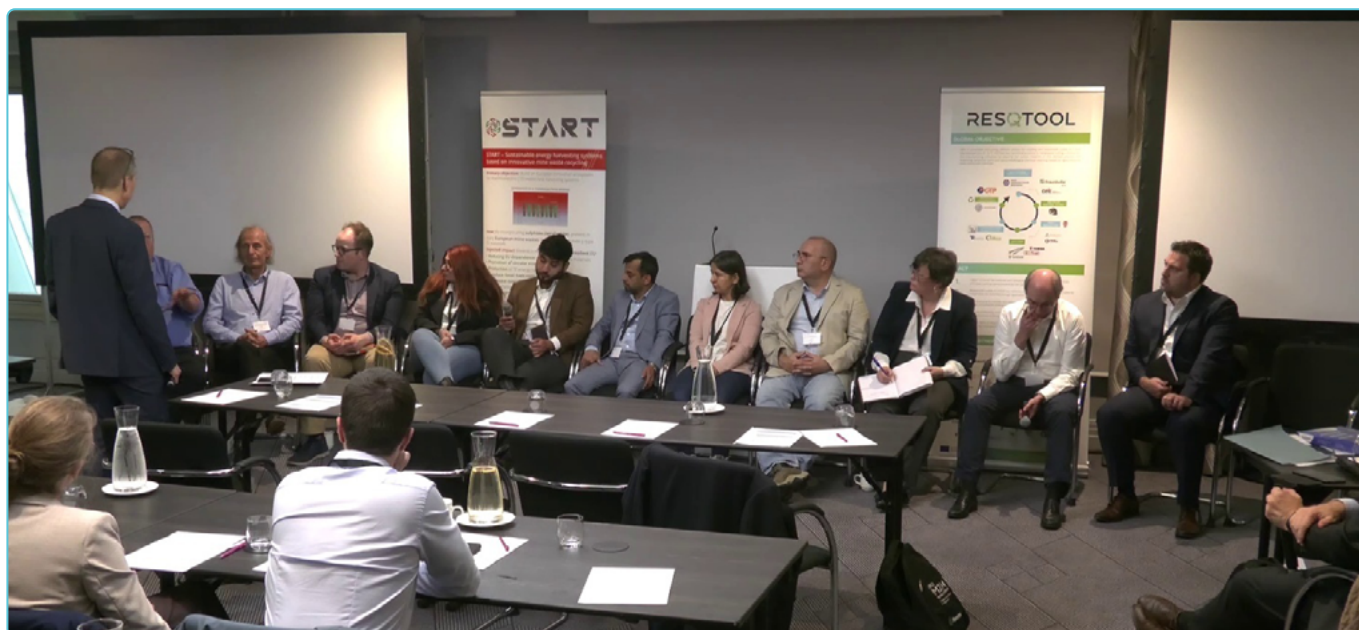


Figure 12 | The final panel discussion



Figure 13 | The group of participants in the RESQTOOL/BLOOM workshop

The workshop was videorecorded, and the full footage is now available [2]; we have created a dedicated playlist on the RESQTOOL YouTube channel that includes all three parts of the event.

Be sure to leave a «thumbs up» comment, and subscribe to our channel while you are there!

[2] https://www.youtube.com/watch?v=j9YWILK4MPg&list=PL-Ncc8xQMKW4LqadQDixVcfWWSsir_Ytc

EURO PM2025

RESQTOOL took part in Euro PM2025 in Glasgow (UK), 14th to 17th September 2025 with a booth in the exhibition, but also with active participation in two sessions related to Critical Raw Materials.

The conference, organised every year by EPMA, stands out as the premier European event for the Powder Metallurgy (PM) industry. It is known for its content on hard materials, which forms a significant part of its technical program. Researchers and professionals specializing in hardmetals consistently account for a large portion of the presented technical papers and the overall participant attendance, highlighting the event's importance as the central venue for sharing specialized knowledge in this field.

