NAATBATT NA-ZN CONFERENCE NOV 18TH ,2025

ZINC BATTERY SUPPLY CHAIN AND COLLABORATION

A SUPPLIER PERSPECTIVE ON ACCELERATING TIME TO MARKET

Overview

- Largest zinc chemicals / materials company globally
- 14 facilities located throughout North America, Europe and Asia
- Headquartered in Houston, TX
  - 800 global employees

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We supply all below in battery grade, designed to work in Alkaline, near Neutral and Acidic systems

FZP	ZnO	ZAM	Zano
Zinc Powder >125 000 T	Zinc Oxide >125 000T	Zinc Alloyed Material >25 000 T	Ultrafine Zinc Oxide >500 T

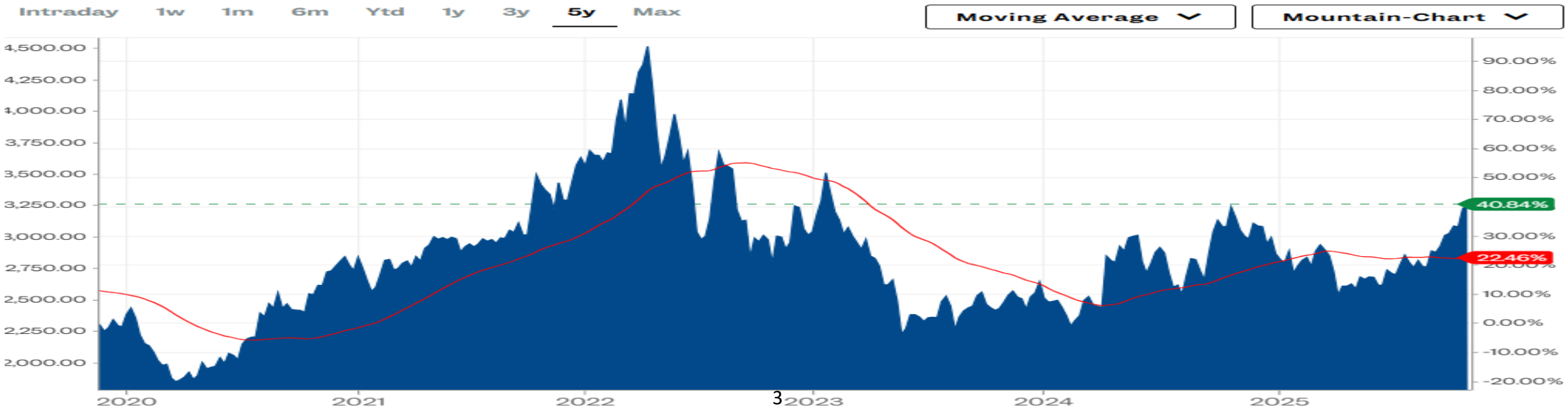
top ranked zinc chemical producer.

ENOUGH ZINC FOR BATTERIES

ZINC IS A HIGHLY ABUNDANT METAL IN THE EARTHS CRUST

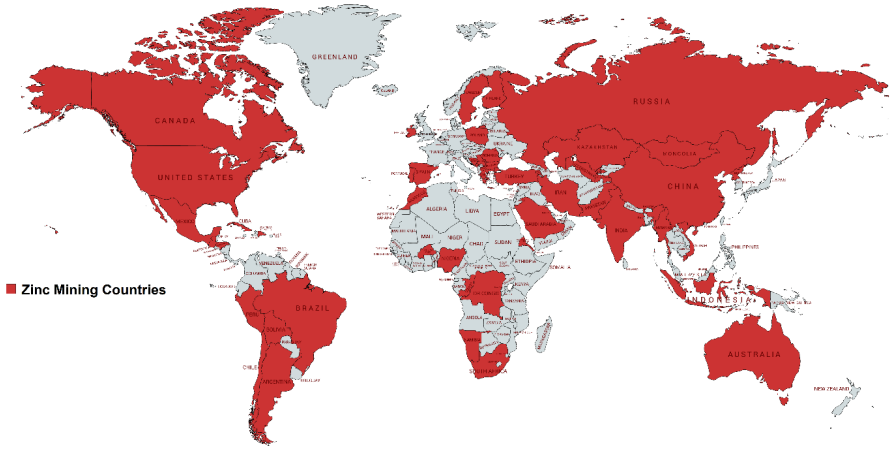
- Accessible earth crust content is 198 Trillion metric tonnes
- Extractable Global Reserves are 63 billion tonnes
- Zinc currently in use is 247 million tonnes!
- *That is a lot of batteries*

