Long-Duration Energy Storage Systems for a Cleaner Future

August 2024

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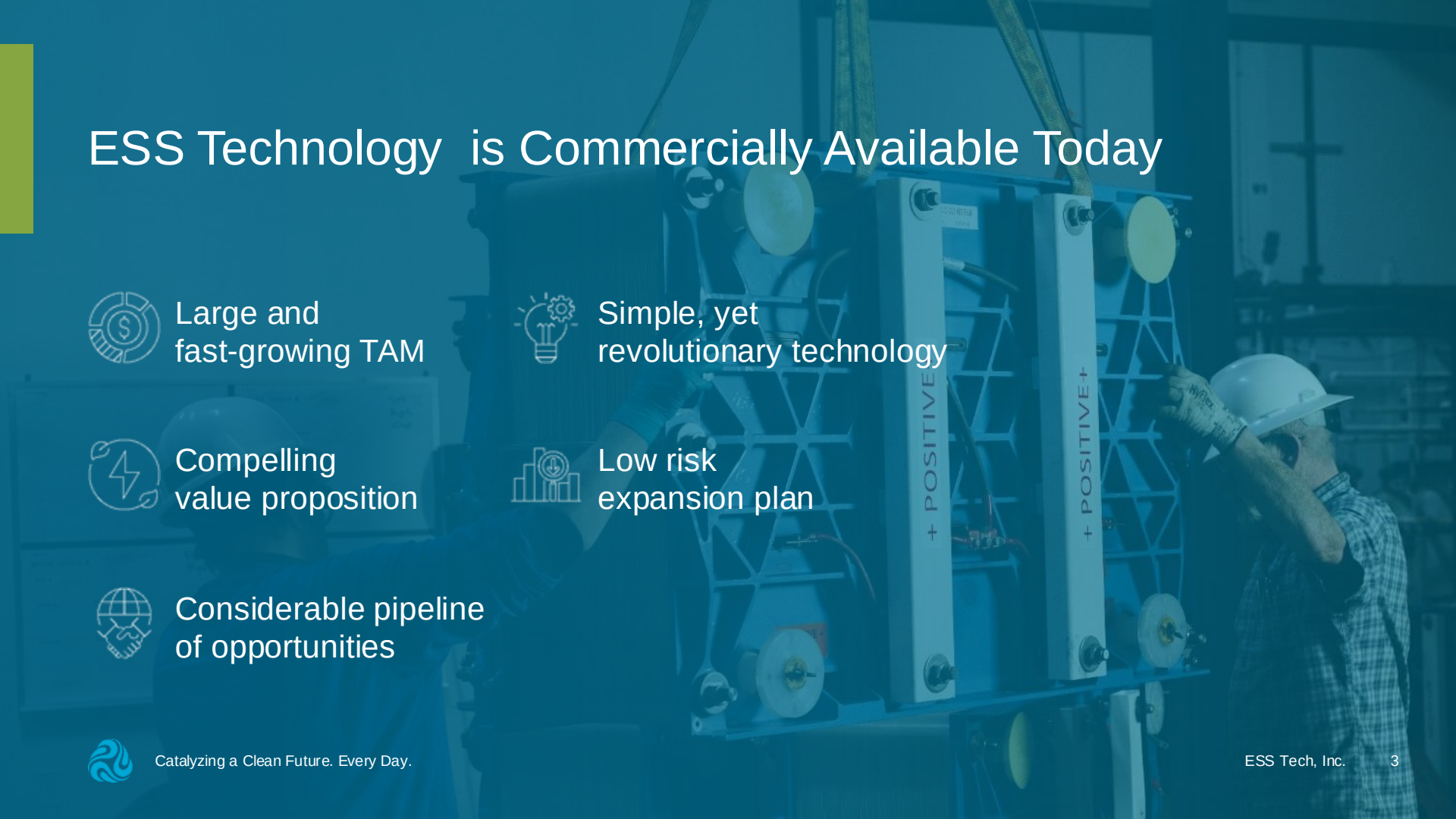
Company Overview

ESS	Founded in 2011 with mission to develop the safest, most cost-effective and sustainable long-duration energy storage technology
Headquarters	Wilsonville, Oregon
Facilities	200,000 ft^2 manufacturing plant Automated production line currently scaling to 2GWh annual production
Employees	~300
Technology	Iron flow battery for utility-scale and commercial applications
Publicly traded	NYSE: GWH

ESS Technology is Commercially Available Today

- Large and fast-growing TAM
- Simple, yet revolutionary technology
- Compelling value proposition
- Low risk expansion plan
- Considerable pipeline of opportunities



ESS: An Enduring Value Proposition

ESS delivers the safe, market leading, long-duration energy storage solutions that empower our customers to make their clean energy vision a reality.

