



# ESS<sup>INC</sup>

Catalyzing a Cleaner Future. Every Day.



NYSE: GWH

Investor Presentation  
March 2026

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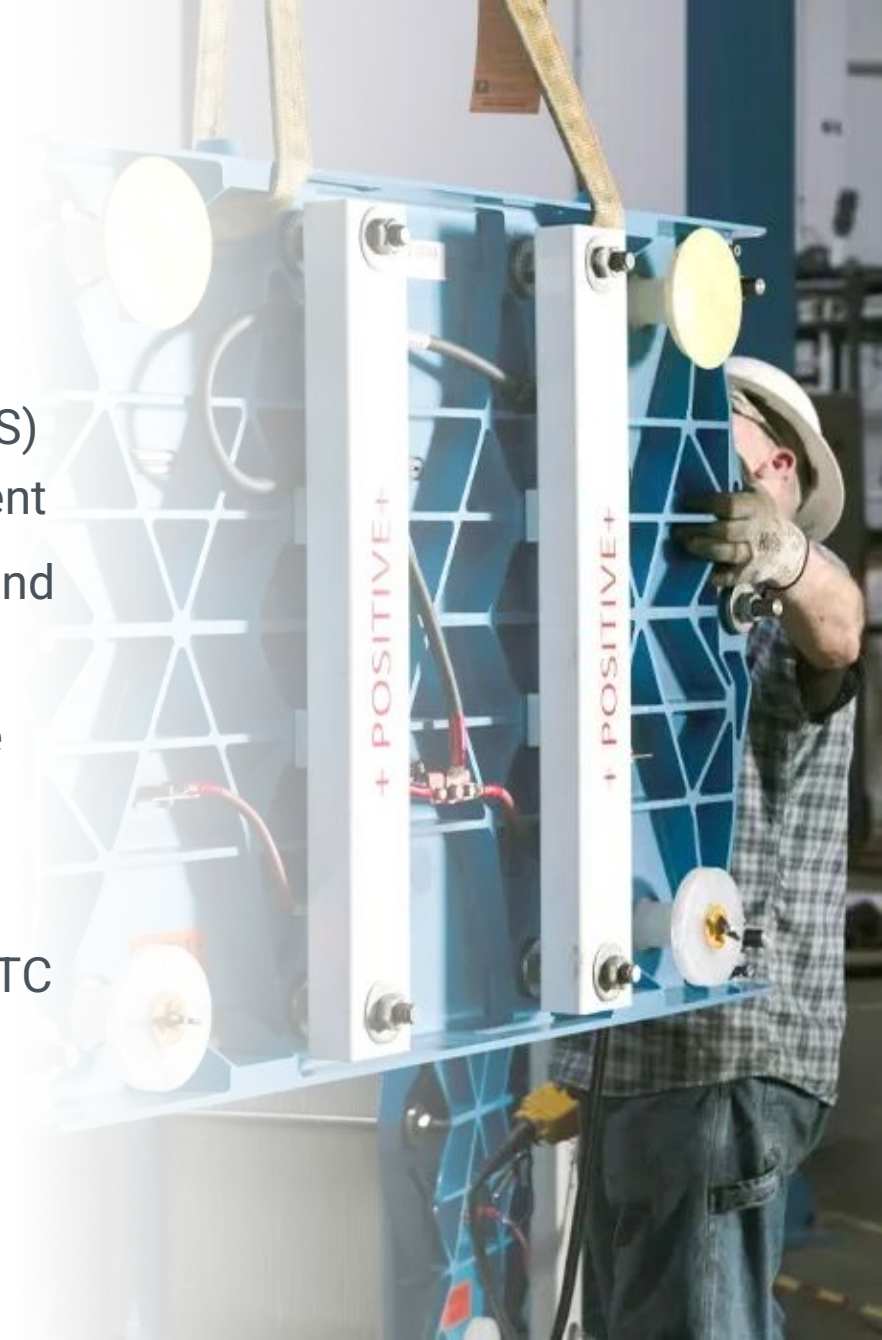
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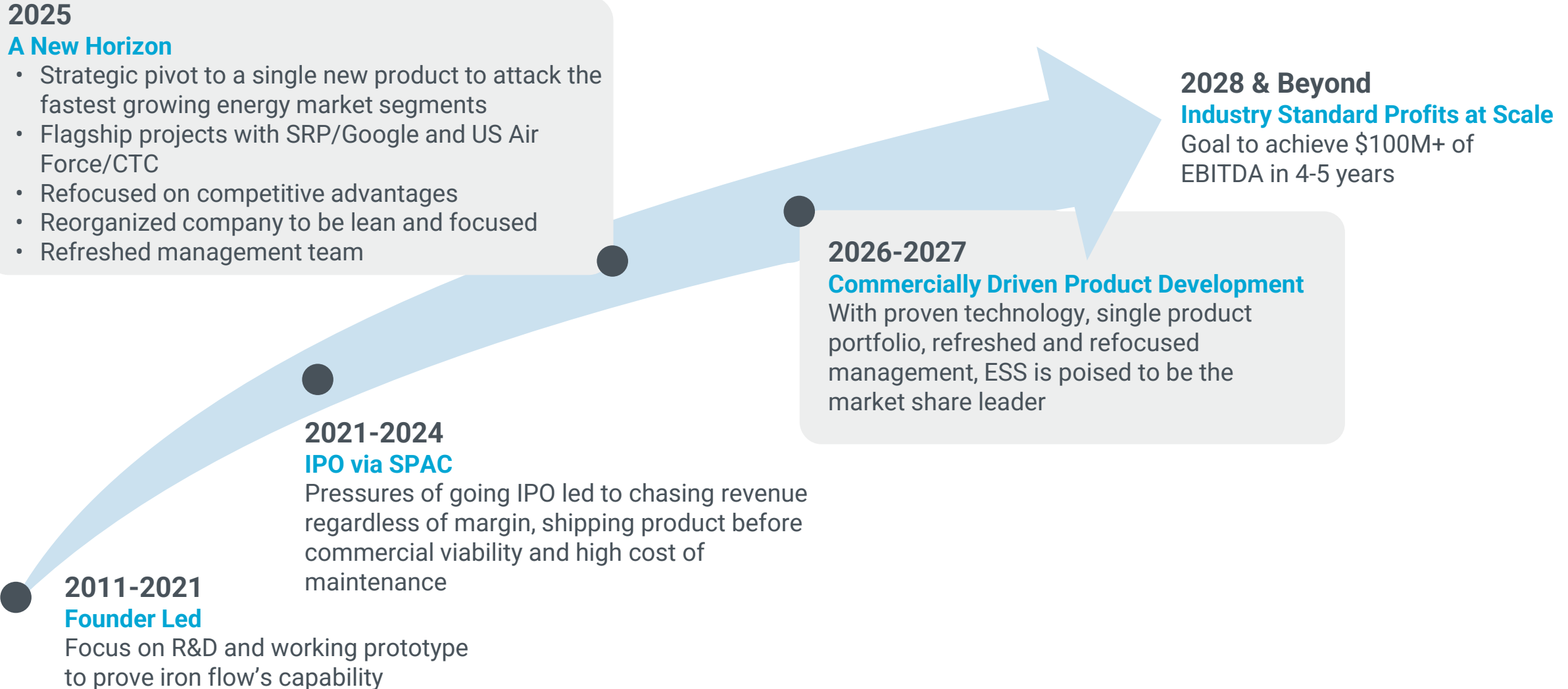
# Corporate Overview

