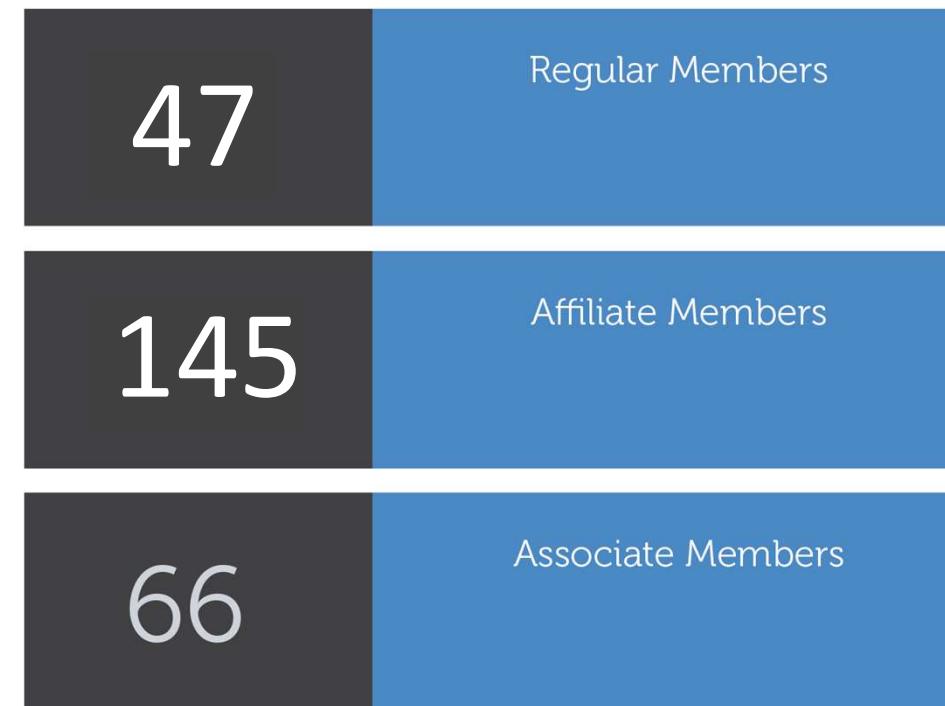


# Zinc: A Critical Material for the Low Carbon Economy

**ZINC** | international  
zinc association



# IZA Locations and Members

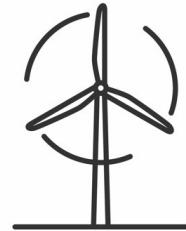


# Enabling the Energy Transition

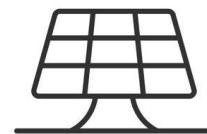
Zinc use in this sector is projected to surpass 652,000 MT by 2030.<sup>1</sup>



Zinc coatings extend the life and durability of electrical grids.



Zinc coatings ensure that wind turbines meet their intended design life.



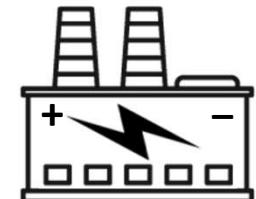
Zinc coatings support solar structures and co-products Ga, Ge and In provide power.



Zinc batteries supply grid backup, long-duration storage, and mobility applications.



Most mass production EV's rely on zinc-coated steel for safety, longevity and low cost.



Zinc electrolyzer capacity could be adapted to deliver significant battery capacity for 6 or more hours daily.