Flexible Technology

ESS' scalable solutions serve a variety of needs and will underpin the decarbonized energy system of the future.

Powered by Nature

Iron. Salt. Water.
Simple ingredients provide a natural, cost-effective, long-duration solution.

Responsible and Equitable

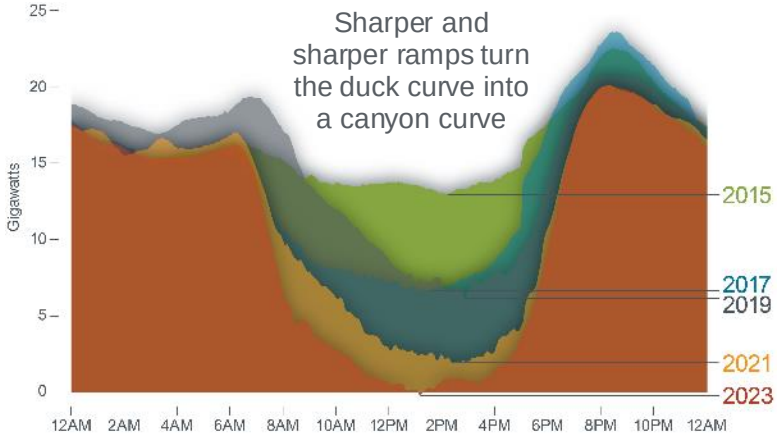
Domestically produced to deliver benefits to communities worldwide.

Resiliency and reliability

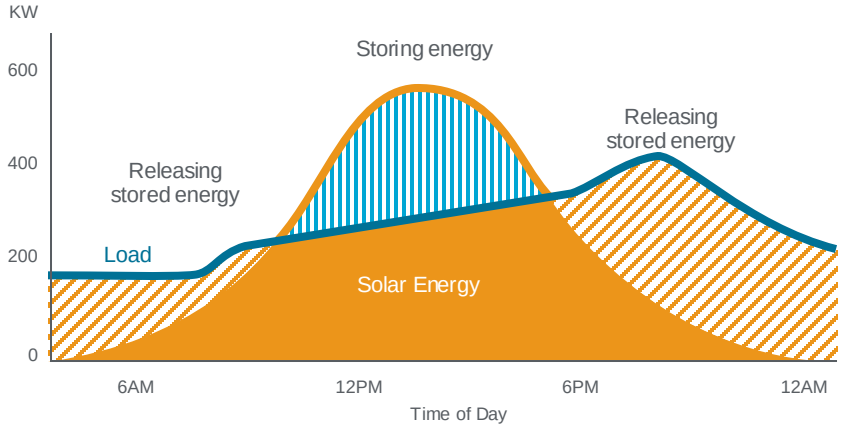
are harder with intermittent resources.

