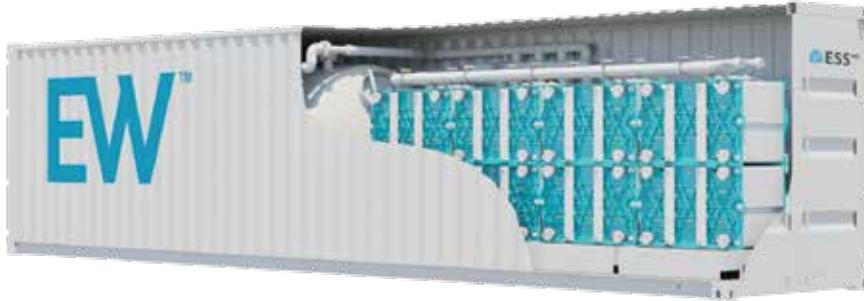


SAFE, LOW-COST ENERGY STORAGE SOLUTION FOR COMMERCIAL & INDUSTRIAL APPLICATIONS

Environmentally sustainable, long-duration energy storage



WHAT SETS THE ENERGY WAREHOUSE APART?

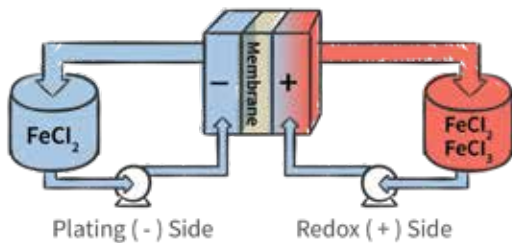
The Energy Warehouse (EW) is an environmentally sustainable battery with no capacity fade or cycling limitations throughout its 25-year operating life. These features make it ideal for traditional renewable energy and utility projects needing long-life and unlimited cycling capability. Plus, the EW's inherent quick-response power electronics can perform ancillary grid services such as voltage and frequency support on microgrids or regulation service when participating in energy markets.

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.

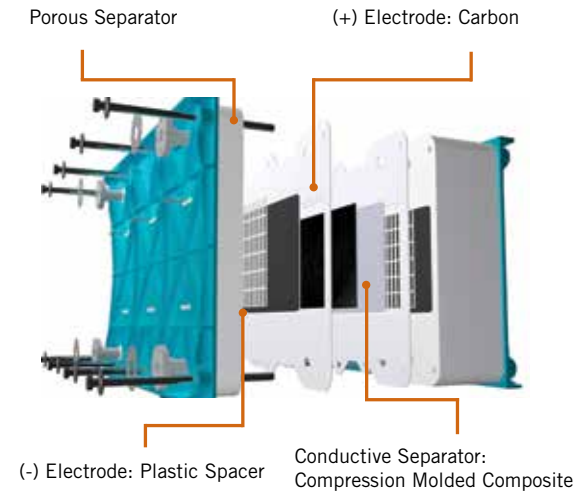
UNLIMITED CYCLING TECHNOLOGY

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 designed for a 25-year operating 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.

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.

FEATURES

- Warranty backed by Munich Re
- Long-duration storage
- Black start option (DC)
- Long life, >20,000 cycles, low maintenance

BENEFITS

- Cost-effective, made of Earth's basic elements
- Environmentally safe, non-toxic electrolyte;
 - no risk to environment or personnel
- No cooling/air conditioning requirement
- Fast and easy permitting – no hidden liabilities;
 - no hazmat compliance plan requirement

SPECIFICATIONS

Features

Nominal Power:	75kW
Peak Energy:	400kWh
Standard DC Voltage:	880 VDC plus/minus 5% bi-polar
Optional AC Voltage:	400-480 VAC, 3-phase, 50/60 Hz
Response Time:	<1 sec.
Module Cycle Life:	>20,000 cycles
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 9540, UL 9540A, IP54, CE mark (EU version only)

Mechanical

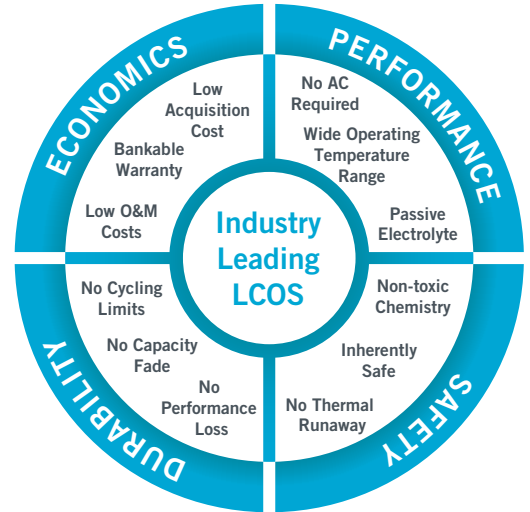
Footprint:	320 ft ² or 29.7 m ² ; Seismic rated
Dimensions:	12.2 m x 2.4 m x 2.9 m (40 ft x 8 ft x 9.5 ft)
Max Weight (Dry):	16,000 kg
Max Weight (Wet):	38,000 kg

Environmental

Battery:	Recyclable components
Electrolyte:	FeCl ₂ , KCl, H ₂ O; re-usable, recyclable
Ambient Temperature:	-5°C to +40°C
Warranty:	1 year comprehensive defect warranty 10 year warranty backstop underwritten by Munich Re



LOWEST LEVELIZED 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.

Warranty partner



ESS 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.

For more information, contact:



ESS, Inc.
26440 SW Parkway Ave.
Wilsonville, OR. 97070
Tel: (855) 423-9920
Email: info@essinc.com
www.essinc.com

Copyright © 2022 ESS, Inc. All rights reserved.
Specifications may change without notice.
EW_Datasheet_2022_Rev-1