**ESS is the leading manufacturer of long-duration iron flow energy storage solutions.**

- **“Energy Base”**: 10-20 hour long-duration energy storage systems (LDES) for 24/7 renewable power where Li-ion is too costly, unsafe, or inefficient
- **Iron flow**: stores energy using iron, salt, and water for a safe, durable, and U.S. sourced Li-ion alternative
- **Open-architecture, non-containerized** design for utility scale and large industrial/infrastructure projects, decoupling energy and power
- **100MW scaled manufacturing capacity** in place
- **Tier 1 pipeline** with flagship projects: SRP, Google, and US Air Force/CTC
- **3 contracts** with value ~\$50M expected to deliver in 2026-2028



# Company Timeline



# Global Energy Storage Market & ESS Addressable Segments



## Demand for power is inflecting

The EIA now expects U.S. electricity use to set new records in 2025 and 2026, reversing a decade of flat demand after the mid-2000s driven in part by surging hyperscale data center demand.



## Traditional sources are running out

The US Coal fleet is shrinking: operating coal capacity is scheduled to fall from 172 GW (May 2025) to 145 GW by end-2028 (-27 GW). Retirement of coal and gas capacity is creating a growing need for firm, clean alternatives.



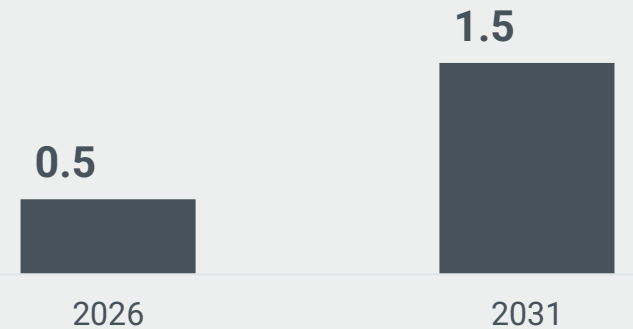
## Capacity additions must come from renewables & batteries

In 2025, solar and battery storage accounted for 81% of planned U.S. capacity additions (≈32.5 GW solar; ≈18.2 GW batteries).

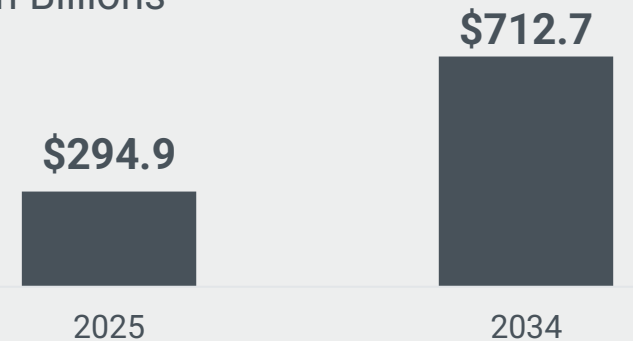
## Total Energy Storage Market

Global energy storage demand is projected to exceed 3 TWh and \$200B+ of cumulative system value by the early 2030s, driven by renewable penetration, grid electrification, and rising power demand

### Global Energy Storage Market Installed Base in Terrawatt<sup>1</sup>



### Global Energy Storage Market \$ in Billions<sup>2</sup>



# Long Duration Energy Storage Opportunity

## A Significant SAM within a Massive TAM

### Solving the 24-Hour Day

Long-duration batteries are required to support the baseload when solar and wind are not producing

#### <10 Hours

- Lithium-ion (LFP) is the clear winner for short duration, but beyond ~9h, its economics collapse

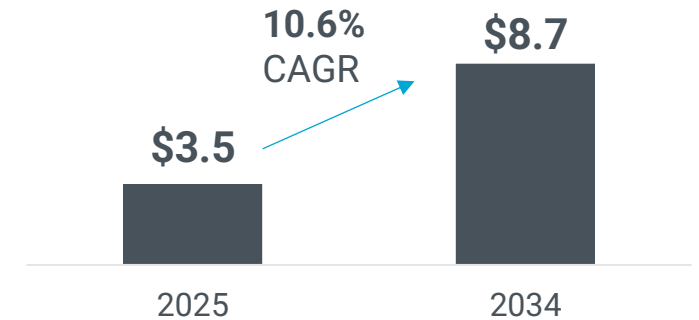
#### 10-20 Hours

- Iron-flow is best positioned to win with optimized daily discharge, long life, unlimited cycling.

#### 20+ Hours

- Utilities are piloting projects, signaling momentum for multi-day storage

Long Duration Energy Storage Market  
\$ in Billions<sup>1</sup>



### Key Customer Segments

#### Utilities & Grid Operators

Used for firming renewables, replacing peaker plants, capacity adequacy, transmission deferral

#### Independent Power Producers & Developers

Solar + storage, standalone storage, capacity contracts, merchant power optimization

#### Hyperscale Data Centers & Large Load Customers

24/7 clean power, resiliency, load balancing, grid support. The most urgent gap is 10-to-20-hour storage

#### Government & Defense

Use cases: base resiliency, microgrids, energy security, extreme-weather performance