Significant Market Tailwinds Building Momentum

Renewable Penetration Drives Energy Storage Needs



Overgeneration and curtailment result



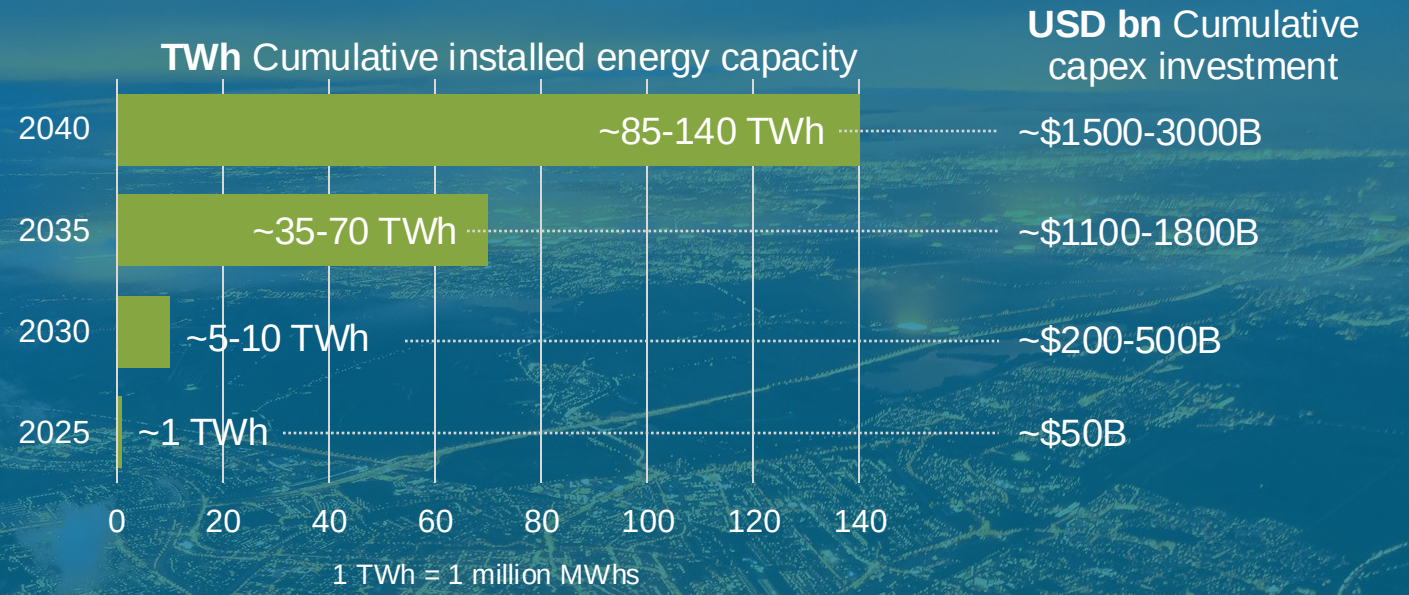
Energy shift to evenings using long-duration storage

Lack of storage caused more than **2.6 TWh to be wasted in 2023** in California alone