We set up a stand in the dedicated EU projects area, collaborating with other projects managed by EPMA (START and REPTIS). The stand featured all our available materials — a rolling video, leaflets, posters, and a banner — along with a host of illustrative samples. Visitors were able to see cutting tools, scrap tools at different phases of the recycling process, as well as reagents, intermediate products, and final recycled powders.



Figure 14 | The RESQTOOL booth at Euro PM2025

CRITICAL RAW MATERIALS CORNER				
Monday, 15th September 2025				
13:45	13:47	Welcome	Hamid Yousefi - European Powder Metallurgy Association / REPTIS	0:02
13:47	13:55	RESQTOOL Project: Recycling of High Quality CRM Resources from Machining Tools for Re-use Applications	Jakub Szałatkiewicz - RESQTOOL Project / Phoenix Surowce Sp. z o.o.	0:08
13:55	14:03	BLOOM Project: Liberation Analysis for Optimizing Extraction and Processing of CRMs	Marko Komac - BLOOM Project / INTRAW	0:08
14:03	14:11	EURO-TITAN Project: Decarbonized Titanium Recovery from Aluminium and Titanium Production Residues	Beate Orberger - Euro Titan / Catura	0:08
14:11	14:19	REESOURCE: Securing Critical Raw Materials for Europe Through Responsible Mining Innovation	Duygu Yilmaz - REESOURCE / IFE	0:08
14:19	14:27	The ReeMAP Project for extraction of Critical Minerals	Pär Jonsen - ReeMAP Project / LKAB	0:08
14:27	14:35	START Project - Sustainable Energy Harvesting Systems Based on Innovative Mine Waste Recycling	Filipe Neves - START Project / LNEG	0:08
14:35	14:43	REPTIS Project: Responsible Extraction and Processing of Titanium and other Primary Raw Materials for Sourcing EU Industrial Value Chains and Strategic Sectors	Iñigo Agote Beloki - REPTIS Project / TECNALIA	0:08
14:43	14:51	Meeting Rare Earth Permanent Magnet Supply Chain needs via long-loop recycling	Thomas Kelly - Ionic Technologies	0:08
14:51	14:59	HARMONY: Holistic Approach to enhance the Recyclability of rare-earth permanent Magnets Obtained from aNY waste stream	José Manuel Martin Garcia - HARMONY Project / CEIT	0:08
14:59	15:07	A new state of the art: high magnetic performance and recycling of critical materials	Alexandre Damiens - MAGELLAN Project / Orano	0:08
15:07	15:15	PERSEPHONE Project: Autonomous Exploration and Extraction of Deep Mineral Deposits	Marko Komac - PERSEPHONE Project / INTRAW	0:08

Figure 15 | The programme of the Critical Raw Materials corner session inside Euro PM2025

On Monday 15th, the project REPTiS [3] organised a special session of project pitches, named “Critical Raw Materials Corner”, that was held in the so-called PM Forum, a stage in the Exhibition Hall, just a few steps away from the RESQTOOL booth. The programme included about ten presentations, comprising a presentation about RESQTOOL, that opened the session and was given by J. Szałatkiewicz of Phoenix Surowce.

Later in the day, another session, a Special Interest Seminar in the format of a panel discussion with the title “PM and Critical Raw Materials: Issues and Opportunities”, also organised by the project REPTiS, saw RESQTOOL involved again. In the original programme (Figure 17), S. Norgren of Sandvik was supposed to sit in the panel, but an overlap with another congress session led to a last-minute change and J. Szałatkiewicz of Phoenix Surowce agreed to represent the project again.