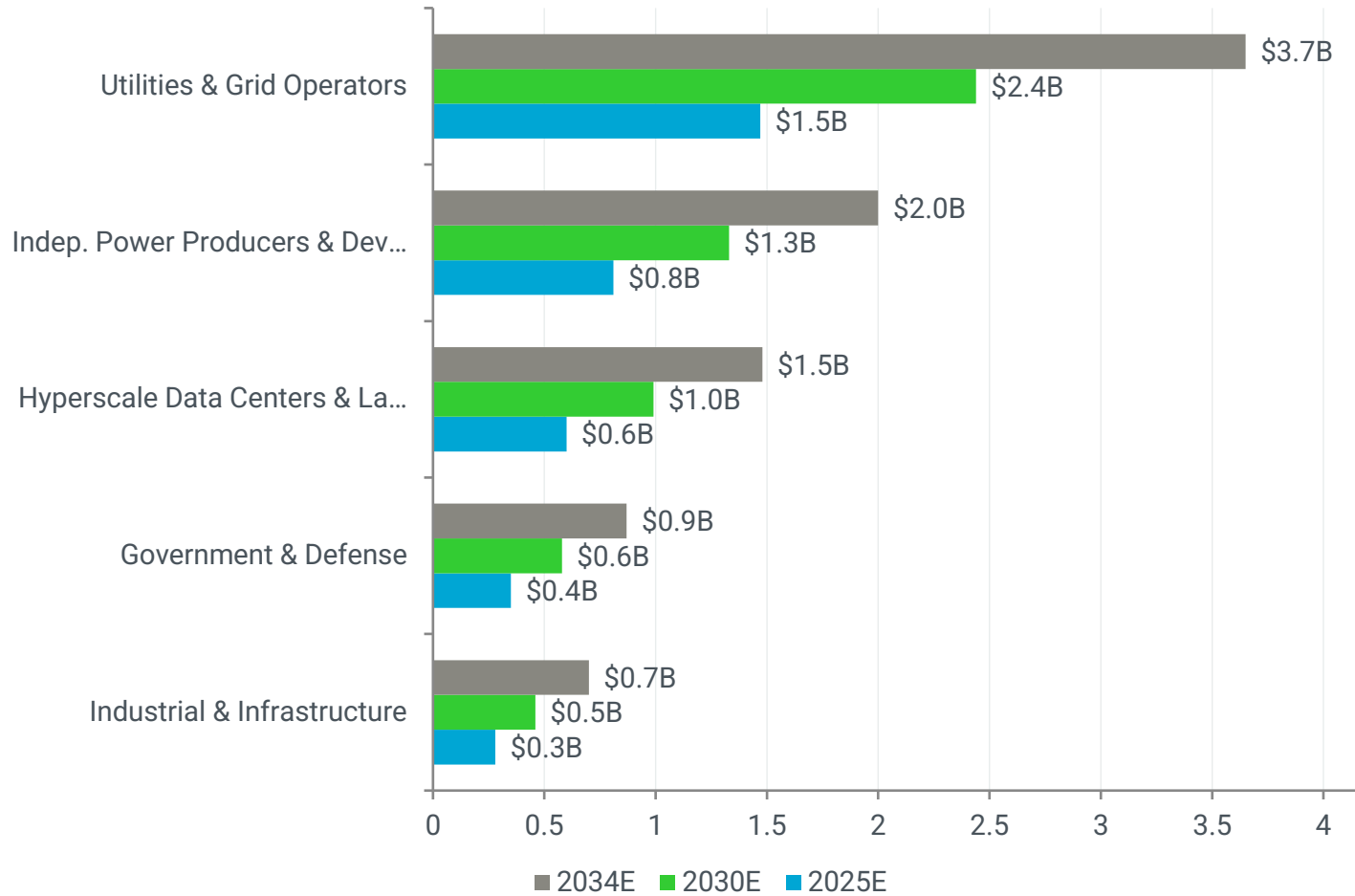
#### Industrial & Infrastructure Customers