1. Source: McKinsey, CRU, International Zinc Association



# Zinc Batteries Pass \$1 Billion in Investments

Koch Industries invests in zinc battery energy storage company Eos

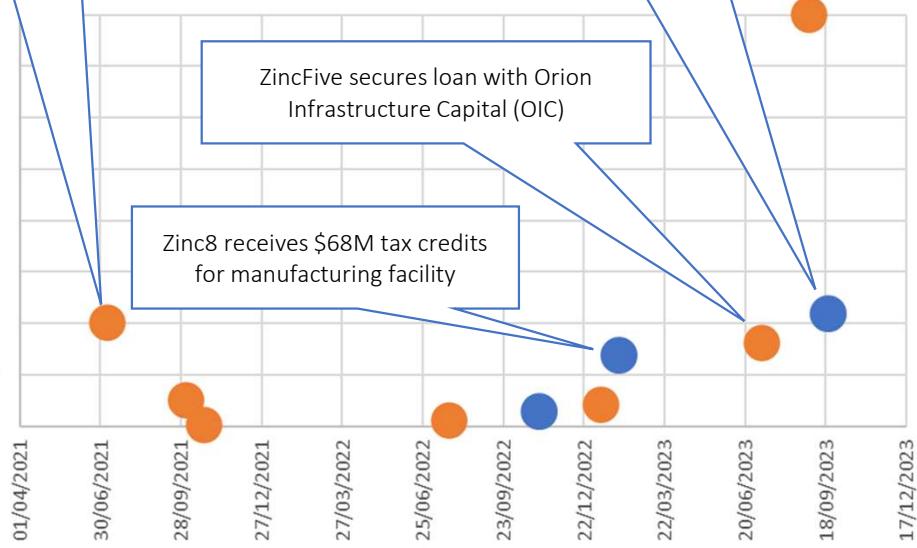
DoE LDES demonstration projects - grants for 9 projects (total \$325M) of which 3 in Zn by Eos, Redflow & UEP

Eos wins \$400M DOE loan guarantee to build manufacturing capacity

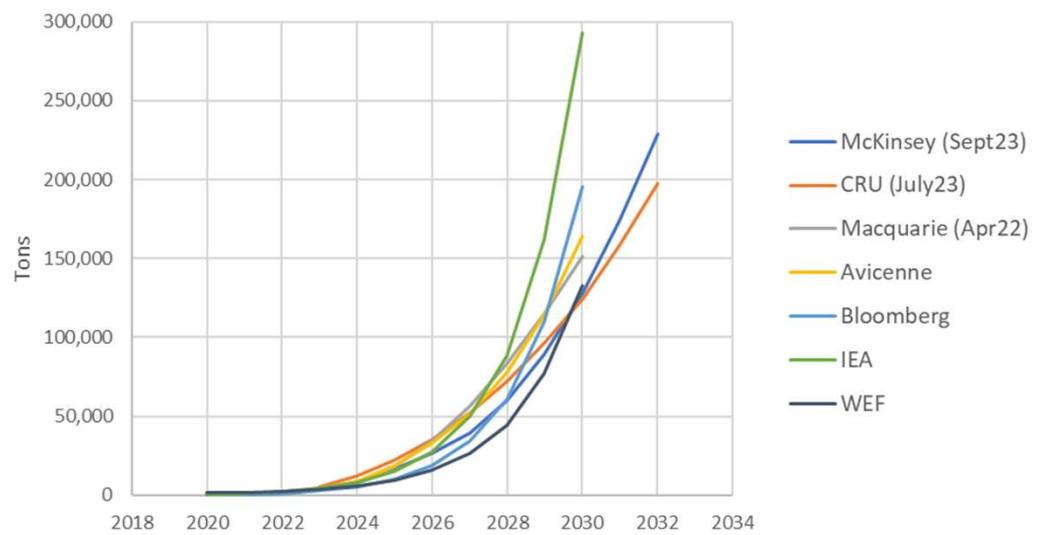
## Zn Battery Funding announcements

ZincFive secures loan with Orion Infrastructure Capital (OIC)

