



*Welcome Meeting –
LIFE22 projects*



 ACRONYM: LIFE22-ENV-ES-Z-ONA4LIFE

 PROJECT ID: 101114027

 PROJECT LOCATION: Gijón, Spain

 BUDGET INFO:

 Total amount: € 3,522,879.02

 DURATION: Start: 01/09/23 – End: 31/08/27

 PROJECT'S IMPLEMENTORS

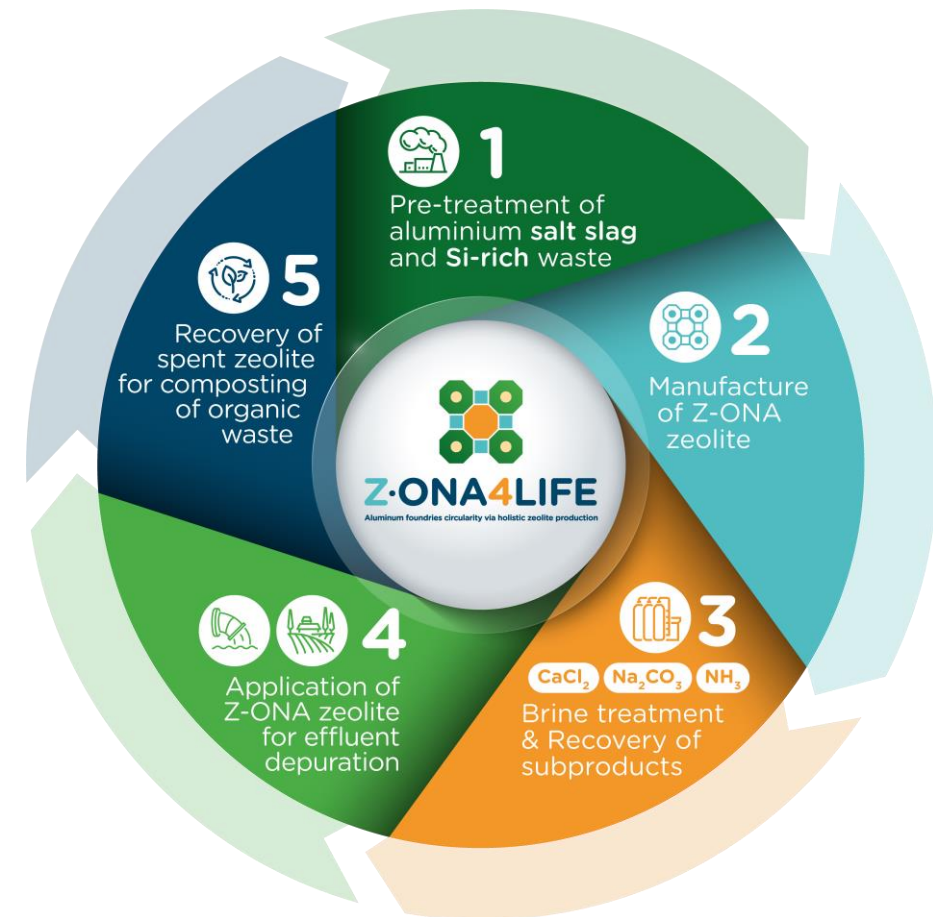
 Coordinating Beneficiary: CSIC

 Associated Beneficiaries: Ferrosadim/Alusigma, Inderen, Cogersa, Trust-IT/COMMpla









Objectives & Scope

- ❧ Demonstrate the technical and economic viability of synthetic Z-ONA zeolite production at pilot scale.
- ❧ Enhance circularity within the aluminium industry by valorising aluminium salt slag and Si-rich wastes.
- ❧ Develop a near-zero-waste process by recovering by-products and recycling process water.
- ❧ Promote the widespread use of Z-ONA zeolite through a demonstration plant.
- ❧ Bridge the gap between laboratory-scale salt slag valorization and potential industrial-scale implementation.
- ❧ Commercially exploit the products derived from waste valorization, specifically the Z-ONA zeolite.