Smaller projects overall for peak management, on-site renewable integration



# LDES Market Size by Customer Segment

**\$3.5B TAM in 2025 Growing to \$8.7B by 2034 at 10.6% CAGR**



## Utilities & Grid Operators

**\$1.5B → \$3.7B**

Firming renewables, replacing peaker plants, transmission deferral

## Indep. Power Producers & Developers

**\$0.8B → \$2.0B**

Solar + storage, capacity contracts, merchant power optimization

## Hyperscale Data Centers & Large Load

**\$0.6B → \$1.5B**

24/7 clean power, resiliency, load balancing – 10-20hr gap most urgent

## Government & Defense

**\$0.4B → \$0.9B**

Base resiliency, microgrids, extreme-weather performance

## Industrial & Infrastructure

**\$0.3B → \$0.7B**

Peak management, on-site renewable integration



# Energy Base

## Flagship Long-Duration Storage Solution

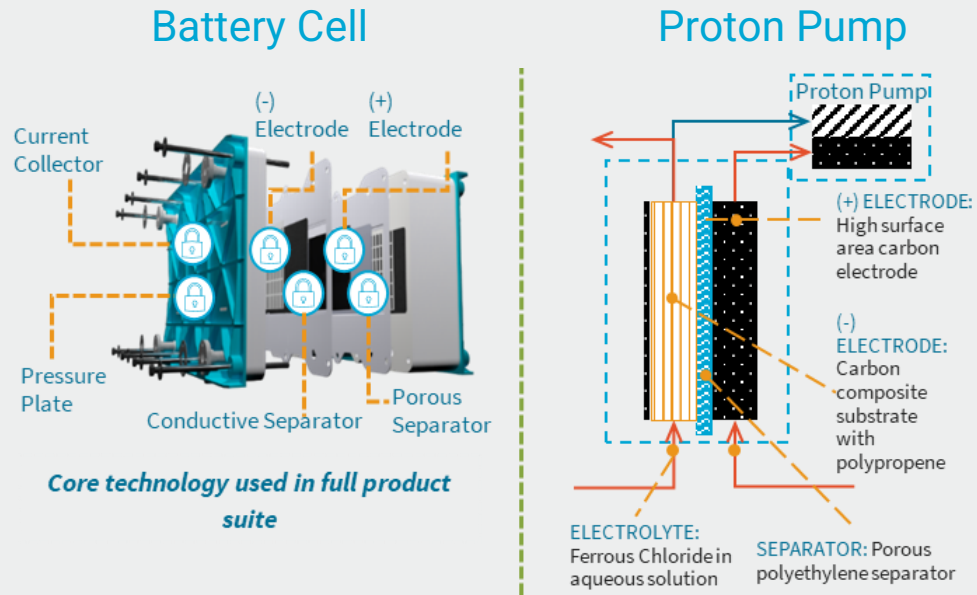
- Purpose built to deliver 10–20 hour long-duration storage where lithium economics break down,
- Enables renewable energy to provide reliable, around-the-clock power, and scalable to longer durations
- Iron flow core technology aligns directly with daily-cycling, long-duration use cases, the fastest-growing gap in energy storage
  - Provides a lower lifetime cost of storage versus lithium-ion at longer durations
- Open-architecture, non-containerized system
  - System engineering is not confined, and the tank resides externally, decoupling power and energy and allowing for infinite scalability without replacing battery stacks
- Designed for utility-scale projects and large industrial and infrastructure applications
- Fire-safe, non-flammable chemistry
- Operates across extreme temperatures
- Designed for long life with unlimited cycling and minimal degradation



# Iron Flow Battery - Proprietary Core Technology

Safe, Durable, and Domestically Sourced Alternative to Lithium-ion

Iron flow battery stores energy using iron, salt, and water



Key Patented Technologies Create Significant IP Moat

Battery Module (Stacks)

High build-complexity component that stores electricity

Proton Pumps

Moderate build-complexity component that enables daily cycling

Electrolyte Solution

Simple mixture of high-grade iron, salt and water with selective additives

Robust patent portfolio with 100+ patents



# Lithium vs. Iron Flow

## IFB Has Clear Advantages

LFP dominates in short durations (2-8h), making up 80%+ of new battery installations in this segment.



### Exposed Supply Chain

98% of LFP cathode production is in China, and over 90% of Li-ion batteries are produced outside the USA.



### Costs Balloon with Hours

Pushing Li-ion to 10-20h means buying proportionally more cells. LCOS rises with duration as energy is tied to cell count.



### Safety Penalties

LFP's flammable electrolyte adds BOS space and permitting issues.