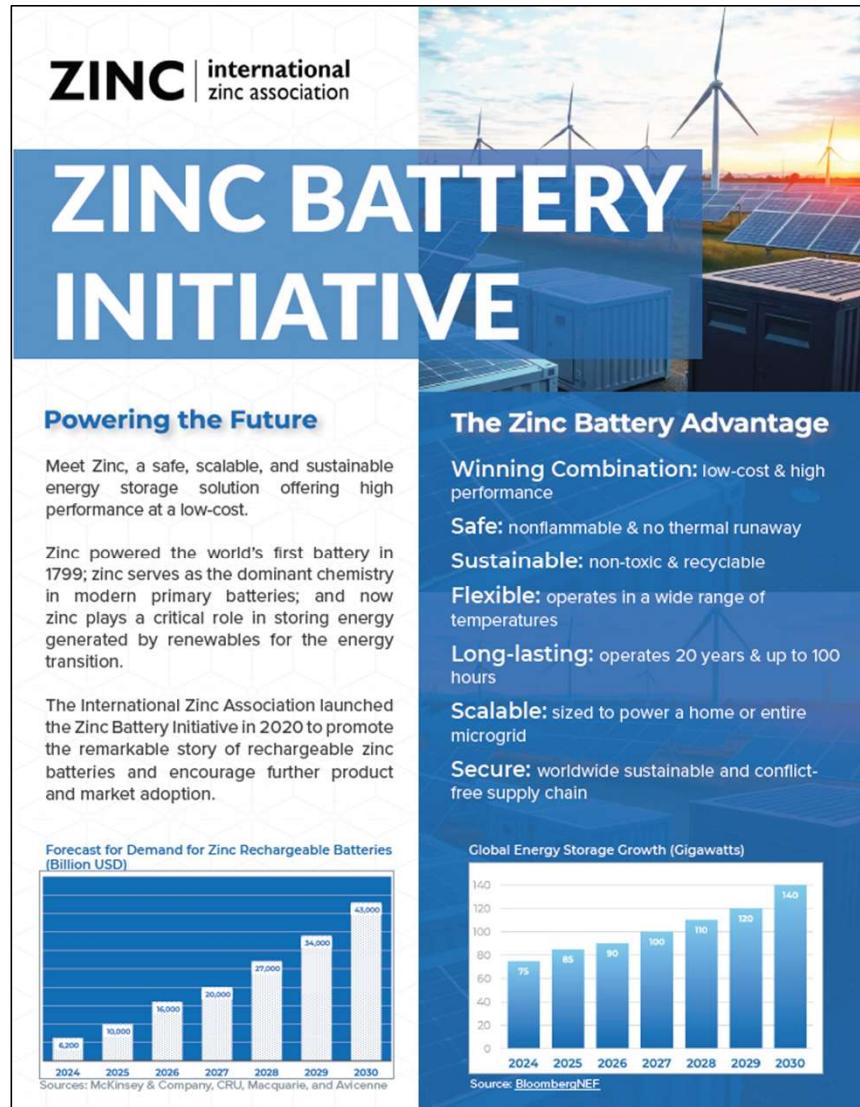
Zinc8 receives \$68M tax credits for manufacturing facility



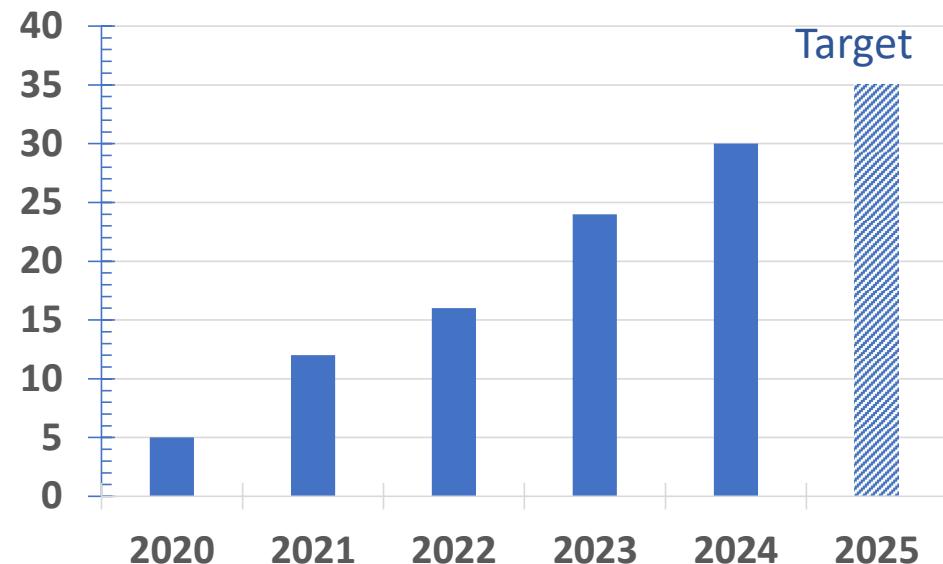
## Forecast Total Zinc Deployed in BESS (10% market share by 2030)



