

Energy Warehouse[®]



CATALYZING A CLEAN FUTURE. EVERY DAY.

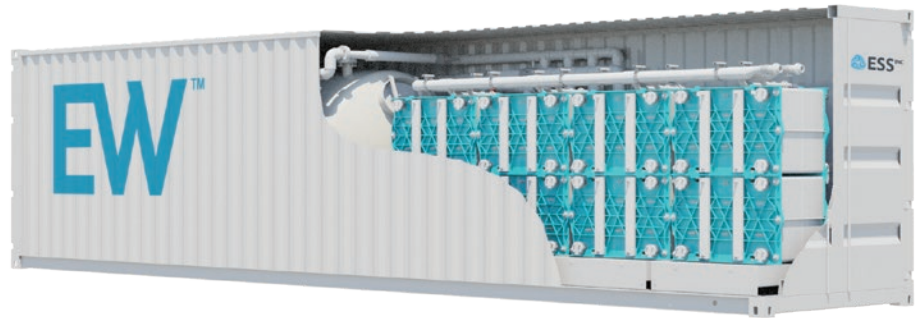
Long-duration energy storage solution for commercial and industrial applications

Features

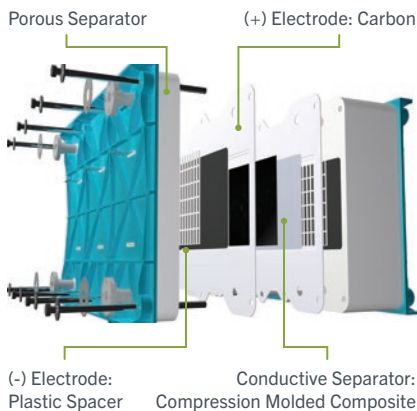
- Containerized, fully-integrated design
- Long-duration storage
- Black start option (DC)
- Long life, >20,000 cycles, low maintenance

Benefits

- Flexible, scalable, and addresses multiple use cases
- Environmentally safe, sustainable electrolyte – made of iron, salt, and water
- No cooling/air conditioning requirement
- Fast and easy permitting – ETL certified to UL 9540



Flow technology: Ideal for multiple use cases



Unlike typical batteries that are packaged as fixed cells or modules, a flow battery allows the power (the rate of electricity flow) to be decoupled from the capacity (the total amount of energy held). As a result, users have the flexibility to use the battery for a variety of use cases simultaneously on a project.

What sets the Energy Warehouse apart?

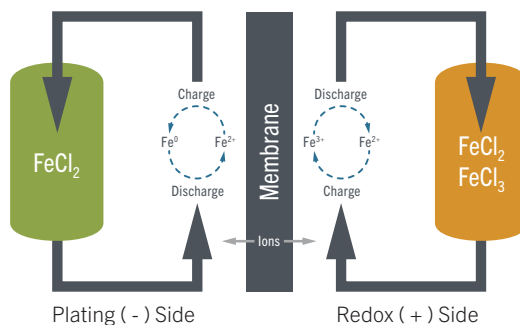
The Energy Warehouse (EW) is an environmentally sustainable battery with no capacity fade or cycling limitations throughout its 25-year design life. These features make it ideal for traditional renewable energy and utility projects needing long-life and unlimited cycling capability. Plus, the EW's inherent quick-response power electronics can perform various ancillary services, support microgrids, and offer additional value through peak shifting and demand load management.

Superior life cycle

Redox, a contraction of the words “reduction” (a gain of electrons) and “oxidation” (a loss of electrons), is a reaction in which electrons are transferred between chemical species. Using the same electrolyte on both the negative and positive sides of a battery eliminates cross-contamination, which helps these batteries last longer.

Unlimited cycling technology

The ESS patented electrode design and control system allow the Energy Warehouse to operate at high efficiency over an unlimited number of deep charge and discharge cycles with no degradation or capacity fade. ESS products are engineered for a 25-year design life with minimal annual operations & maintenance (O&M) requirements.



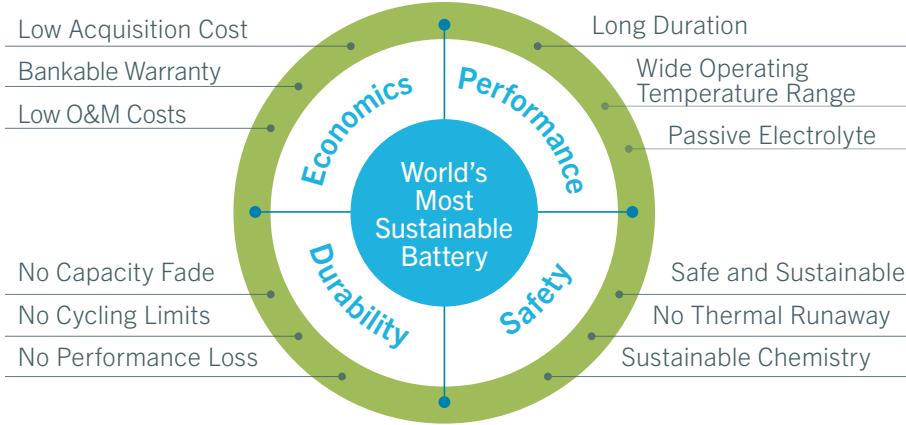
With the same electrolyte running on both the negative and positive sides, there is no risk of cross contamination.

Safe. Sustainable. Flexible.

Energy Warehouse®



Lowest leveled cost of storage



The EW is a flexible long-duration energy storage system that safely and effectively addresses the broadest range of energy and power applications at a lower Levelized Cost of Storage (LCOS) than other technologies on the market.

Specifications

Features	
Maximum Continuous Discharge Rate	75 kW at POI at electrolyte temperature of 50°C
Nameplate Power	90 kW at POI at electrolyte temperature of 50°C
Nameplate Energy Capacity	400 kWh DC at electrolyte temperature of 50°C
Nominal DC Voltage	880 VDC ± 5% bi-polar
Optional AC Voltage	400 VAC / 50 Hz, 3-phase or 480 VAC / 60 Hz, 3-phase
Response Time	< 1 second depending on operation mode
Expected Life	25-year design life
Controls	On-board battery management system: Modbus interface (SunSpec protocol)
Communication Options	24/7 remote monitoring (TCP/Ethernet interface)
Certification	Inverter UL 1741-SA certified UL 1973, UL 9540, UL9540A, IP54, CE mark (EU version only)
Mechanical	
Footprint	29.7 m ² or 320 ft ² ; Seismic rated (option)
Dimensions	12.2 m x 2.4 m x 2.9 m (40 ft x 8 ft x 9.5 ft)
Max Transport Weight	17,000 kg (37,479 lbs)
Max Operating Weight	41,000 kg (90,390 lbs)
Environmental	
Battery	Iron, salt, water, aluminum, steel, recyclable plastics
Electrolyte	FeCl ₂ , KCl, H ₂ O; re-usable, recyclable
Ambient Temperature	0°C to +40°C (+32°F to +104°F) rated operation
Warranty	1 year comprehensive defect warranty; Optional 10-year extended warranty on core components

Warranty partner



ESS Tech, Inc. has partnered with Munich Re to launch industry-first insurance coverage of its flow batteries. The innovative policy means our long-duration storage solutions are now backed by a full 10-year performance guarantee, regardless of project size or location.

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.

For more information, contact



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