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Elemetal
A Blue Phoenix Company

After LIFE **COMMUNICATION PLAN**

Pure Copper And Zinc Recovery



**Blue Phoenix
Group**



Elemetal
A Blue Phoenix Company

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LIFE PCR

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LIFE14 ENV/NL/000029

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Project Overview

1. Project Overview

1.1 Introduction

In Europe most of the residual and household waste is thermally treated in waste-to-energy facilities where it is converted to electrical energy and district heating. After the incineration 2 main residues are formed: bottom ash and fly ash. 1 ton of residual waste results in 25 mass% of bottom ash and 3-5 mass% of fly ash. In Europe more than 100 million tonnes of residual waste is being incinerated annually resulting in more than 25 million tonnes of bottom ash. These bottom ashes contain many valuable metals like iron, aluminum, copper, zinc and precious metals. These metals to a certain extent are recovered and the remaining minerals function as aggregates in the civil industry. Legislation on environmental leaching of heavy metals and salts are however getting stricter, which enforces us to improve technologies to increase metal recoveries and improve the environmental characteristics of the mineral aggregates produced from bottom ash.

The LIFE PCR project was initiated to improve the recovery of copper and zinc resulting in improved environmental characteristics of the remaining aggregates after metal separation.

2.1 Objectives

We extract zinc from incinerator bottom ash, a complex waste stream from waste-to-energy facilities, containing similar zinc concentration levels as found in mining industries. Leveraging on this development, we use this technology for recovering zinc from other secondary streams such as fly ashes, slag and filter residues. The technical objectives of our processes are to:

- Demonstrate optimal beneficiation of WtE bottom-ash by physical separation technology.
- Demonstrate efficient leaching of the beneficiated bottom ash.
- Demonstrate zinc recovery from bottom ash.





1.3 Project results and achievements

During the project the following (main) results were achieved:

Dissemination and communication activities like a project website, a project notice board and presentations and visits to external conferences for policy makers, scientists, costumers and general public.

LIFE PCR prototype testing

(125kgCu/day) was finished in Q2-2017

Phase 1 demonstration completed in March 2021.

- During this demonstration period the sensor sorting line was successfully implemented, commissioned and demonstrated at QR Metals, Maastricht.
- The leaching of the zinc demonstration was demonstrated on two locations. During the second half of 2019 the zinc leaching was demonstrated at the former groups headquarter (Petroleumweg 32D, Pernis-Rotterdam). After the relocation the demon-stration continued from May 2020 until March 2021. During this demonstration 120 metric tonnes of zinc has been leached.
- Zinc concentrates from 3rd parties have been tested during phase 1

A LCA has been completed in May 2020 and an second version with updates on DEMO phase 2 in March 2023. The outcome from this study was that the environmental benefits could be optimized by fully focus on zinc recovery, and the LIFE PCR flow sheet has a positive environmental impact compared to the conventional way of treating the HNF-fraction.

Phase 2 demonstration was engineered, constructed and successfully demonstrated during the period of May 2021 until March 2023.

- approximately 1000 metric tonnes of copper and 130 tons of zinc have been processed and con-verted to pure zinc sulphate

A Symposium was organized in May 2023 to enhance the dissemination of the project

1.4 Socio-economic aspects

Elemetal aims to contribute to the circular economy by closing the recycling loop with hy-drometallurgical technology for extracting metals from waste streams. Elemetal reduces the environmental burden of zinc and copper mining and processing from ore, while reducing GHG emissions from electricity and transport.

Zinc concentrates input

- Contracts with sister company QR Metals in place for 2023
- Material will be sourced as well from 3rd parties
- Total potential to be sourced: > 4 000 ton/yr
- Plant can also be operated with zinc ashes

Sales of zinc sulphate

- Sales contracts for zinc sulphate solution and working on securing other potential clients.
- Reaching out to clients active in the field of fertilizers and animal feed.