# Zinc Battery Initiative (ZBI)



## ZBI Members



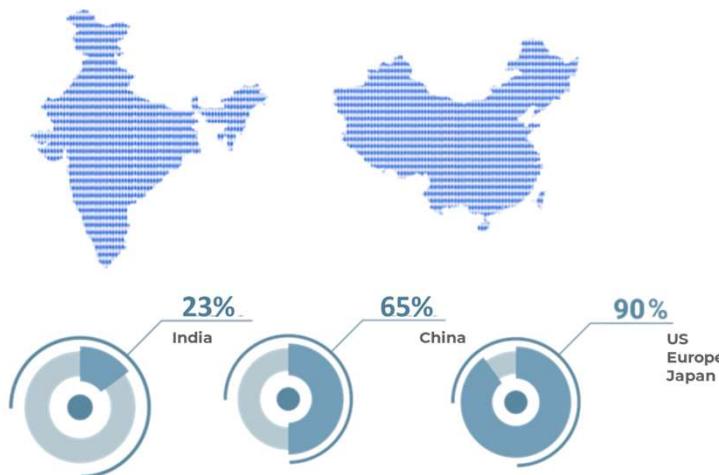
Starting with 5 members in 2020, the ZBI grew to 30 in the span of 4 years



# Zinc in Automotive

*Zinc in Automotive Bodies Growing by 140,000 Tonnes by 2030*

*Annual Demand for Zinc in xEVs will increase by 5X  
from 2022 to 2030, from 53,500 to 306,000 Tons Annually*

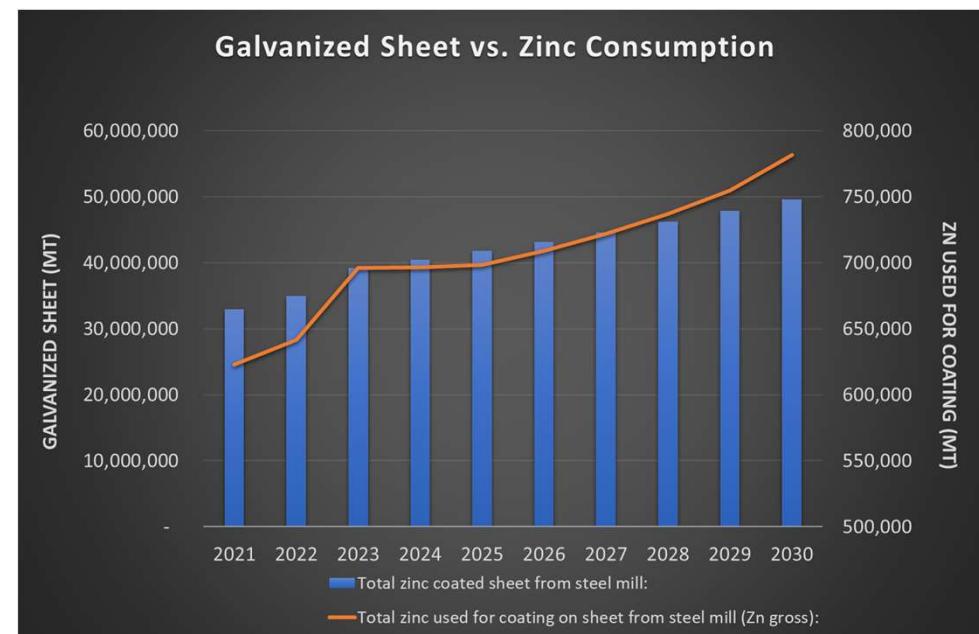


Growing Middle Class  
in India and China

Growth Galvanized  
Steel Intensity in India  
and China



Adoption of Galvanized  
Steel by all Electric  
Vehicle Manufacturers



# NTSB Report Says 10,000 Bridges at Risk for Corrosion



Pittsburgh, PA, 22 January 2022

## Chlorine Corrosion May Have Contributed to Partial Bridge Collapse in Germany

The last tram crossed the span just 18 minutes before the collapse.



Dresden, 11 Sept 2024

**ZINC** | international zinc association

# Zinc Coatings

- ✓ Infrastructure
- ✓ Solar
- ✓ Offshore Wind
- ✓ Smart Cities

AMERICAN ASSOCIATION OF  
STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS

