

Understanding Zinc's Role in a Low-Carbon Economy

Most people know zinc is used for vitamins, sunscreen, or metal coating, but few are aware of its essential applications in transportation, infrastructure, electronics, and renewable energy.

Zinc's Role in Renewable Energy Production

Due to its superior ability to protect metals against corrosion and its growing role in energy storage and production, zinc remains an essential material for the future.

Zinc is 100% recyclable—it can be recovered and reused without a loss in quality.

Zinc coatings also protect solar panel fixtures and prevent rust.

A 100 megawatt hour (MWh) solar power park requires 240 tonnes of zinc

Offshore wind turbines require a zinc coating to handle extreme environmental conditions.

A 10 MWh offshore wind turbine requires 4 tonnes of zinc

Zinc is a key ingredient in battery technology that helps reduce carbon emissions.

Zinc-ion batteries are safer than lithium-ion batteries as they use a water-based chemistry, avoiding fires.

Zinc is widely mined in North America, strengthening domestic supply.

Galvanized steel requires zinc and is the preferred material used by electric vehicle manufacturers.

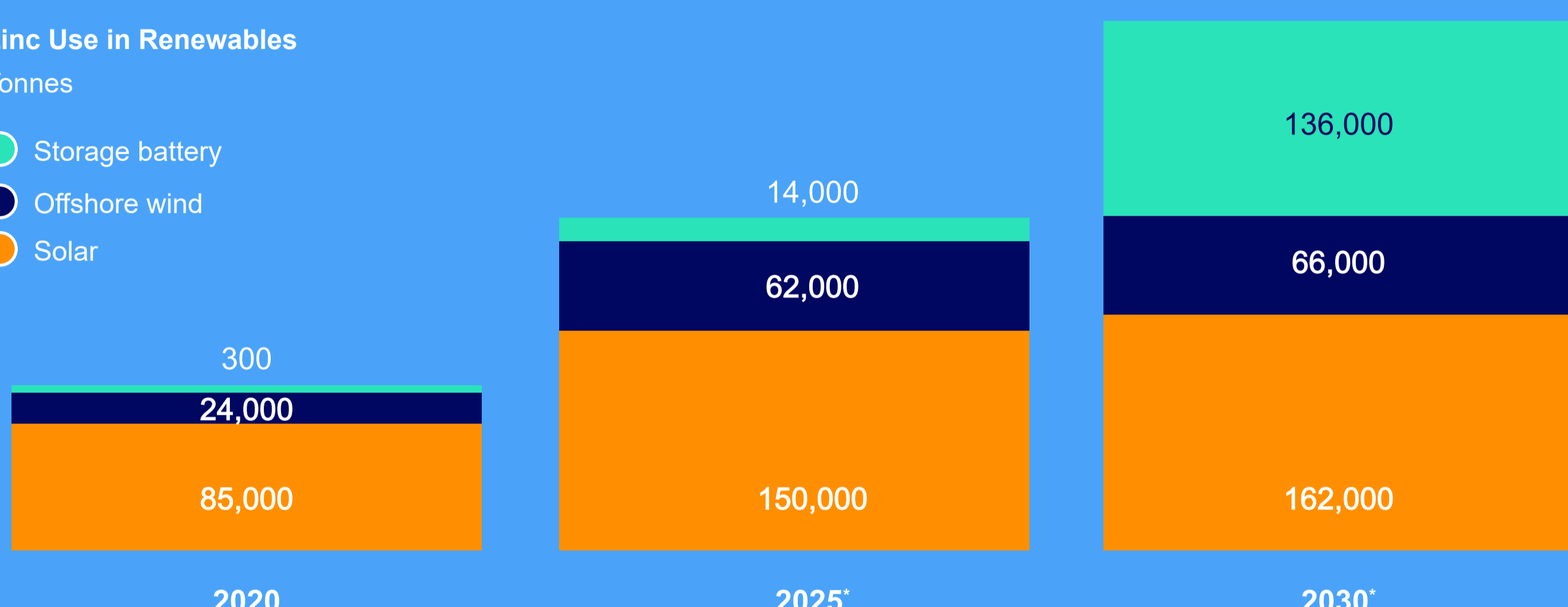
Source: International Zinc Association, A2Mac1

Growing Demand for Zinc

Accelerated investment and adoption of renewable energy is leading to growing zinc demand.

