



Renewable Energy Storage System (RESS)

Positively Ingenious. Renewable Energy Storage System (RESS) is accelerating the shift to clean energy with Zinc-Powered Energy Storage Solutions. Safe, Simple, Durable, Flexible and Available, our commercially proven; U.S. manufactured battery technology overcomes the limitations of conventional lithium-ion in 3 to 12 hour intraday applications. It's how, at Renewable Energy Storage System (RESS), we're putting American ingenuity to work every day to create a positive future for everyone.

Designed for a decentralized, democratized, and decarbonized energy system, Renewable Energy Storage System (RESS) solutions are helping power a cleaner tomorrow, today.

Wilson González
TWR CEO

Renewable Energy Storage System (RESS)



Zinc Powered Aqueous Liquid Battery Module

It's the intraday market's only U.S.. Designed and manufactured and fully commercialized alternative to lithium ion and lead acid monopolar batteries for critical 3 to 12 hour discharge duration applications.

Our latest generation (RESS) battery module sets new standards in simplicity, safety, durability, flexibility, and availability. Its ingenious design extracts the highest performance yet from our proven zinc hybrid cathode technology, solving the limitations that other stationery energy storage solutions ignore and transforming how utility, industrial, and commercial customers store power.

Technology	Zinc Hybrid Cathode
Voltage Range	22 to 48 VDC
Rated Power (DC) / Energy	0.2 kW / 0.9 kWh
Certifications	UL 1973, UL9540A
Dimensions	7.3 H x 14.7 W x 12.40 D in 18.5 H x 37.3 W x 31.50 cm
Weight	45 lbs / 20.5 kg



Three Proprietary Components



With more than 95 patents pending, published, or issued, our streamlined zinc-powered battery module design features an aqueous electrolyte, bipolar electrodes, and a polymer casing.

- Conductive plastic anodes (-) and carbon-felt cathodes (+) make up the Zinc electrodes. They're mechanically tough, corrosion resistant, and chemically stable, delivering for years with virtually no degradation. Plus, our bipolar structure simplifies internal battery connections to reduce internal resistance and improve round-trip efficiency.

Non-degradable
bipolar electrodes

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- Our innovative blend of water, halides, additives, and buffering agents make up our proprietary aqueous electrolyte. The formula both enhances zinc solubility and plating and eliminates the dendrite and densification issues that can lead to performance decay and safety hazards.

High-performance
aqueous electrolyte

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- A rugged, injection-molded thermoplastic polymer exterior provides an optimized structure into which our electrodes are inserted the design requires just 20 of them minimizing materials, manufacturing, and maintenance. And all while eliminating the risk of any external leaking.

Fully-sealed polymer
casing

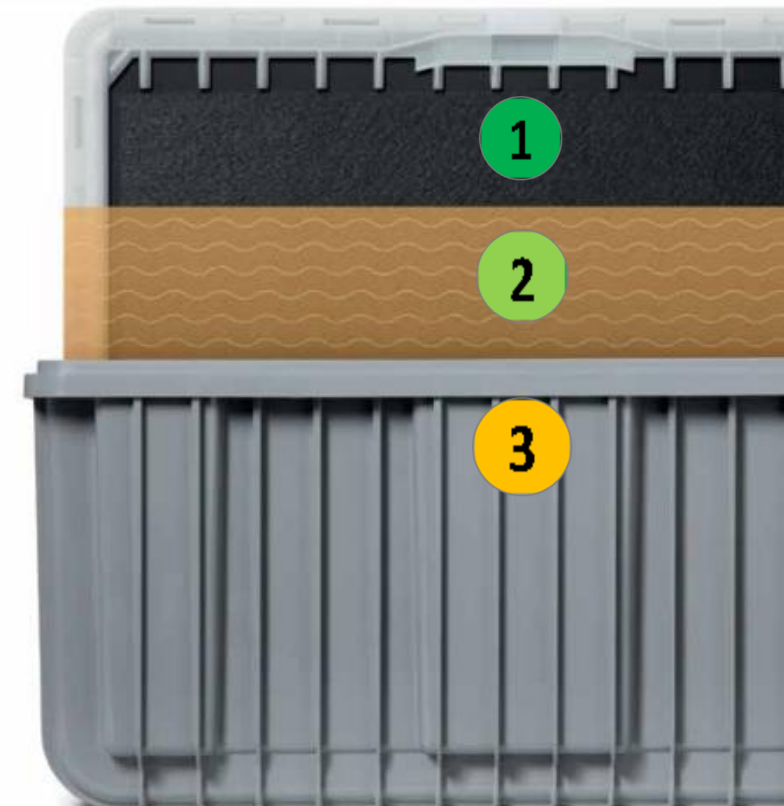
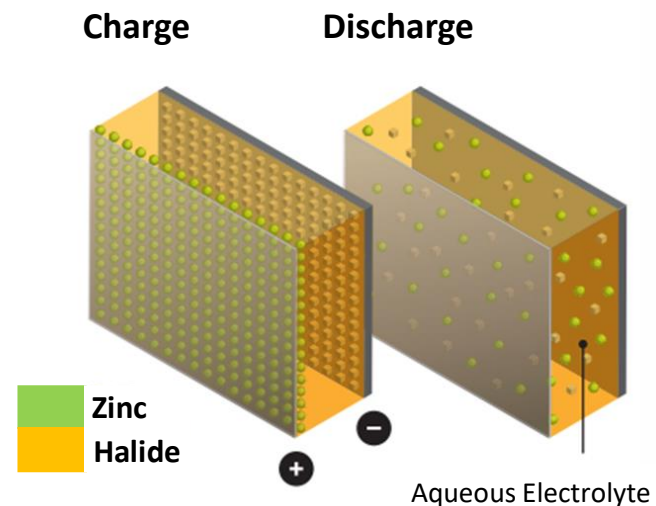
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Inspired by Zinc Plating Baths