Figure 16 | J. Szałatkiewicz speaking in the Critical Raw Materials Corner at Euro PM2025

[3] <http://www.REPTiS.eu>

Special Interest Seminar				
“PM and Critical Raw Materials: Issues and Opportunities”				
Monday, 15th September 2025				
16:00	16:05	Welcome	Bruno Vicenzi - European Powder Metallurgy Association / REPTiS	0:05
16:05	17:25	Round Table Discussion: “PM and Critical Raw Materials: Issues and Opportunities”	Moderator: Duygu Yilmaz - REESOURCE Project/ IFE	1:20
		Panellists:		
		Beate Orberger	Euro-Titan Project / Catura	
		Duygu Yilmaz	REESOURCE Project/ IFE	
		Filipe Neves	START Project / LNEG	
		Christian Kukla	REPTiS Project / Montanuniversität Leoben	
		José Manuel Martin Garcia	HARMONY Project / CEIT	
		Alexandre Damiens	MAGELLAN Project / Orano	
		Jakub Szatatkiewicz	RESQTOOL Project / Phoenix Surowce Sp. z o.o.	
		Marko Komac	BLOOM and PERSEPHONE Projects/ INTRAW	
		Fergal Coleman	Ionic Technologies	
		Nabeel Mancheri	EIT Raw Materials	
		Thomas Weissgärber	Fraunhofer IFAM Dresden	
17:25	17:30	Recap and End		0:05

Figure 17 | The programme of the Special Interest Seminar panel discussion at Euro PM2025



Figure 18 | The Special Interest Seminar panel discussion at Euro PM2025 “PM and Critical Raw Materials: Issues and Opportunities”

Finally, the day of Monday was closed by a reception in the Exhibition Hall, whose first part was dedicated to the Poster Award, and the second was co-hosted by the already mentioned project REPTiS and by RESQTOOL. The two project were briefly presented to the bystanders, inviting them to pass by the booths for more information. The description of RESQTOOL was made by our coordinator K. Boz of EPMA (Figure 19).



Figure 19 | K. Boz describing RESQTOOL during the project-related part of reception on Monday afternoon, inside the Euro PM2025 exhibition hall

BUSINESS NETWORKING DAY (1st October 2025)

The RESQTOOL project was presented at the University of Jyväskylä's Business Networking Day 4 in Finland. The presenters were Joel Ronkainen and Mirka Viinijärvi from GTP Finland Oy. The event attracted a total of 888 visitors, including students, researchers, and industry professionals.

The Business Networking Day is an annual event organized by the University of Jyväskylä to connect companies with future talents and foster collaboration between academia and industry.

The topic sparked lively discussions and strong interest, particularly around the project's approach to recycling critical raw materials and its contribution to sustainability in industrial applications.



Figure 20 | J. Ronkainen and M. Viinijärvi from GTP Finland Oy showcasing RESQTOOL at the Jyväskylä's Business Networking Day



Figure 21 | Our coordinator K. Boz presenting RESQTOOL at the UTIS conference in Antalya

The project was represented at the 13th UTIS International Congress on Machining, held from October 30 to November 2, 2025, in Antalya, Türkiye. The UTIS conference (International Machining Symposium) is a significant academic and industry event in Türkiye that focuses on advancements in material removal processes, cutting tools, machining technologies, and related manufacturing research and applications. The project coordinator, Kenan Boz, delivered a presentation at the event, sharing the project’s progress with an international audience of machining professionals and researchers.

Kenan Boz was the first speaker in a keynote session, presenting on «Sustainable Solutions for Critical Raw Materials Supply in the Hardmetals Industry.» His talk outlined the RESQTOOL project’s integrated strategy for recycling end-of-life cemented carbide tools to reclaim critical raw materials like tungsten and cobalt. The presentation facilitated discussions on the project’s potential to contribute to a more circular and resilient supply chain for the hardmetals sector.