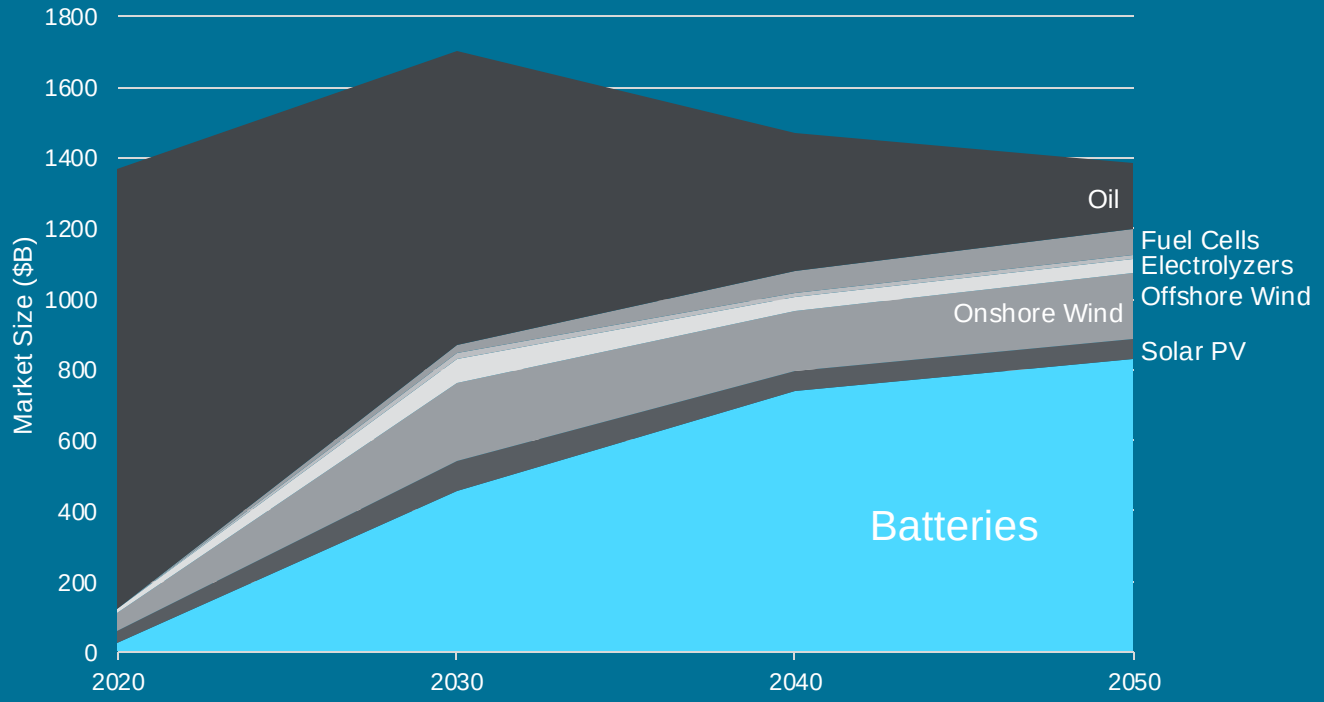
Source: EIA, CAISO and Company reports

Transition to Renewable Energy Will Require 140 TWh of Long-Duration Energy Storage

Equalling $3 Trillion in Investment

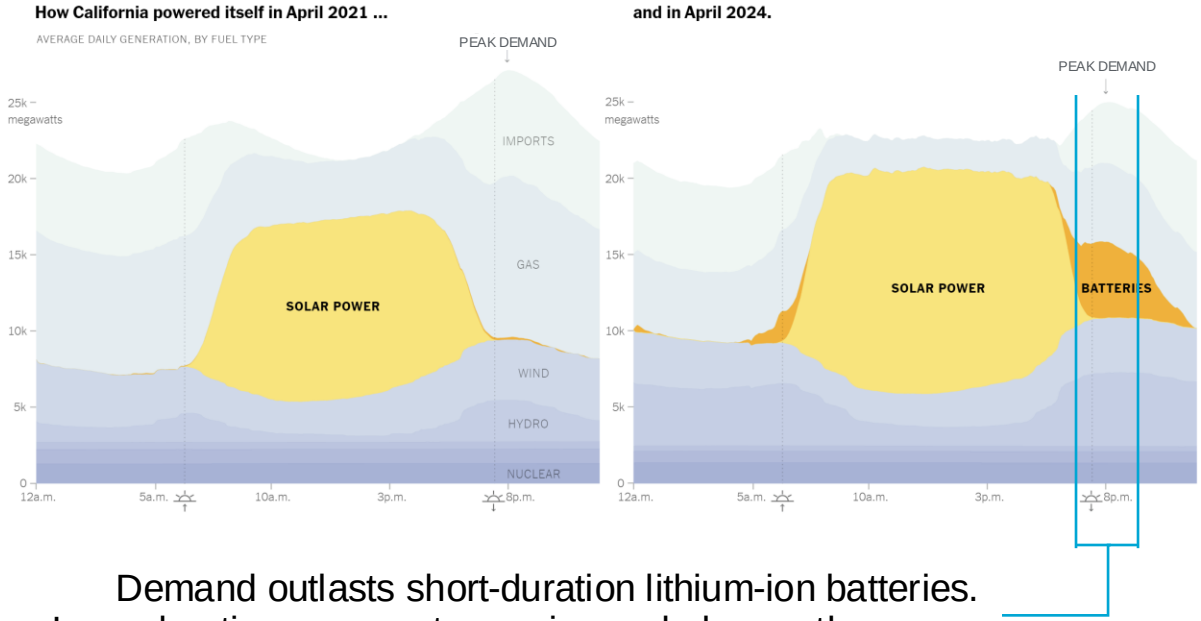


Batteries are a BIG Part of the Solution



Source: IEA, World Energy Outlook, 2021

Renewable Penetration Drives Energy Storage Needs



Demand outlasts short-duration lithium-ion batteries.
Long duration energy storage is needed more than ever.

The New York Times

Giant Batteries Are Transforming the Way the U.S. Uses Electricity

"The future is bright for energy storage," said Andrés Gluski, chief executive of AES Corporation, one of the world's largest power companies. "If you want more renewables on the grid, you need more batteries. It's not going to work otherwise."