With more than 95 patents pending, published, or issued, our streamlined zinc-powered battery module design features an aqueous electrolyte, bipolar electrodes, and a polymer casing.

Zinc battery modules store electrical energy through zinc deposition. Our aqueous electrolyte is held within the individual cells, creating a pool that provides dynamic separation of the electrodes. During charge and discharge, ions move through the electrolyte to their respective electrode to donate or accept electrons, creating a current flow through the bipolar stack.



Realizing the Full Power of Zinc



Simple

- Fully Sealed. Long Lived.

Safe

- Non-Flammable. Non-Corrosive.

Durable

- High Tolerance. Low Degradation.

Flexible

- Variable DoD. Variable Duration.

Available

- Reliable Supply. Ethical Sourcing.

Environment

- Environmentally Safe. No E-Waste.

Description & Information

A blue arrow pointing to the right, with the text "Description & Information" written along its path. The arrow has a blue circular dot at its tip.

Simple - Fully Sealed & Long Lived



Each Zinc battery module is a self contained unit, a closed-system design with no moving or delicate parts, so they're as easy and cost-effective to maintain as they are to manufacture. And they can last at least 6,000 cycles, almost twice the operational life of most conventional battery chemistries.

Lasts

20 years

or 6,000 cycles

Safe - Non-Flammable & Non-Corrosive



Zinc modules are inherently safe to use. With a water-based electrolyte and flame-retardant polymer framing, there's no risk of thermal runaway. When fully charged, they're at most mildly acidic (pH 2-4 range). And even when overcharged, only negligible levels of hydrogen are off-gassed.

Certified to the

UL1973

Batteries in Stationary
Applications Standard

Durable - High Tolerance & Low Degradation



No matter what conditions our Zinc battery modules face, they keep on going even with just a simple, short rest period with no change to their overall degradation curve. Which, at less than 9% over the first 3 years and then zero thereafter, is well below conventional standards.

Retains

>91%

of rated capacity over
product lifespan

Flexible - Variable DoD & Variable Duration



Our zinc-based battery chemistry is highly tolerant of significant variation in operational requirements. A Zinc module's storage duration can range from 3 to 12 hours, with no impact on degradation. And the maximum DoD (Depth of Discharge) can be reduced for applications demanding round trip efficiency in the mid-80s.

Maximum of
100%
Depth of Discharge
(DoD)

Available - Reliable Supply & Ethical Sourcing



Zinc modules require just five low-cost, widely used, earth abundant commodities, that have no geopolitical issues connected to their extraction. This enables local sourcing that minimizes the risk of supply chain disruptions and related price swings.

Approximately

85+%

of materials sourced
within the U.S.A.

Environment - Environmentally Safe & No E-Waste



When lithium-ion batteries are disposed of, they become electronic waste, also known as E-Waste. E-Waste has been declared one of our world's most pressing issues for environmental and human health by the United Nations. Our battery modules are eliminates E-Waste.

Recyclable

100%

Power that Stacks Up



Zinc battery modules are the building blocks of all of our ingenious energy storage systems. Our standard Zinc strings are racked in a variety of configurations to form our Renewable Energy Storage System (RESS) Cube, Hangar and Stack solutions.



TWR

Is committed to put all effort to make
this project happen, commitment
founded by our slogan,
"People Helping People"
We appreciate your valuable time



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