13 th International Congress on Machining	
Sponsored by  UTIS www.utis.tc 30 OCTOBER - 2 NOVEMBER 2025 Julu Premier Palace Hotel Kemer, Antalya - TÜRKİYE	
02 November 2025 (Sunday)	
08:30 - 10:10	KEYNOTE SESSION - V Chair: <i>Yiğit Karpat</i>
08:30 - 09:10	 KEYNOTE: <i>Kenan Boz</i> , Sustainable Solutions for Critical Raw Materials supply in Hard Metals Industry
09:10 - 09:40	 INVITED: <i>Bahman Azarhoushang</i> , Real-Time Anomaly Detection and Surface Quality Prediction in Grinding with Industrial Edge Intelligence
09:40 - 10:10	 INVITED: <i>Seongwook Hong</i> , Modeling and Analysis of High-Speed Spindle-Bearing Systems

Figure 22 | Programme of the third day at the UTIS conference, with the presentation by K. Boz

RAW MATERIALS WEEK 2025

The Raw Materials Week 2025, organized by the European Commission, is scheduled to take place in Brussels from Monday, November 17, to Friday, November 21, 2025. The core programme of high-level sessions, policy debates, and conferences will run for three days, specifically from Tuesday, November 18, to Thursday, November 20, 2025. The surrounding days (November 17 and 21) are typically reserved for numerous side events and dedicated workshops organized by various stakeholders across the raw materials ecosystem. The event normally brings together over 1,000 participants. In the words of the EU organisers, “this edition focuses on the progress in implementing the Critical Raw Materials Act, advancing strategic projects, streamlining permitting, and mobilising sustainable investment. Core discussions will centre on building robust and diversified strategic supply chains, boosting domestic production, promoting circularity, and strengthening international partnerships to enhance competitiveness and build a resilient industrial future in Europe”.

RESQTOOL was represented by a few participants, and most importantly was involved in a side event, organised under the first impulse of the project REESOURCE [5] but with the collaboration of several projects (including ours).

While securing a reliable and sustainable supply of Critical Raw Materials (CRMs) is paramount for Europe’s green transition, common obstacles frequently limit the impact of innovative Horizon Europe projects. To address these shared challenges, RESQTOOL has teamed up with the REESOURCE project and nine other Horizon Europe innovators to host a crucial workshop: «Crossroads of Innovation: Shared Challenges and Joint Solutions in Raw Materials» [6]. This interactive side event aimed to move beyond simple discussion, focusing instead on connecting innovation efforts and generating actionable insights to accelerate a resilient CRM supply and strengthen Europe’s open strategic autonomy.

Attendees had the opportunity to:

- Discover concrete, practical solutions from a variety of Horizon Europe projects
- Collaborate to pinpoint common barriers and co-develop mitigation strategies
- Forge new connections and identify powerful synergies for cross-project collaboration

The event, which was an official side event of Raw Materials Week 2025 [7], was held on Friday, 21 November 2025, from 9:00–13:00 CET at the Marivaux Hotel in Brussels. T. Karhumaa of GTP Finland spoke on “RESQTOOL – boosting the recycling of EoL cutting tools saving W and Co” in the second part of the event, dedicated to the secondary raw materials, and took part in the panel discussion afterwards.

Unfortunately, the timing of the event did not allow us to include feedback from it, but we will do it in the next newsletter.



Figure 23 | The ad for the side event at the Raw Materials Week 2025

[5] <https://www.reesource.eu/>

[6] <https://www.reesource.eu/crossroads-of-innovation-raw-materials-week-2025/>

[7] https://single-market-economy.ec.europa.eu/sectors/raw-materials/week/side-events_en

HAGENER SYMPOSIUM PULVERMETALLURGIE

(Hagen, Germany, 27-28th November 2025)

Like for the previous event, also the Hagen Conference timing made it impossible to include further details... Anyway, like in 2024, RESQTOOL was present at the main German powder metallurgy event, organised by the Fachverband Pulvermetallurgie in Hagen, on 27-28 November 2025. The conference, held in German, contained, as usual, several contributions related to hard materials and hardmetal in particular. RESQTOOL had a booth, and participants had the chance of discussing with our coordinator K. Boz.