"Today's lithium-ion batteries typically only deliver power for two to four hours before needing to recharge…
… a start-up called ESS is building "flow" batteries that store energy in liquid electrolytes and can last 12 hours or longer."

Source: https://www.nytimes.com/interactive/2024/05/07/climate/battery-electricity-solar-california-texas.html

Li-ion Presents Roadblocks to Energy Transition

Short-term energy capacity

Critical mineral mining

Expensive long-term

Energy security

Global Collaboration to Advance Iron Flow Battery Market Adoption

Go-To-Market

Honeywell to integrate ESS technology into global go-to-market offering

$300M targeted purchases in first phase of agreement

Global reach to Honeywell's customers

Intellectual Property

ESS license to Honeywell's flow battery intellectual property

Joint Innovation

Companies invest in joint development for continual technology advancement, cost reduction and packaging of IFB systems

Honeywell

"The demand for long-duration energy storage represents a compelling market opportunity within the energy transition and the combination of Honeywell and ESS technology can accelerate decarbonization for the commercial, industrial and utility sectors."

Bryan Glover
Chief Growth Officer
Honeywell Performance Materials and Technology (PMT) group

Representative ESS Projects

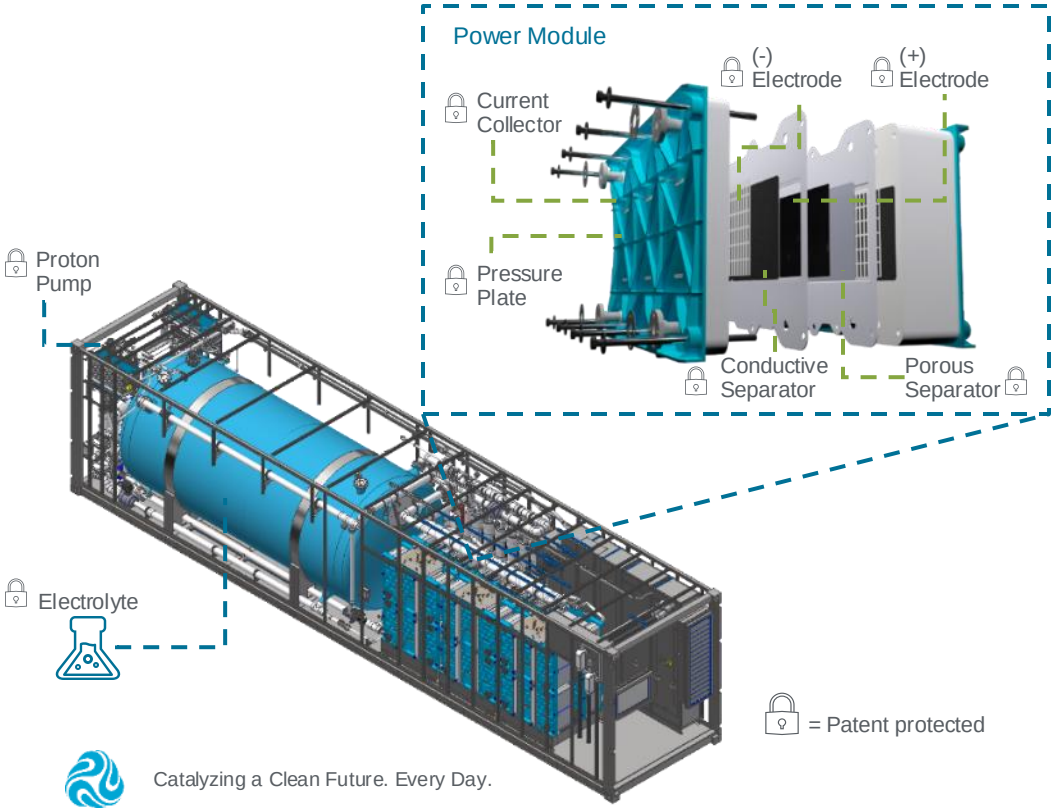
Commercial Traction: Significant, Signed Agreements