**AASHTO**  
THE VOICE OF TRANSPORTATION



U.S. Department of Transportation  
Federal Highway Administration

 Die  
Autobahn

**DB** NETZE  
DB Netz AG

**bast**  
Bundesanstalt für  
Straßenwesen

SHORT SPAN STEEL  
BRIDGE ALLIANCE™

 American  
Iron and Steel  
Institute

NATIONAL STEEL BRIDGE ALLIANCE  
NSBA  
FOUNDED 1995

# Clean Energy Steel Construction Center

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## New AGA/IZA Initiative



Solar



T&D



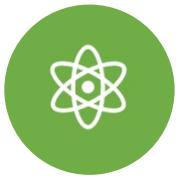
Wind



Battery Storage



Natural Gas



Nuclear



Hydropower



Hydrogen



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zinc association

# Promoting Security and Defense

- Zinc powers the batteries in submarines and fighter jets.
- Zinc galvanizes steel in military vehicles, ships, and other equipment, protecting against corrosion and ensuring a long service life.
- Zinc plating enhances corrosion resistance in aircraft components, vehicular parts, naval hardware, and weapons systems.
- Zinc in high-strength alloys in military applications.
- Zinc oxide plays a critical role in the tires of all military vehicles.
- Zinc's co-product germanium is used in night goggles.



# US Tariffs Advocacy



Most zinc products currently under Annex II and exempted from tariffs



Section 232 investigation on critical minerals, including zinc, underway



IZA working with US Department of Commerce to provide information



Coordinating with Members, Affiliates and downstream customers/associations

# Zinc Enables Decarbonization

Quantifying and monetizing the positive impact protecting steel with zinc has on decreasing life-time costs, decreasing carbon emissions, and increasing safety.



Residential  
Construction



Automotive

Results coming soon



Energy

Results coming soon



Infrastructure

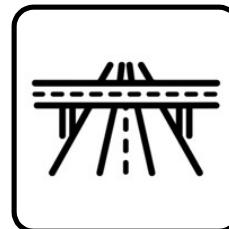
Results coming soon

<https://www.zinc.org/zinc-enables-decarbonization/>

# Increasing Value While Decreasing CO2 Emissions

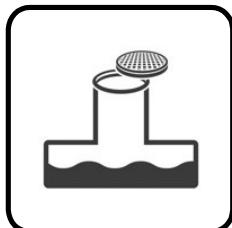
## Galvanized Rebar in Roadways

- \$1M/km Net Value with zinc
- 3,000 tCO2e abated per kilometer



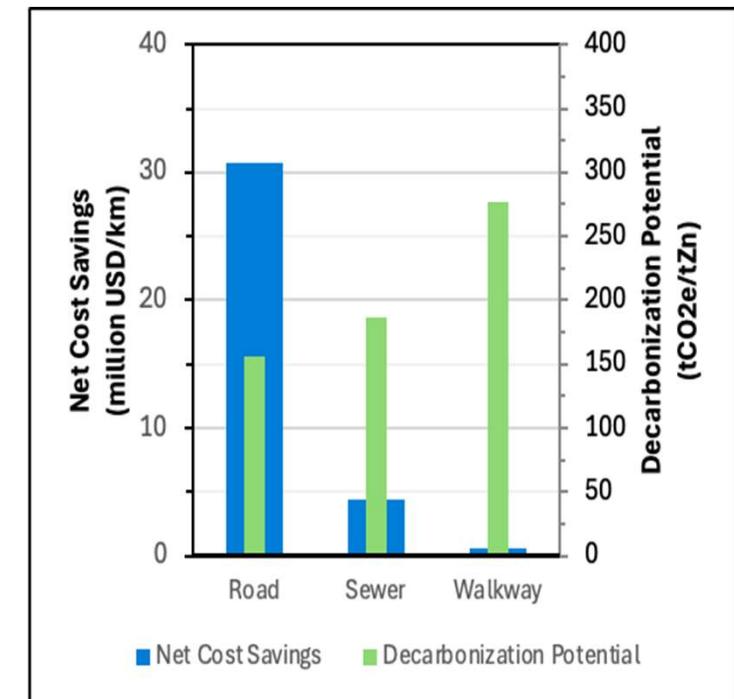
## Galvanized Rebar in Sewer Mains

- \$150,000/km Net Value with zinc
- 130 tCO2e abated per kilometer



## Galvanized Rebar in Walkways

- \$80,000/km Net Value with zinc
- 310 tCO2e abated per kilometer



## Global Steel Rebar Market

- 1% rebar market = Annual 80-265 Kt Zn installed
- 1% rebar market = Annual 50-250 Mt CO2e avoided