Z-ONA4LIFE aims to show, on a pilot scale, that making synthetic Z-ONA zeolite is a practical and cost-effective technology

Technological and Environmental:

-  Recycle 145t of salt slag and 95t of silica waste
 -  Produce 220t of zeolite
 -  Depurate at least 118m³ of landfill leachate
 -  Use of at least 100t of zeolite for livestock/mining effluents & gas flow
 -  Produce 25t of enhanced compost
 -  Produce 120t of organic soil
- International business & replication plans

Knowledge Transfer

-  1 International patent
-  2 Workshops with a scientific-technical focus
-  8 Organised webinars
-  4 Training workshops
-  2 Open Days
-  15 scientific communications (journals, exhibitions)
-  2 Policy impact events

These impacts highlight our commitment to advancing technology, sustainability, and knowledge-sharing in the aluminum industry for a greener future

- ✿ The project will mainly contribute to the implementation of the **Waste Framework Directive**, the **Circular Economy Action Plan** and the **Industrial Emissions Directive**. Furthermore, the use of the produced zeolites in the depuration of liquid and gas effluents will contribute to the implementation of the **European policies** related to **water** and **air emissions**.
- ✿ Z-ONA4LIFE will deploy a series of **public consultations**, **webinars**, and **workshops** with guest speakers, renowned in the circular economy field to identify future **priorities** in the **sector**, and provide input with its stakeholders to gauge priorities and feedback to **policy makers**.
- ✿ Thanks to this, Z-ONA4LIFE will develop a **blueprint** based on the innovative applications of **Z-ONA zeolite** to influence **policies on the Green Deal** and a **Roadmap** to provide policy and technical guidelines for the replication of the project's results.
- ✿ **Policy makers** (EU Commission members and local authorities) will be regularly invited to attend or provide keynote speech at diverse policy and outreach events organised during the project lifetime. Their buy-in serves two purposes:
 - ✿ Policy makers may obtain relevant recommendations to serve future policy priorities that can influence the future call objectives in future LIFE programme or other Horizon Europe programme call texts.
 - ✿ Engaging policy makers during the outreach events will provide authoritativeness to the subject matter and will increase visibility.



These activities aim to provide a comprehensive analysis of how the expected results of ZONA4-LIFE may impact EU policy, legislation and business sector

Current business scenario in Europe

- ❧ The **disposal** of **salt slag** is **banned** in Spain and many other countries of the EU.
- ❧ In Europe, there are more than **270** known **aluminium-smelting plants** but only approximately **10 salt-slag-treating facilities**, located in Germany, France, Italy, Norway, the UK and Spain.
- ❧ EU foundries have to **transport** thousands of tonnes of salt slag thousands of kilometres for its processing, which involves an enormous **economic** and **environmental cost**.

A focus on Spain

- ❧ In Spain there is just one major manager of salt slag that undergoes a leaching process to dissolve and recover the salt, which hydrolyses the salt slag from most of the Spanish aluminium smelters, one of them being ALUSIGMA (Z-ONA4LIFE partner).
- ❧ The treatment of salt slag entails a **high cost** for the aluminium smelters. In addition to **transport cost**, the smelters have to pay a **fee** around **300 €/t** for the management of their slag, and they are forced to purchase the salt generated.
- ❧ The high cost of salt slag treatment causes that other smelters that have available sites at their facilities, have opted to deposit their salt slag on their own property instead of transporting it to the waste manager, with the consequent **environmental problem** of dumping the untreated salt slag.

Implementation of a new business strategy



- ❧ Z-ONA4LIFE will develop a **business strategy** to roll-out Z-ONA4LIFE in Europe:
 - ❧ The **1st pilot** will run in ALUSIGMA which provides:
 - ❧ pretreated salt slag as raw material for the process
 - ❧ land for installation of the pilot plant
 - ❧ logistic means (transport, handling and storage)
 - ❧ annual production capacity of 20.000 tons of salt slag
 - ❧ After the successful implementation in ALUSIGMA, the best practices will be **replicated** to other markets (at first in **Spain** and, then, in **Europe**)

Business potential in Spain (1st replication market)

- ❧ In Spain there are 15 aluminium recycling plants that produce approx. 400.000 tons/year of aluminium (Salt slag production is around 190.000 tons/year) → these tons can be recycled using the Z-ONA4LIFE best practices

Business potential in Europe (2nd replication market)

- ❧ In Europe there are more than 220 recycling plants that produce approx. 4 million tonnes → these tons can be recycled using the Z-ONA4LIFE best practices

The Z-ONA4LIFE innovative solutions can contribute to increase the recyclability level of aluminium in Europe and reduce environmental, transportation and industrial costs