

# ESS Iron Flow Technology



CATALYZING A CLEAN FUTURE. EVERY DAY.

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



## Who we are

ESS Tech, Inc. (NYSE: GWH) is the leading manufacturer of long-duration iron flow energy storage solutions (LDES). ESS was established in 2011 with a mission to accelerate decarbonization safely and sustainably through longer lasting energy storage.

We build flexible storage solutions that allow our customers to meet increasing energy demand without power disruptions and maximize the value potential of excess renewable energy.

## Why long-duration energy storage

Building a clean, resilient and secure energy system will require significant energy storage to meet growing demand from AI data centers and enable intermittent sources of energy to provide baseload power. This is projected to include up to 8 TW of LDES by 2040.

## Safe and sustainable to source, build, and operate

ESS technology is easy to site and safe to operate. Iron flow chemistry relies upon broadly available materials without critical minerals such as vanadium, lithium or cobalt, and is built in the U.S. and supported by an American supply chain, the ESS is supporting American Energy Dominance.

Our technology is engineered for flexibility and scale to deliver gigawatt-hour storage and meet the demands of an evolving grid with no degradation or capacity fade. It is purpose-built to solve long-duration energy storage.

ESS has hundreds of patents pending or awarded. ESS technology has been validated by multiple third parties including the U.S. Department of Energy, global insurance leader Munich Re. In addition, ESS has partnered with Honeywell, a global leader in advanced materials and energy systems, to continue to advance iron flow technology.

## Iron flow technology benefits



Up to 22 hours of energy storage



Safe, sustainable field proven technology



Scalable, flexible and rapidly deployable



Low total cost of ownership



American-made with ~98% U.S. supply chain



25 year design life with unlimited cycling and no capacity fade

# ESS technology serves a wide range of use cases



**Data Centers**  
Meet rapidly growing demand from data centers with ESS technology.



**Green Baseload Energy**  
Enable intermittent sources of energy to provide baseload power with scalable ESS technology.



**Utility-Scale DER**  
Standalone LDES storage improves reliability and ensures resilience.



**Industrial Microgrids**  
Behind-the-meter microgrids provide backup power and enable customers to better manage costs.



**Electrifying Transport**  
Enable fleet electrification without the need for costly infrastructure upgrades.

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

### The Energy Base™

Built on a modular platform, the Energy Base solution offers durations of 8-22 hours up to gigawatt-hour scale delivering the LDES capacity needed for a clean, resilient and reliable energy system.



### The Energy Center™

Created for utility-scale applications, this solution delivers eight hours of energy storage with a turnkey, containerized solutions.



### The Energy Warehouse®

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



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.



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