Zinc Use in Renewables
Tonnes

- Storage battery
- Offshore wind
- Solar



* Projected | Source: CRU, IRENA

Galvanizing the Economy

Zinc plays an important role extending the life of products made of steel. Doing so means that infrastructure such as bridges and power transmission systems do not need to be rebuilt as frequently, thus reducing emissions.

60%

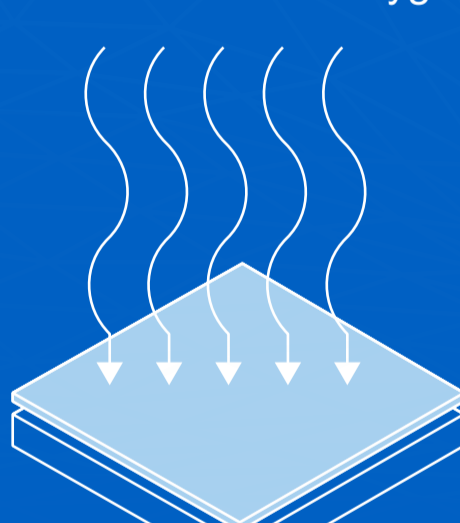
Protecting steel against corrosion is the most important market for zinc, representing 60% of the metal's use worldwide. This includes the steel in infrastructure and vehicles.

Zinc coatings extend steel's life on average by 9x vs. bare steel.

How Zinc Protects Steel

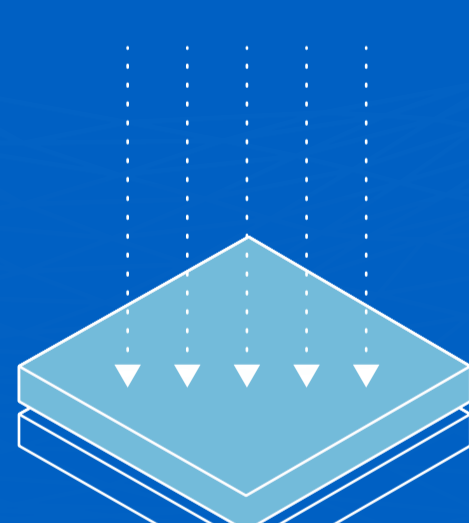
1

The protective zinc layer begins to form as soon as the zinc coating is exposed to the atmosphere. A layer of zinc oxide is formed by the reaction of zinc with the oxygen in the air.



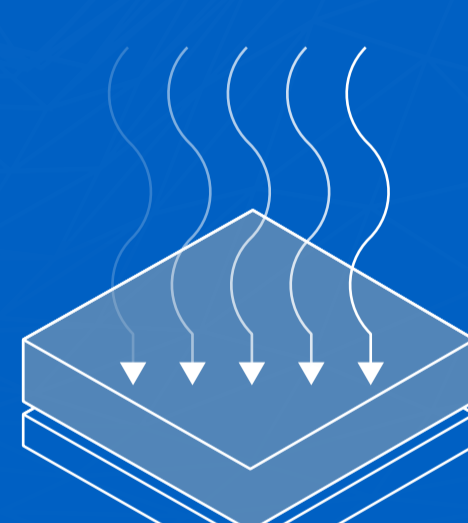
2

Moisture from rain or humid air reacts with the first layer to form zinc hydroxide.



3

Zinc hydroxide then reacts with carbon dioxide from the atmosphere, forming a barrier layer of tightly adherent, insoluble zinc.



Source: International Zinc Association

The Versatile Metal

From transistors to lasers, satellites to circuit boards, photocopiers to fuel cells, zinc is one of the most versatile and essential materials.

Zinc's Applications



Renewable energy



Batteries



Die-casting



Electronics



Space travel



Ceramics



Disease prevention



Paints



Brass and bronze production



Glass



Pharmaceuticals



Galvanizing steel or iron



Rubber



Sunscreen



Fertilizer

To stop corrosion, the original lead-based paint of San Francisco's iconic Golden Gate Bridge was replaced with a zinc silicate primer in 1995.

Zinc coatings ushered in the rust protection warranties seen in vehicles from the 1980s and onwards.

Source: International Zinc Association

As one of the world's largest producers of mined zinc, Teck is committed to responsible mining and delivering the metals necessary for a low-carbon future.

Presented by

Teck

Learn more about zinc's essential role in a sustainable economy.

Teck.com

NYSE **TECK**

TSX **TECK.A**

TSX **TECK.B**