Key project indicators:

In order to measure the socio-economic success of the project, Elemetal has agreed to tracking the following indicators that impact different aspects of the business:

- Waste management and Resource efficiency - circular economy
- Chemicals/metals released
- Involvement of stakeholders
- Jobs
- Running cost/operating costs during the project and expected in case of continuation/replication/transfer after the project period
- Capital expenditure expected in case of continuation/replication/transfer after the project period
- Operating expenses expected in case of continuation/replication/transfer after the project period
- Revenue expected in case of continuation/replication/transfer after the project end



Communications Plan

2. Communications Plan

2.1 Communication Objectives

- Increase awareness and understanding among the target audience, including potential customers, industry professionals, and stakeholders.
- Enhance replication efforts for the technology
- Build a strong reputation for Elemetal as a reliable and trustworthy provider of zinc recovery solutions, showcasing expertise, innovation, and successful project outcomes.
- Provide comprehensive and accessible information about Elemetal's technologies, processes, and value proposition, helping the target audience understand the importance and potential of zinc recovery from waste streams.

2.2 Strategic Approach

Our strategic approach for Elemetal revolves around effectively communicating our mission, values, and achievements to our target audience. We will develop a comprehensive communication plan that includes identifying key messages, defining target segments, and selecting appropriate

communication channels. Through clear and consistent messaging, we will highlight the environmental and economic benefits of our zinc recovery technologies and emphasize our commitment to sustainable practices. Our multi-channel approach means that we will take advantage of various channels such as industry conferences, publications, and online presence to disseminate information about Elemetal and the LIFE PCR project. By building strong relationships with stakeholders, including industry associations, and potential customers, we will position Elemetal as a trusted partner in zinc recovery. Our strategy is to focus on engaging and educating our audience, establishing Elemetal as a thought leader, and driving awareness and interest in our innovative zinc solutions and their potential applications, and the environmental benefits to our value chain.

2.3 Target Audiences

Throughout the course of the LIFE PCR project, Elemetal has, and will continue to, maintain regular communication lines between key stakeholders. Internal stakeholders such as the project team and all employees are vital to the success of the project. Elemetal also understand the importance of build-ing relationships with other project partners, associations, suppliers and the wider zinc industry.





2.4 Future dissemination and communication strategy

2.4.1 Digital Communication

Website

Elemetal will maintain an up-to-date and user-friendly website that serves as a comprehensive resource for information about Elemetal's zinc recovery solutions. The strategic approach includes updating the website with relevant news articles, industry insights, and other valuable content to keep visitors informed and engaged. It is important to ensure that the website reflects Elemetal's branding, values, and commitment to sustainability, creating a cohesive and consistent online presence.

Social Media

Our primary channel to share event-related updates and photos is via LinkedIn. We can use this platform to showcase key takeaways and promote upcoming events, plant tours, and symposia to generate interest and drive attendance.

2.4.2 Offline Communication

Internal Communications

As part of Blue Phoenix Group, Elemetal utilises internal communication channels, such as newsletters like "The Phoenix" to share updates on projects, achievements, and industry developments related to zinc recovery.

Supporting Marketing Materials

We will develop high-quality marketing materials, including brochures and roll-up banners, that effectively communicate our zinc recovery solutions, their benefits, and the competitive advantages of partnering with Elemetal. We can distribute these materials on events or site tours to stakeholders. These materials will highlight our expertise, and present insights that demonstrate the economic and environmental value of our solutions. By having visually appealing and informative marketing materials, we can support our sales and business development efforts.

Membership Associations

We are exploring membership opportunities with relevant industry association such as International Zinc Association (IZA), to benefit from the association's network, resources, and platforms to promote Elemetal's progress in zinc upcycling and to forge new connections with potential suppliers and clients. By participating in association events and contributing to publications, this will enhance Elemetal's industry presence.

Product display samples

Throughout the initial stages of the project, we have collected product display samples that showcase the quality and applications of the recovered zinc from our processes. These samples can be used during site visits, plant tours, events, and meetings with stakeholders to exhibit the end product produced by Elemetal. By providing tangible examples of our zinc products, we aim to demonstrate the quality and reliability of the process we have developed.