Relatively stably LME



Mining and Refining

- Mined and refined in all continents
- No critical bottlenecks in the current supply chain
- Continuous investment can take the load of emerging markets – Rechargeable batteries



Source: ILZSG, United Nations

Zinc materials - Established Recycling

Production of zinc through recycling uses 76% less energy than through primary extraction processes

Between 30% and 40% of the world's zinc supply is sourced from old scrap (1.4m tonnes), and new scrap/residues (1.5m tonnes)

45% of Everzinc source material is recycled zinc

Nearly 70% of zinc in end-of-life products is recycled

Zinc In USA

Red Dog Mine in Alaska still the primary source of material

555600 MTs
largest in the world

2024 Zinc concentrate produced – 750,000 tonn

580,000 tonn exported

600,000 tonn refined Zinc imported back (Mainly from Canada & Mexico)

New mine - Hermosa in Arizona

There is a need to improve the full supply chain of Zinc in the US

US Imports >70% of its refined zinc needs

Table 1: U.S. Zinc Ore Grades

Mine	Location	Ore Grade of Total Reserves and Resources (%)	Development Stage
Red Dog	Alaska	13.42	Expansion
Hermosa	Arizona	3.11	Feasibility Complete
Nicolet	Wisconsin	9.80	Reserves Development
Su Claims	Alaska	10.00	Reserves Development
Lik	Alaska	8.10	Prefeas/Scoping
Upper Kobuk Mineral Projects	Alaska	0.57	Feasibility Complete
Santa Rosa	California	8.80	Target Outline
West Desert	Utah	3.83	Prefeas/Scoping
Greens Creek	Alaska	3.09	Operating
East Tennessee Mines	Tennessee	3.90	Operating
Red Mountain	Alaska	3.89	Advanced Exploration
Empire State	New York	2.72	Operating
Palmer	Alaska	4.27	Prefeas/Scoping

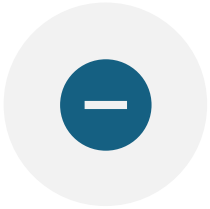
Note: Blue indicates projects under early-stage development.
Source: "S&P Global Capital IQ database," S&P Global.

Source: Rebuilding US Zinc Capacity, Gracelin Bhaskaran, CSIS.org , May 2025

Not all Zinc is the same – Market requirements needed to scale production

- Zinc Powders
  - High purity (SHG or SSHG)
  - Low Fe, Pb, Cd – is it a need for all chemistries?
  - PSD – Narrow vs wide
  - Particle size –
    - Lower (<25 um ?, HSA)
    - Higher (Low surface area?)
  - Particle Shape preference
- Zinc Foil – Purity & Thickness
- Zinc Salts – Purity

Components of Zinc Battery Supply Chain (Cell)