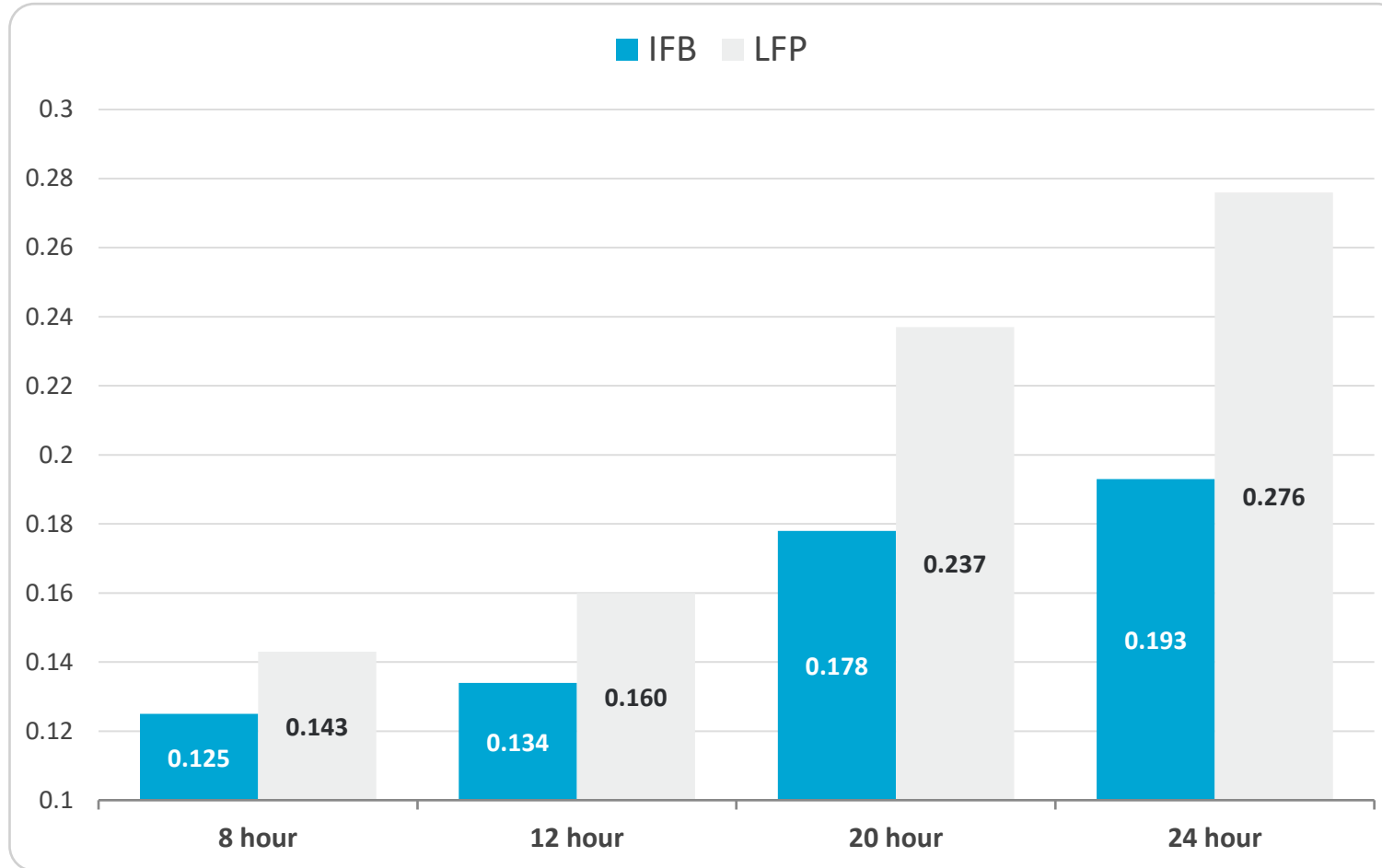


Iron Flow Batteries cost and technology advantages increase with duration



# LCOS Comparison: Iron Flow vs. Lithium

## IFB Advantage Grows With Duration



### Key Takeaways

#### Iron Flow is cheaper at every duration

IFB LCOS ranges from \$0.125/kWh at 8 hours to \$0.193/kWh at 24 hours, while LFP ranges from \$0.143/kWh at 8 hours to \$0.276/kWh at 24-hour durations

#### Advantage grows with duration

Cost gap widens from ~14% at 8 hours to ~43% at 24 hours. As duration increases, lithium LCOS rises sharply while IFB remains competitive

#### Optimized for long-duration grid needs

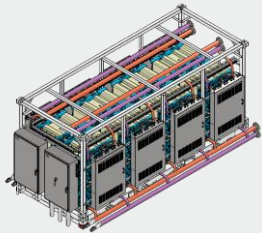
ESS Energy Base targets 10–20-hour storage where IFB cost advantage is most pronounced, making it the clear economic choice for long-duration grid applications



# In-House Core Technology Production

## Engineering, Procurement, & Construction (EPC) Cost Control

ESS to manufacture core technology in-house while balance of system can be procured directly from ESS ecosystem vendors



Electrolyte

Design Specifications

ESS manufactures its core components on a pre-fab, modularized basis and provides design specifications for a fully installed Energy Base

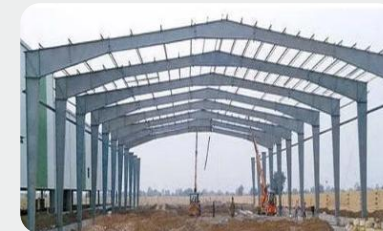
**Production Capacity:** Up to 1G currently – Line 1 and next-gen Line 2 under construction, with capacity to scale quickly

Balance of system and industry standard site equipment are procured close to project site from preferred vendors and shipped to site

### ESS Ecosystem: Qualified EPC & Developer Partners



Electrolyte Tanks



Iron Core Enclosure



Plumbing & Mechanical

ESS IFB projects are analogues to simple industrial processing plant (tanks, pumps, valves, skidded units). Leverage existing Oil & Gas infrastructure players in addition to traditional EPCs