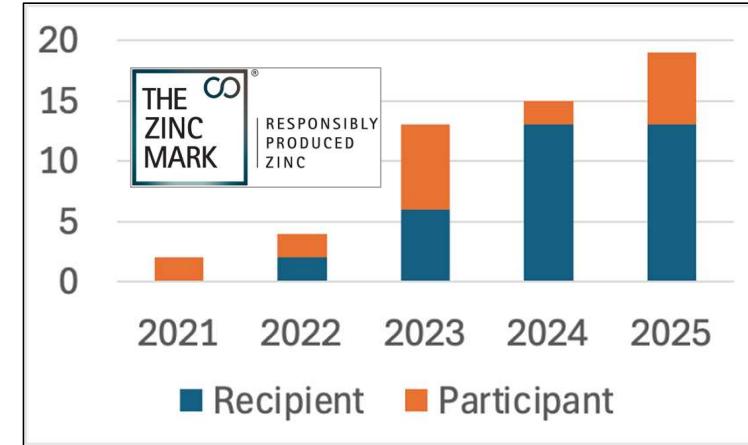
# Sustainable Development

## Zinc Mark Status

Consolidated Mining Standard Initiative  
THE COPPER MARK RESPONSIBLY PRODUCED COPPER ICMM TSM WORLD GOLD COUNCIL

Engaged in CMSI via Copper Mark and ICMM

[https://www.zinc.org/responsible\\_sourcing/](https://www.zinc.org/responsible_sourcing/)

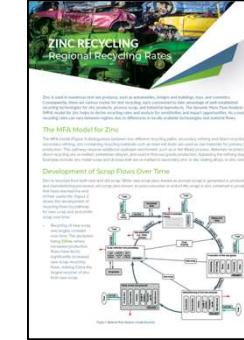


## Life Cycle Assessment

- Internalized LCA services in 2024
- EU ZAMAK submitted to ecoinvent (Apr 2025)
- Remelt zinc, SHG, galvanizing, ZnO, and sheet demands being prioritized
- LCA WG, EPDs, PCFs, and carbon footprint 3.0 in 2025

<https://www.zinc.org/life-cycle-assessment/>

<https://www.zinc.org/circularity-2/>



## 4 New Circularity Fact Sheets



EU Task Force formed in March to address policy impacts on zinc recycling tradeoffs

# Environment & Health

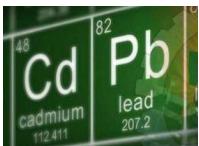


<https://www.zinc.org/compliance/>

- IZA estimates 61% lower global Hg load from zinc concentrates and 79% reduced air emissions from smelting in new survey (Apr 2025)
- UNEP thankful for industry initiative and transparency

- REACH Evaluations: Defend ZnO-nano and ZnS
- Update Zn EQS for EU Risk
- Protect water assessment position in WFD
- EU Commission thanked Zinc expert contribution to new Soil Health Law

- IZA-supported IZiNCG report on impacts of climate change on zinc malnutrition
- 40 vulnerable countries; food security, diarrheal disease, adverse birth outcomes
- National-level advocacy and communication in 2025



- Pb ENV classification -successfully concluded no impact on Zn classification
- Collated a new Cd Observatory on air and water plant emissions



# Zambia Partnership to Protect, Empower, and Save Lives with Zinc



## What is needed to address national zinc deficiency?

- ✓ World Health Organization call to action (2019)
- ✓ National data on zinc deficiency (Zambia is #2 at 37%)
- ✓ National “Essential Medicine” policy (2021)
- ✓ National infrastructure for distribution
- ✓ Governmental endorsement



# Saving lives with Zinc & Kit Yamoyo

- Combining life-saving Oral Rehydration Salts (ORS) and Zinc
- Simple, affordable (<\$0.60 USD), and easy-to-use
- Treats diarrhea effectively and prevents future episodes
- Multisectoral product available through both public and private channels