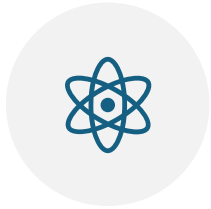


ANODE : ZINC, ZINC OXIDES, ZINC SALTS

CATHODE MATERIALS: PRIMARILY NI AND MNO2

SEPARATORS

ELECTROLYTES: PRIMARILY AQUEOUS + SALTS



POLYMERS

ADDITIVES

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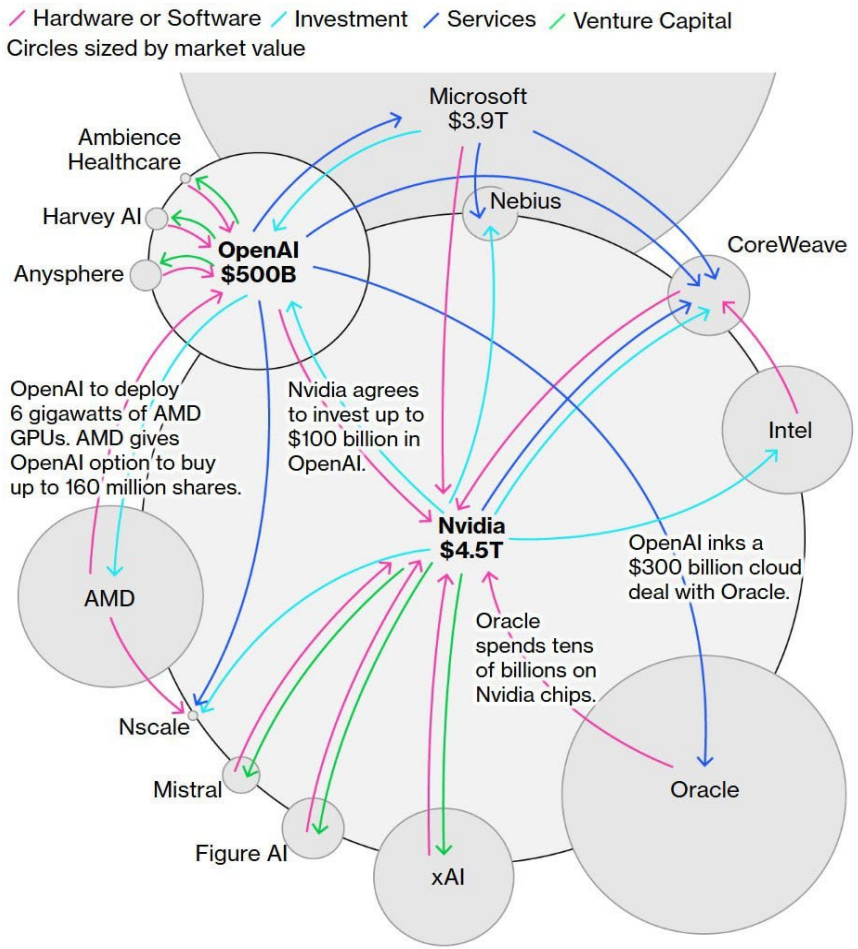
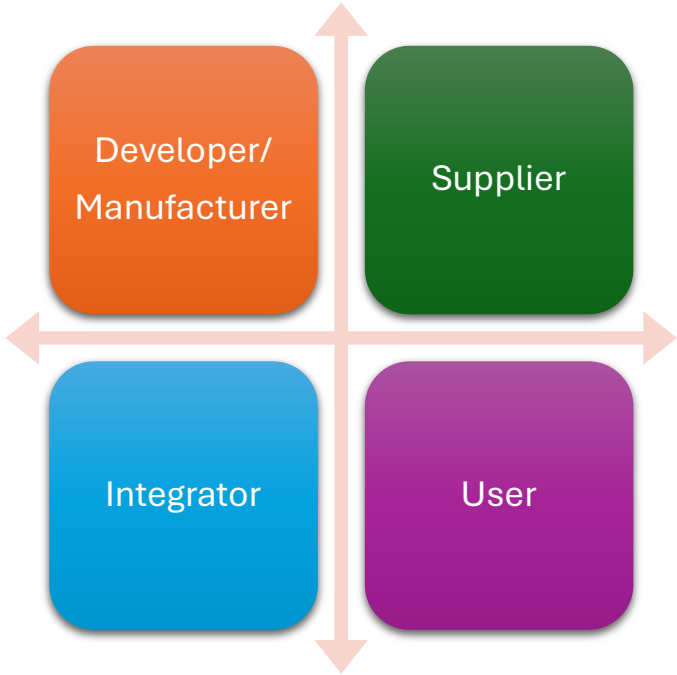
BATTERY DEVELOPER LOAD

- Developer problems/load to solve for commercialization
  - Electrodes
  - Separators
  - Electrolytes
  - Electrochemical Stability - Performance
  - PROCESS
  - SCALING
  - Assembly
  - BMS
  - Cell – Module – Pack – System
  - FOAK – Commercialization
- **Altogether these hard problems and heavyweight tasks can take 10+ years to go to market/manufacturing from inception**

Collaboration is the key to success & time to market – Learnings from AI



Source: Bloomberg News reporting



Easing the load - Accelerating Commercialization of Zinc Battery Technologies

Suppliers like Everzinc are open to being your partner in solving the Anode problems and supporting system level solutions

Suppliers can also work together to find the solutions

Anode – Electrolyte

Anode - Cathode

Cathode – Electrolyte

Separator Interfaces

Additive Manufacturers – Electrolytes, Polymers, Conductives etc.

Taking up the developer load to accelerate timelines

Electrodes

Separators

Electrolytes

Electrochemical Stability – Performance through additives

Longest running Rechargeable Zinc battery conference in the world conducted by Everzinc

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Let’s continue the conversation & collaboration

Invitation for R-Zinc May 2026, Nashville

www.r-zinc.com

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R-ZINC 4.0

Zinc Battery Meeting

May 2026, Nashville