UPCOMING EVENTS

Look out for RESQTOOL at several upcoming events. We look forward to the opportunity to connect with you!

1ST RESQTOOL FREE TRAINING WEBINAR (5TH DECEMBER 2025)

On 5th December 2025, we will start our own series of training webinars, that will cover our RESQTOOL topics, by an event that will include three presentations.

The first one will be an introduction to the project given by our coordinator Kenan Boz. He will explain you the rationale for the project (well, if you read this newsletter, you probably already know much of it).

The training session kicks off with Teemu Karhumaa (GTP Finland OY), whose lecture is titled "Sustainable Recycling of Hardmetals: Insights from the RESQTOOL Project." He will walk us through the cutting-edge sustainable recycling technologies and processes championed by the project, especially the Zinc Reclaim process where GTP excels.

Next up, our second lecturer, Angela Serpe (University of Cagliari), will present "Circular Hardmetal Chain: Exploring Bio-Based Chemical Pathways to Boost Critical Metals Recycling." Dr. Serpe is leading pioneering research into environmentally friendly, bio-based methods for recovering critical metals from hardmetal waste. Prepare to learn why cows (yes, the animals!) are involved!

If you read this newsletter before the event, you can still register. Follow the instructions on this page:
<https://www.resqtool.eu/resqtool-free-training-webinar-hardmetal-recycling-processes-on-5th-december/>

Registration will be open until the event starts. Bring you colleagues as well!



Figure 24 | Programme of RESQTOOL's first free training webinar

SUMMEREV (6TH-7TH MAY 2026)

The next edition of the SummerEv will take place in Vienna (Austria) from 6th to 7th May 2026. The SummerEv seminar is a recurring technical workshop (which also has a winter counterpart, WinterEv) organized by the European Hard Materials Group (EuroHM) of the EPMA, providing a key platform for the hardmetal and cemented carbide community to discuss the latest advancements in material science, processing technologies, and industrial applications relevant to cutting tools, wear parts, and related powder metallurgy innovations. RESQTOOL will likely play a role.

More details will be available later on the EPMA Seminars website:

<https://seminars.epma.com/>

WORLD PM2026 (MONTREAL, CANADA)

Many partners of RESQTOOL have applied to speak at the world powder metallurgy event WorldPM2026 [8], that will take place in Montreal (Canada), on 25-29 June 2026. As the call for papers for the conference has just expired, we are still awaiting confirmation of the possible acceptance of the papers submitted, that should be included in the sub conference Tungsten 2026, dedicated to the industry of this element and of the materials containing tungsten, hardmetal being one of the big applications.

We expect to be able to give you more details in the next edition of this newsletter!

Keep in touch with our website and social media to know more about our next appearances!



[8] <https://www.mpif.org/EventsCourses/WorldPM2026/HomePage.aspx>

RESQTOOL TEAM TOUR

PHOENIX SUROWCE

Phoenix Surowce Sp. z o.o. (in English, Phoenix Resources Ltd) is a private, high-tech company specializing in innovative engineering solutions, with a strong focus on automation, robotics, AI vision systems, and sustainability. Phoenix's core business is the development of machines and systems, and engineering services, including R&D. Our products are typically one-off, special production machines. Additionally, we have broad experience in waste recycling and metals recovery solutions, as we have worked with WEEE waste processing companies in Poland.

Phoenix Surowce Sp. z o.o. was founded in 2015 in Poland and is based in Michałowice near Warsaw. We employ engineers, software developers, researchers, chemists, and also students, allowing them to be a part of our technology development process. In 2023, Phoenix Surowce received an equity investment from EIT Raw Materials, which now holds 15% of the company shares. Phoenix has therefore joined and is now a part of the EU EIT Raw Materials network.