# Recent Win Case Study: CTC & Air Force Research Lab

## Partnered with CTC to win the Large Capacity Energy Storage project in Fairbanks, AL

### Overview

- US Air Force project to increase resiliency at critical military base
- 3MW project with 9hours of rated duration, which ESS is solving with 4 PT800s
- Department of Defense actively seeking long duration resilient microgrids to improve readiness, with a keen interest in Made in USA software and systems to reduce risk of foreign cyber security vulnerabilities
- Unlocks extensive long duration storage opportunities with DoD (goal of 1 microgrid on every US army base by 2035) and the growing microgrid market (projected to reach \$236B by 2034<sup>1</sup>)

### Rationale for ESS Selection

- American Made battery
- Furthest along technically for alternatives to lithium-ion
- Safety: electrolyte profile and non-flammable
- Ability to scale to meet future projects
- Extreme Weather operating capabilities (-50C)
- Unlimited cycling to improve reliability and lower costs

### Project Details



<b>Size</b>	3MW / 27MWh BESS + Engineering Svcs
<b>Amount</b>	\$9.6M
<b>Project Duration</b>	9 Hours
<b>Work Start</b>	January 2026
<b>COD</b>	December 31, 2028
<b>Site Location</b>	Fairbanks AL, US Air Force (Space Force) base



# Recent Capital Markets Highlights

(\$ in millions)	FY 2025	FY 2024	Change (%)
Revenue	\$1.6	\$6.3	(75%)
Gross Profit (Loss)	(\$27.7)	(\$45.4)	39%
Operating Expenses	\$29.7	\$44.4	(33%)
Profit (Loss) from Operations	(\$57.4)	(\$89.8)	36%
Net Income (Loss) and Comprehensive Income (Loss) to Common Stockholders	(\$63.4)	(\$86.2)	26%
Net Loss per Share – Basic and Diluted	(\$4.34)	(\$7.32)	41%
Adjusted EBITDA	(\$44.3)	(\$71.3)	38%

(\$ in millions)	12/31/2025	12/31/2024	Change
Cash & Cash Equivalents	\$14.5	\$13.3	\$1.2
Restricted Cash	\$0.8	\$0.9	(\$0.1)
Short Term Investments	\$7.6	\$18.3	(\$10.7)
<b>Total</b>	<b>\$22.9</b>	<b>\$32.5</b>	<b>(\$9.6)</b>

## Recent Highlights

- Continued reductions in cost of revenue and operating expenses reflective of cost reduction efforts
  - Realignment of employee base and organizational reset
  - Smallest cuts made to R&D to prioritize investment in our product development
- Gross profit improved 36%, operating expenses decreased 33%, and net loss decreased \$23M
- Significant reduction in operating cash burn rate
- Completed a \$40M financing with Yorkville in October 2025, launched an at-the-market (“ATM”) equity offering program in November 2025 and raised approximately \$8.6M in gross proceeds
- In January 2026, closed a \$15M registered direct offering priced at a premium to market



# Leadership Team

## Industry Veterans Focused on Delivery



**Drew Buckley**  
Chief Executive Officer

- 20+ years of experience focused on investing in publicly traded small- and mid-cap technology companies,
- Joined ESS in 2025 to lead investor relations and capital market strategy
- Spent 17 years at William Blair as a Partner and sector leader focused on technology



**Kate Suhadolnik**  
Chief Financial Officer

- 14 years of experience in finance & accounting
- Prior to ESS, was Corporate Accounting & Reporting Manager at The Standard
- Held various positions within the audit practice at Deloitte & Touche LLP over 9-year tenure



**Kelly Goodman**  
Chief Strategy Officer &  
Gen. Counsel

- 15+ years of experience in the US & global clean energy sector
- Blended legal and business expertise
- Diverse utility scale project development and project financing experience well suited for ESS's next stage of growth



**Brian Lisiecki**  
Chief Information Officer

- Led the initiative to standardize cross functional business process, including enabling Oracle ERP to provide scalability and better decision insights
- Prior to ESS, spent 19 years at Campbell Soup Company in various technology and finance leadership roles