2.4.3 Conferences, networking, and webinars

Site visits and plant tours

Elemetal organises site visits or plant tours for potential customers, industry professionals, and stakeholders to showcase our facilities, processes, and successful zinc recovery projects. These visits offer an opportunity for visitors to witness the efficiency and environmental benefits of our operations and see first-hand the progress of our demonstration plant. In the future, we plan to capture testimonials and feedback from visitors to use as supporting evidence of Elemetal's capabilities and expertise.

Events - External

Elemetal will participate in external events relevant to our industry and target audience. This includes conferences, trade shows, and exhibitions where we can showcase our zinc recovery solutions, share insights through presentations, and engage with potential customers, industry experts, and key stakeholders. We will set up booths or exhibition spaces with attendees, showcase product displays and distribute marketing materials.

Events - Internal

Elemetal will continue to organise small events when appropriate to create a collaborative environment that brings together industry professionals, our employees, and other stakeholders. These events will serve as valuable platforms for sharing knowledge, research findings, and success stories specifically focused on zinc recovery from waste streams. By bringing together diverse perspectives and expertise, we aim to foster collaboration, encourage networking, and facilitate meaningful connections among attendees.

Attend LIFE Project Symposia

In May 2023, the team at Elemetal welcomed participants to visit the facility at Plant One, in Rotterdam Botlek, where over the past two years, the demonstration plant has been built for the upcycling of zinc from bottom ash. The afternoon program consisted of several presentations about other LIFE projects, by Blue Phoenix Group, University of Liège/Comet Traitements S.A. and ASCEM, followed by a tour of the Elemetal demonstration plant.

Elemetal will actively participate in symposia organized by other LIFE projects in related fields and share insights, lessons learned, and best practices from Elemetal's metal recovery projects. We can engage with other project teams and industry professionals to foster knowledge ex-change and potential partnerships.



2.4.4 Networking with potential customers

In order to get in touch with new potential customers, we plan to continue organizing and participating in activities that promote recycling and the circular economy. Elemetal can benefit from the network of industry associations to widen our current reach. The team will also increase activity on professional platforms such as LinkedIn to main contact with new and existing stakeholders.

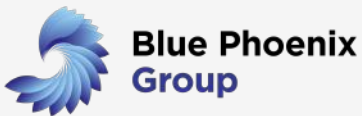


2.5 Communications Schedule

Description of Activity	When	Purpose	Who	Cost Estimated
Website maintenance and updates	Ongoing	Up-to-date source of information for all online visitors	Elemetal/BPG	-
Social media posts	Adhoc	Engage online with the wider zinc and circular economy community	Elemetal/BPG	-
Internal newsletter	Bi-annually	Share updates internally across BPG and engage employees	BPG	-
Supporting marketing materials	Ongoing	To support with promotion and sales during events and digitally	Elemetal/BPG	€
Attend LIFE project symposia	Adhoc	To learn from and engage with other LIFE projects	Elemetal	€ €
Site visits/plant tours	Ongoing	To showcase the Elemetal facility to all key stakeholders	Elemetal	€
External events - Zinc & Lead Expert Committee Meeting	Aug 2023	Latest research in all areas of the zinc industry	Elemetal	€ € €
External events - IFAT	May 2024 (recurring)	Applications of zinc in agriculture	Elemetal/BPG	€ € €
External events - e.g., EuroTier	Nov 2024 (recurring)	Applications of zinc products in fertilizer and animal feed	Elemetal	€ € €
External events - IZA Events	2023 - onwards	Networking at global zinc association events	Elemetal	€ € €
External Events - GDMB Zinc Events	2023 - onwards	GDMB Society of Metallurgists and Miners	Elemetal	€ €
Explore IZA Membership	2023/24	Industry news, contacts, articles, events etc.	Elemetal	€ €



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