

Energy Center™



Flexible, safe, and low-cost
utility-scale energy storage solution

Features

- Warranty backed by Munich RE
- Can be optimized for power, energy, RTE, charge time, and duration
- No cooling / air conditioning requirement
- Footprint:
One acre supports up to 6 MW / 48 MWh; Up to 8-hour discharge at rated power
- 96%+ plant availability over a 25-year operating life
- No thermal runaway
- 25-year design life

Benefits

- Safe and sustainable
- No power or energy degradation regardless of cycling duty
- Low O&M costs
- Fast and easy permitting—no hidden liabilities; no hazmat compliance plan requirement

What sets the Energy Center apart?

With the Energy Center, you're getting a commercially-ready system using battery technology backed by Munich RE. The Energy Center supports a wide range of applications:

- Time-shifting renewable energy use
- Smoothing the intermittency of renewables
- Providing ancillary grid services
- Supporting capacity needs and more



Easy deployment and operation

Energy Center's simple all-iron electrochemistry consists of earth-abundant iron, salt, and water. The system's environmentally-benign characteristics make it the greenest and easiest-to-permit storage technology in the world.

With safe and sustainable chemistry and no thermal runaway, the iron flow battery eliminates the need for fire-suppression and hazmat requirements. In addition, the system is substantially recyclable at end-of-life.

- Safe and sustainable
- Benign chemistry enables standard, lower-cost components for construction

Customizable and upgradable

ESS has worked closely with leading engineering firms to deliver a design-build approach that enables systems to be tailored to meet any project size with a configurable range of power and energy capacities starting at 145 kW DC for 8 hours with capability to offer extended energy durations. Essentially, the Energy Center units can be configured to deliver customized power and discharge durations, maximizing project flexibility and delivering the lowest operational cost to owners.



Safe. Sustainable. Flexible.

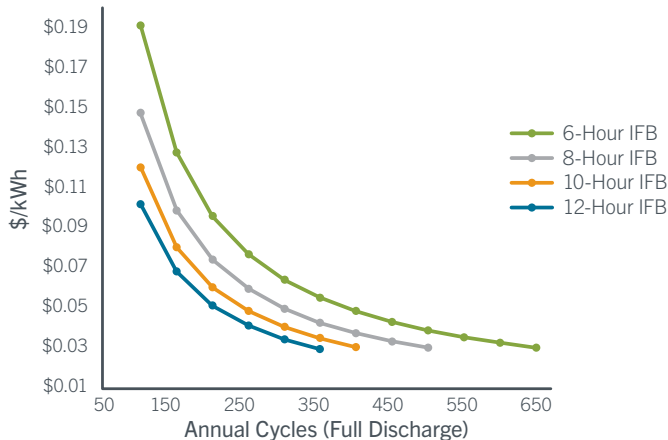
Energy Center™

Unparalleled flexibility

The Energy Center 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.

6 to 12-hour, 25 MW Energy Center

Capital cost / cycle capability, 25-year project life



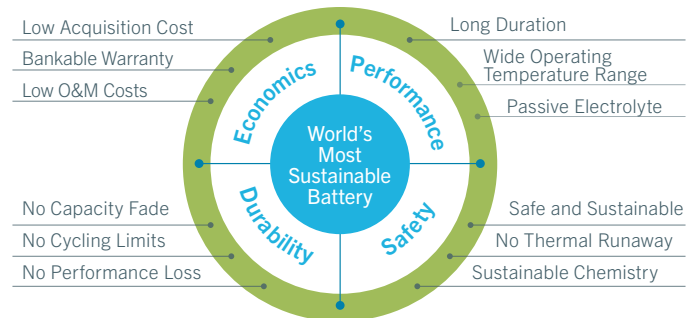
Specifications

Features	
Nameplate Power	145 kW DC
Nameplate Energy Capacity	1,160 kWh
Maximum Charge Rate	174 kW
Voltage	880 VDC \pm 5%
Response Time	< 1 second depending on operation mode
Module Cycle Life	>20,000 cycles
Communication	24/7 remote monitoring (MODBUS TCP/Ethernet interface to EMS/SCADA)
Certification	Conforms to UL 1973, UL 9540 (pending), UL9540A (pending)
Environmental	
Battery	Recyclable components
Electrolyte	FeCl ₂ , KCl, H ₂ O; re-usable, recyclable
Ambient Temperature	-5°C to +40°C (+23°F to +104°F) rated power
Warranty	10-year battery module (underwritten by Munich Re) Extended warranty to 25 years available

Lowest cost per kWh

Using earth-abundant materials in its chemistry – iron, water and salt – keeps the cost of manufacturing the Energy Center lower than comparable storage technologies with different chemistry. For applications that can use 6+ hours of discharge and frequent cycling, the iron-flow battery Energy Center delivers the lowest cost per kWh over its 25-year lifetime.

Safest and greenest battery on the planet



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



ESS Tech, Inc.
26440 SW Parkway Ave
Wilsonville, OR 97070

Tel: (855) 423-9920
Email: info@essinc.com

www.essinc.com