Customer	Background	Deal Details	Status
Sacramento Municipal Utility District	Large, CA-based utility serving 1.5 million electricity customers Aggressive decarbonization targets	Shipped first phase Developing LDES Center of Excellence Enabling 2030 Zero Carbon Plan – 2GWh of storage by 2028	Phase 1 commissioning completed Units cycling at customer site
Energy Storage International – Asia Pacific	ESI is our distribution and manufacturing partner in AU/NZ/Oceania	Expected to deliver 1GWh of iron flow batteries over the next 7 years	Initial delivery complete Recently announced contract with Energy Queensland
LEAG	Currently operating large-scale lignite mining and coal-fired generation Implementing a vision to transform the coal-dependent region into Germany's green powerhouse	50MW / 500MWh iron flow battery system Expected to provide standardized building block for LEAG's planned 2-3GWh of LDES	Completed initial engineering contract Moving to detailed engineering phase Target COD 2026

Commercial Traction: Deals with Large Upside

Customer	Background and Deal Details	Broader Opportunity
Turlock	Pairing storage with solar that will cover CA aqueducts, providing multiple benefits Demonstration of new solar storage for grid firming and evening arbitrage	20-50MW by 2030 Excess solar to capitalize in ISO for peak shifting Part of Project Nexus designed to prove use case of storing excess solar over state and utility aqueducts
Schiphol	Large European airport; leading the way to decarbonize ground operations as part of the TULIPS consortium	Targeting emission-free and zero-waste at the EU's 300+ airports by 2030 and climate-neutral aviation by 2050
Consumers Energy	Microgrid powering the White Pigeon Gas Compression Facility	Potential for 7MW of IFB deployments across all seven gas compression plants
Burbank Water & Power	Renewable energy integration	Potential for 5MW by 2028 as part of decarbonization efforts Model for public power market

Differentiated Iron Flow Design and IP Protected



ESS IP portfolio

- 250+ patents granted and in pipeline pending applications
- Undisclosed number of trade secrets and identified patents
- World-leading iron flow expertise and roadmap to additional breakthroughs and advantages
- ~44% employees have an engineering background

Scalable by simply adding more electrolyte

- Same system + more electrolyte = longer duration

Energy Warehouse™ Overview

First commercial deployment in 2015

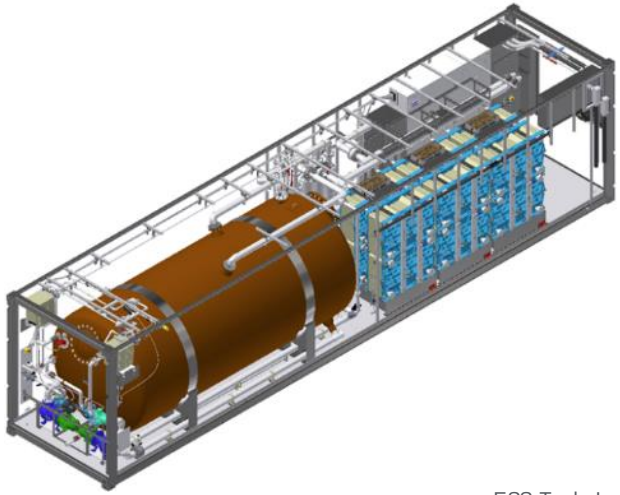
Fully integrated containerized design

EW-500 shipping in 2024

Fast and easy to deploy and commission

Specifications

Rated Discharge Power	75 kW at POC
Rated Charge Power	90 kW at POC
Rated Capacity	420 kWh
Discharge Capacity	Up to 500 KwH
Ambient Temperature	-15ºC to +50˚C (5ºF to 122ºF) Operating Range
Expected Life	25-year design life with no degradation
Warranty	1-year comprehensive defect warranty Extended warranty available
Certifications	Conforms to UL 1973, UL 9540, UL9540A, NFPA 855



Energy Center Overview

Front-of-the-meter solution

Modular design for utility-scale applications

Currently in production, scaling in H2 2024

Specifications

Configurable Range	Customizable up to GW scale
Rated Capacity	145 kW DC / 1.16 MWh DC
Ambient Temperature	-15ºC to +50°C (5ºF to 122°F) Operating Range
Expected Life	25-year design life
Secondary Containment	Integrated into tank container to volume of largest tank
Warranty	1-year comprehensive defect warranty Extended warranty available
Certifications	Conforms to UL 1973, UL 9540*, UL9540A*
	*pending

