

ESS Iron Flow Batteries



CATALYZING A CLEAN FUTURE. EVERY DAY.

Clean, long-duration energy storage:
accelerating the energy transition



ESS long-duration energy storage advantages

Deliver resiliency, peak shaving, and renewables integration.

A field-proven technology backed by Munich Re.

ETL certified to UL 9540: safe, sustainable, and easy to permit.

Sourced from a robust, American supply chain.

Cleaner

Safe and sustainable electrolyte chemistry poses low risks to installers, customers, and the environment.

Some of the lowest lifecycle carbon emissions of any storage technology on the market. Iron flow batteries are recyclable at end of life.

Secure and resilient

Secure, reliable supply chain with no reliance upon critical minerals.

Long-duration energy storage enables a reliable, resilient grid.

Lower cost

Lowest levelized cost of storage (LCOS) of any long-duration technology.

Designed for 25-year design life with minimal annual operations and maintenance (O&M) requirements.



Safer

ESS's Energy Warehouse® products have been certified to the UL 9540 standard by ETL. UL 9540 is a comprehensive safety standard for grid-connected energy storage systems which affirms the safety of the battery system and its environmental performance. The standard covers stationary energy storage systems for both outdoor and indoor installations.

Battery chemistries matter

ESS iron flow batteries offer the lowest levelized cost of storage and a safe, sustainable chemistry using easy-to-source materials for the electrolyte – just iron, salt, and water.

With proven installations in the field, ESS's energy storage solutions, backed by an industry-leading warranty, have a 25-year design life with unlimited cycling and zero capacity fade.

ESS iron flow batteries have no risk of thermal runaway. Safe and sustainable electrolyte means minimal need for secondary containment.

Flexible. Sustainable. Responsible.

ESS technology serves a wide range of use cases



Utility-Scale Renewable Energy

Standalone LDES storage for large-scale renewable integration, community resiliency, and environmental justice.



Green Baseload Generation

Replace coal generation with renewables and long-duration energy storage to deliver green baseload generation.



Airside Operations

Electrify airside ground operations and replace diesel generators to supply planes with clean electricity while parked.



Distributed Generation

Behind-the-meter microgrid for energy shifting, load management, and resiliency with a less than five-year payback on energy cost.

Value on both sides of the meter: Solutions for utilities and C&I customers

The Energy Warehouse®

Designed to serve commercial and industrial customers, each unit delivers over five hours of energy at rated power.



The Energy Center™

Created for utility-scale applications, this solution delivers up to eight hours of energy at rated power that is flexible and scalable.



About ESS Inc.

At ESS (NYSE: GWH), our mission is to accelerate global decarbonization by providing safe, sustainable, long-duration energy storage that powers communities, industries and businesses with clean, renewable energy anytime and anywhere it's needed. As more renewable energy is added to the grid, long-duration energy storage is essential to providing the reliability and resiliency we need when the sun is not shining and the wind is not blowing.

Warranty partner



ESS Tech, Inc. has partnered with Munich Re to launch industry-first insurance coverage of our flow batteries. The innovative policy means the battery modules in our storage solutions come with up to 10-year extended warranty backed by a global investment-grade insurer.

Qualified Projects deployed during the Policy Period of Jan. 1, 2023 – Dec. 31, 2024 can obtain additional warranty back-stop by Munich Re, with insurance capacity exclusively allocated at project level.



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