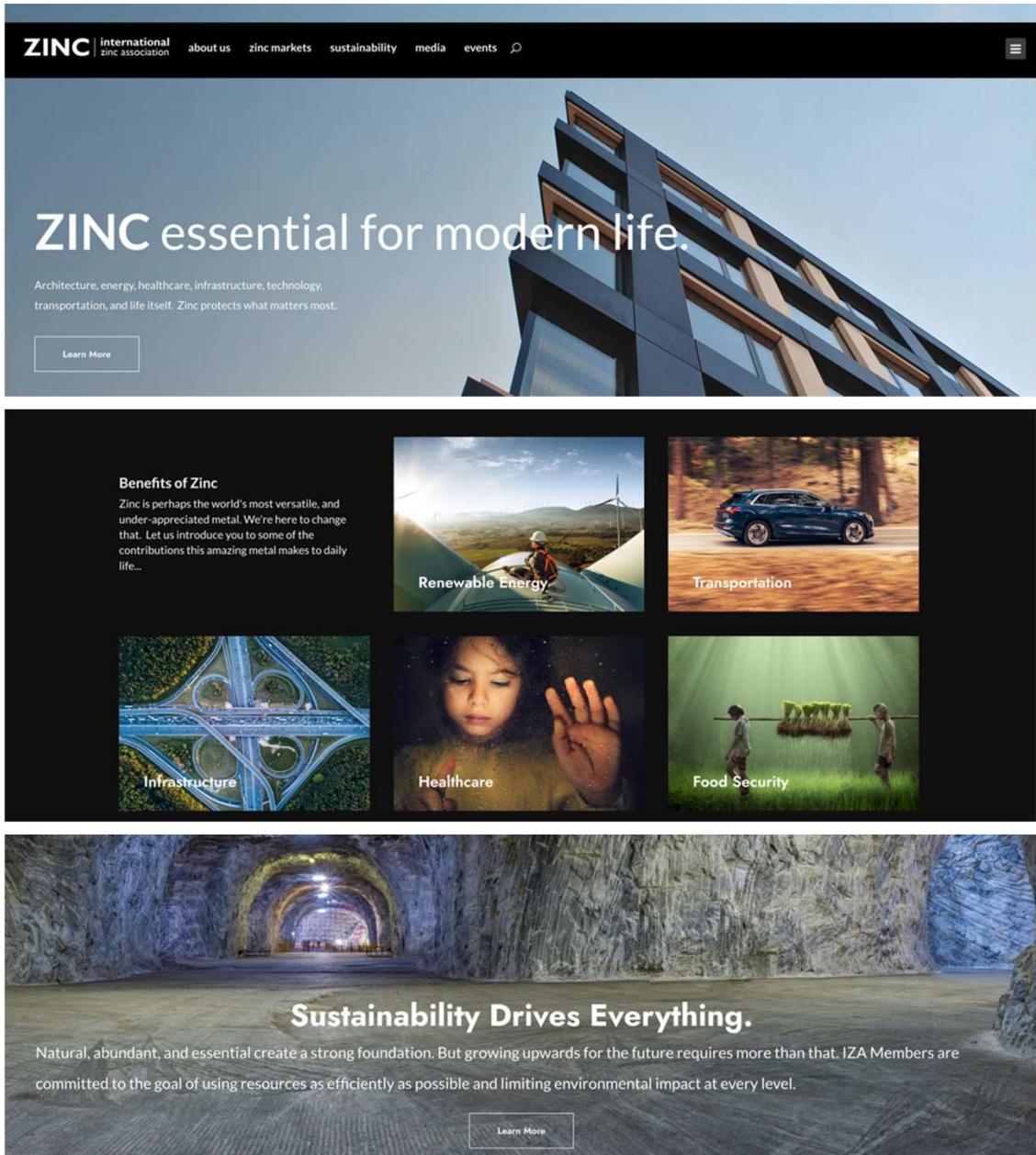
## Kit contains:

- Instructional leaflet
- 10 zinc tablets
- 4 sachets of ORS
- 200ml pouch for delivery