Since 2023, we have worked towards a business that will be sustainable and has high growth potential. Based on our experience, we have selected and focused on solutions for the End-of-Life equipment, which processing can benefit from highly innovative applications of automation, robotics, and AI. One of such solution is the robotized sorter for demanding materials. The flexibility of our AI vision-based sorter can be used for various materials such as the hardmetal scraps in the RESQTOOL project but also others such as magnets.

In addition to the above, Phoenix Surowce is also developing and introducing to the market a new innovative technology of the disassembly of EoL computer hard disk drives for CRM and high quality metals recovery. This solution is replacing the shredding approach in the HDD recycling, and data destruction, and allows backflow to the EU economy of REE, next to other strategic metals such as Al, Mg, Cu, and others in the most sustainable and low carbon footprint way.



Figure 25 | Left: Robotized disassembly unit for 3,5" HDD (left); Right: Recovered and segregated NdFeB magnets from HDDs (right)

In the RESQTOOL project, we are developing the robotized sorter dedicated for hardmetal scraps and a second vision system sorter tailored for code-marked scraps. Sorting of 2D codes marked HM scrap is the next step in hardmetal scrap sorting based on data read from the codes. This approach is a breakthrough for scrap sorting but requires high accuracy, AI-backed data processing, and advanced automation and robotics for the handling of individual parts during sorting.

Contact: jakub.szalatkiewicz@phoenixsurowce.pl

Website: <https://phoenixsurowce.pl/en/main-page/>



TEMSA

TEMSA is a Spanish based company, part of the HYPERION group specialized in the production of tailor-made carbide and steel tooling for the metal cold forming industry. HYPERION is a global leader in Hard- and Super-Hard Materials founded in 2018 (spun off from Sandvik Hard Materials and GE's Diamond Innovations). It has a global footprint with operations and facilities across North America, Europe, and Asia. Founded in 1987, TEMSA has nearly 100 dedicated and highly skilled people and is present worldwide with over 40 countries with a strong footprint in the automotive, aerospace and metal packaging industry, providing engineered products. TEMSA also provides engineering services for the development of cold-formed products, bringing unmatched added value to our customers, by working together developing the most performance solutions to the market.

TEMSA is participating in the RESQTOOL project with a clear responsibility on bringing to the market a product made with recycled powder that can meet the right mechanical properties, and evaluating its performance. TEMSA has defined the business case where the baseline is settled and allows us a deep knowledge of the production and performance of the product.

Developing circularity through a very complex and technical product is a challenge. RESQTOOL is the project needed to enhance the usage of recycled tungsten. Working together with such great and reputable partners is an incredible opportunity.

Contact: Xavier.Collell@Temsacat.cat

Website: <https://www.temsacat.cat/en/>



Figure 26 | Facility of Temsa, Spain

KEEP IN TOUCH WITH RESQTOOL

If you read this newsletter and found it interesting, why not enter the RESQTOOL community?

If you have not done so yet, go to our website www.resqtool.com and click "SUBSCRIBE".
You will be inserted in our mailing list (you can opt out any time!) and receive info about our activities.

You can also follow us on three social media :

LinkedIn : <https://www.linkedin.com/company/resqtool-he-project/>

X (you know, Twitter) : <https://x.com/RESQTOOL>

YouTube : <https://www.youtube.com/channel/UCrONO4fI0r4ZEXrOL6FbXLA>

All our Open Access documents will be stored on Zenodo. We have a RESQTOOL community there (<https://zenodo.org/communities/resqtool>), visit it if you prefer downloading or reading there rather than from our website (but the website is cool!).

If you prefer a direct E-Mail, contact our coordinator Kenan Boz, kboz@epma.com

RESQTOOL



Co-funded by
the European Union

This project has been funded with support from the European Commission.
This publication reflects the views only of the author, and the Commission cannot be held responsible
for any use which may be made of the information contained therein.

Project: 101138144 | HORIZON-CL4-2023-RESILIENCE-01-05