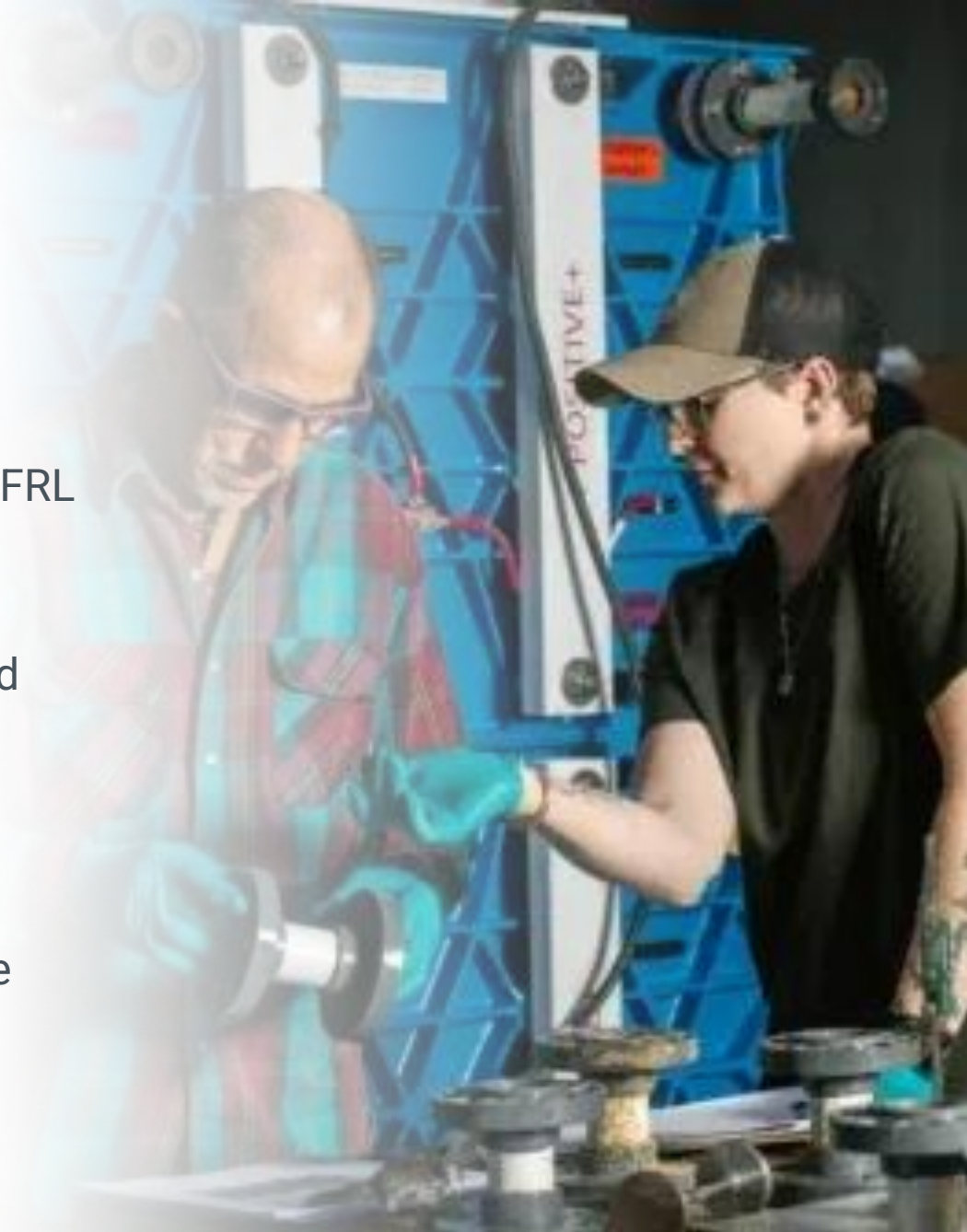
**Randall Selesky**  
VP, Sales & Business  
Development

- 30+ years of experience leading sales, marketing, and product management
- Deep expertise commercializing products based on client needs
- 15+ years across stationary storage and renewables ecosystem
- Early career leadership roles at GE and Rockwell Automation



# Investment Summary

- **Demand for power is inflecting**, with **traditional sources diminishing**
- **10-20 hour “Energy Base” LDES** for 24/7 renewables
- **Commercial momentum: \$9.9 million contract** with CTC and AFRL at Clear Space Force Station (Alaska)
  - **Project New Horizon** pilot project with SRP/Google
- **Capital to execute:** Closed **\$40 million** financing (Oct 2025) and announced a **\$15 million** registered direct offering priced at a premium
- **Manufacturing foundation** in place to scale deployments as contracts convert
- **Strengthening leadership:** new C-suite executives to accelerate commercial execution and scale





# ESS<sup>INC</sup>

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Every Day.**

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