ESS Benefits

Made in USA

What Customers Demand	ESS INC	How ESS Transforms the Grid
Longer duration	• Up to 12 hours • No capacity fade • No power fade	• Can replace coal and gas with solar and wind • Designed for utility-scale applications
Low cost	• Lower LCOS than other technologies • No augmentation required	• The first truly low-cost flow battery • In commercial production today
Power on demand	• 25-year lifetime with no daily cycling limit • No degradation • Flexibility allows multiple revenue streams	• Improved grid resiliency and flexibility • Enables multiple use cases
Safety, reliability, and bankability	• Conforms to UL 1973, UL 9540*, UL9540A, NFPA 855 (Energy Warehouse) • Wide operating temperature range	• Can deploy in a wide range of geographies • No HVAC needed – cuts CAPEX and OPEX
Sustainability	• Safe and sustainable • Easily sourced materials; recyclable components • “Plug and play” with 25-year design life	• Environmentally sustainable • Accelerates clean energy transition

*Certified to UL 9540 by ETL

85%+ Less Capital Required – Ready to Scale Globally

Simple, low-cost production in the USA

$in millions/GWh of production capacity

VS

Source: Lux Research

EXIM Partnership Provides Long-Term, Low-Cost Financing to Support Growth

EXPORT-IMPORT BANK OF THE UNITED STATES

Up to $50 million in total funding

Long-Term

Low-Interest

Funds for increasing manufacturing capacity

Expect to draw:

$10 million in 2024

$10-15 million in 2025

Extended repayment terms

Interest-only payments until 2026

Our 2024 Operational Focus

01

Scaling manufacturing capacity, including automation and injection molding processes

02

Improving supply chain quality and outsourcing non-core components

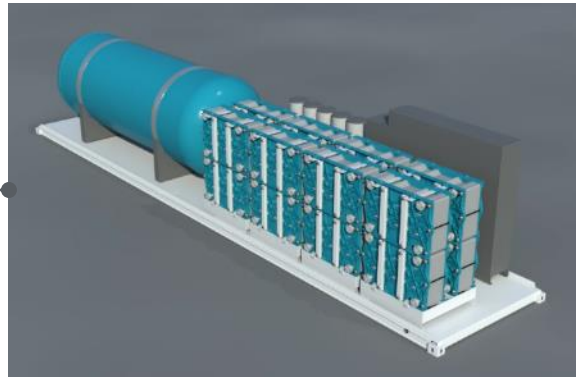
03

Optimizing product designs through simplification of electrical and plumbing installations

04

Reducing time to commission solutions at client sites

Four Major Technologies of the Iron Flow Battery



Battery Modules (Stacks)

Intellectual property that differentiates ESS
Generates the electricity
More complex build processes

Proton Pumps

Intellectual property that differentiates ESS
Keeps the iron flow battery electrically balanced
Moderate build complexity

Electrolyte

High-grade iron, salt, and water
Mixture simple to combine

Balance of System (BoS)

Necessary componentry to make the other three work together
Low build complexity, many parts – like a giant washing machine
Great benefits in streamlining assembly

Orchestrating these four technologies into a single system

2023 Improvements

Build & Commission

60% ↓

Brought down costs to build an EW by almost 60% in 2023

45% ↓

Lowered labor hours for balance of system by 46%

73% ↓

Lowered the cycle time to build an EW by 73%

25% ↑

Improved electrolyte increasing energy density by 25%

50% ↓

Time to commission an EW at a customer site cut in half

Intellectual Property

78 ↑

Filed 78 new patents

31 ↑

31 new patents granted for a total of more than
85 patents granted

Financial

50% ↓

Cut Q4 EBITDA loss cut in half year over year

$108M ↑

$108M in cash and short-term investments on balance sheet

Q2 2024 Results

Revenue

$348 thousand

Adjusted EBITDA

Loss of $18.8 million

Non-GAAP Operating Expenses

$9.1 million

Cash and short-term investments

$74.4 million

Will Add ~$10 million in cash from low-interest funding from EXIM in '24


Thank You