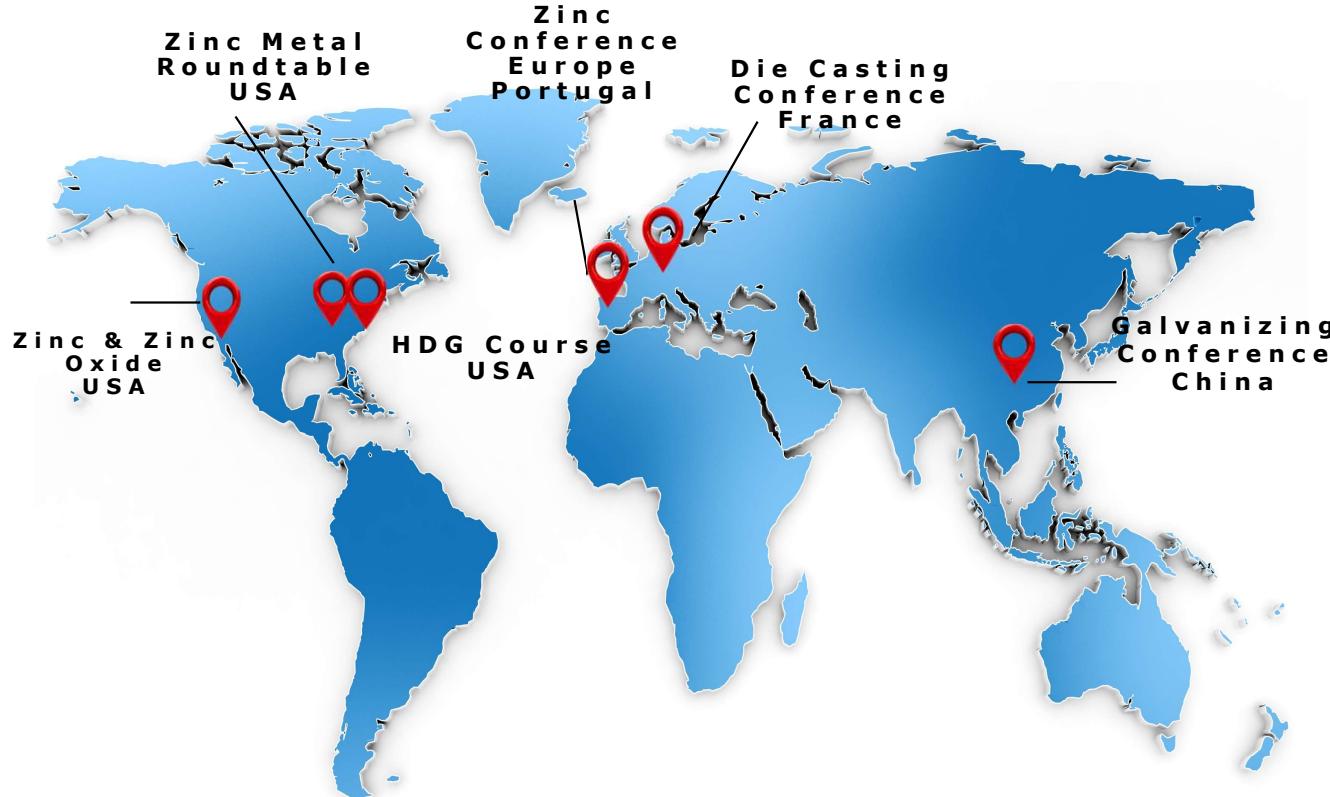


# Communications

- Print, TV and Social Media coverage
- Public + Member Websites
- Conferences



# Conferences: Global Networking



## 2026 Events

- International Zinc Conference, Orlando, USA
- European Zinc Conference, Italy
- Zinc College, TBD
- Latin Galva, Brazil
- Zinc Metal Roundtable, Nashville, USA
- Zinc in Food & Nutrition Security, Bangkok

# IZA Full Members

**BEFESA**

**NEW BOLIDEN**



**circularzinc**  
Recycling

**DK**  
RECYCLING & ROHEISEN

**everZINC+**

**GLENCORE**



**Global Steel Dust**

**GRILLO**

**GrupoMéxico**

**GRUPO OXY**

**H.K.C.**

**Hecla**  
MINING COMPANY

**vedanta** | **Hindustan Zinc Limited**

**HCM SA** | **ZGM BOLESLAW**

**IEQSA**

**CHELYABINSK ZINC PLANT**

**HOLDING KCM 2000**

**KZ**

**Brüggemann**

**lundin mining**

**M**  
METAENTERPRICES

**PEÑOLES**

**METALSIDER2**

**MITSUI KINZOKU**

**MM**  
**MMG**

**Newmont**

**nexa**

**NORZINC**  
A PREMIUM MINE DEVELOPER

**NUOVA EUROZINCO** S.p.A

**nyrstar**

**Pontenossa**

**rezinal**

**SAN CRISTOBAL MINING**

**Silox**

**SOUTH32**

**SUMITOMO METAL MINING CO., LTD.**

**Teck**

**Terrafame**

**Trafigura**

**VM**  
BUILDING SOLUTIONS

**VOLCAN**  
VOLCAN COMPAÑIA MINERA S.A.A

**ZHIYI** 志亿

**ZN**  
ZINC NACIONAL

**Zinc**  
Resources LLC

**ZinCol Ossidi** SpA

**Zochem**  
**ZnO**