



Beyond Lithium, Part 2: ESS Tech's Iron Flow Battery

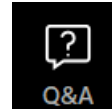
June 3, 2026

www.cleangroup.org

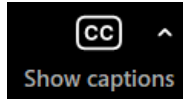
Webinar Logistics

All attendees are in **“listen only” mode** – your webcam and microphone are disabled. The Chat function is also disabled.

Submit questions and comments via the Q&A panel



Automated **captions** are available



Speaker bios will be made available in the Chat

This webinar is being recorded. We will email you a webinar recording within 48 hours. This webinar will be posted on CEG’s website at www.cleanegroup.org/webinars

We encourage you to provide feedback for us via post-webinar survey or email.



Affordable, reliable, clean energy for all.



**Climate Resilience and
Community Health**



**Distributed Energy Access
and Equity**



**Energy Storage and Flexible
Demand**



Fossil Fuel Replacement

Beyond Lithium Webinar Series

- Beyond Lithium, Part 1: Hydrostor's Advanced Compressed Air Energy Storage (4/8/2026)
- Beyond Lithium, Part 2: ESS Tech's Iron Flow Battery (6/3/2026)
- Beyond Lithium, Part 3: Form Energy's Iron-Air Battery (8/6/2026)

Beyond Lithium, Part 2: ESS Tech's Iron Flow Battery



Drew Buckley
Chief Executive Officer
ESS Tech, Inc.



Seth Mullendore
President/Executive Director
Clean Energy Group



Thank You



Seth Mullendore
President and Executive Director
Clean Energy Group
Seth@cleanegroup.org

Upcoming Webinar

Beyond Lithium, Part 3: Form Energy's Iron-Air Battery
(8/6/2026)

Read more and register at www.cleanegroup.org/webinars



www.cleanegroup.org | info@cleanegroup.org



ESS^{INC}

Catalyzing a Cleaner Future. Every Day.



NYSE: GWH

Investor Presentation
June 2026

Disclaimers

No part of this presentation may be reproduced, photocopied, redistributed or passed on, directly or indirectly, to any other person, or published, in whole or in part, for any purpose without the consent of ESS Tech, Inc. ("ESS").

This presentation contains certain "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical fact contained in this presentation, are forward-looking statements. Some of these forward-looking statements can be identified by the use of forward-looking words, including "may," "should," "expect," "intend," "will," "estimate," "anticipate," "believe," "predict," "plan," "targets," "projects," "could," "would," "continue," "forecast" or the negatives of these terms or variations of them or similar expressions. Examples of forward-looking statements include, among others, statements regarding the status of ESS's manufacturing, products and technology and customer relationships and product deployments. These forward-looking statements are based on ESS's current expectations and beliefs concerning future developments. Many factors could cause actual future events to differ materially from such expectations, including, but not limited to, disruptions, or quality control problems in ESS's manufacturing operations; rising costs preventing ESS from achieving its cost optimization efforts; changes in the regulatory environment negatively affecting the long-duration energy storage market; as well as those risks and uncertainties set forth in the section entitled "Risk Factors" in ESS's most recent periodic report, including ESS's most recent Quarterly Report on Form 10-Q and Annual Report on Form 10-K and its other filings filed with the Securities and Exchange Commission (the "SEC"). Except as required by law, ESS is not undertaking any obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

ESS may own or have rights to various trademarks, service marks and trade names that it uses in connection with the operation of its business. This presentation may also contain trademarks, service marks, trade names and copyrights of third parties, which are the property of their respective owners. The use or display of third parties' trademarks, service marks, trade names or products in this presentation is not intended to, and does not imply, a relationship with ESS, or an endorsement or sponsorship by or of ESS. Solely for convenience, the trademarks, service marks, trade names and copyrights referred to in this presentation may appear without the TM, SM, ® or © symbols, but such references are not intended to indicate, in any way, that ESS will not assert, to the fullest extent under applicable law, its rights or the right of the applicable licensor to these trademarks, service marks, trade names and copyrights.

This presentation and any oral statements made in connection with this presentation do not constitute an offer to sell, or a solicitation of an offer to buy, or a recommendation to purchase, any securities in any jurisdiction, nor shall there be any sale, issuance or transfer of any securities in any jurisdiction where, or to any person to whom, such offer, solicitation or sale may be unlawful under the laws of such jurisdiction. Any offer to sell securities will be made only pursuant to a definitive agreement and in reliance on an exemption from registration under the Securities Act for offers and sales of securities that do not involve a public offering or by means of a registration statement (including a prospectus) filed with the SEC.

Neither the SEC nor any state securities commission has approved or disapproved of these securities or determined if this presentation is truthful or complete. Any representation to the contrary is a criminal offense.

The market data contained herein is derived from various internal and external sources. All of the market data in the presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Further, no representation is made as to the reasonableness of the assumptions made within or the accuracy or completeness of any projections or modeling or any other information contained herein. Any data on past performance or modeling contained herein is not an indication as to future performance. ESS assumes no obligation to update the information in this presentation.

This presentation has been prepared by ESS to assist interested parties in making their own evaluation with respect to a potential investment in ESS and for no other purpose. All information set forth herein speaks only as of the date hereof in the case of information about ESS or the date of such information in the case of information from persons other than ESS. ESS will assume no obligation to update or keep current the information contained in this presentation, to remove any outdated information or to expressly mark it as being outdated. This presentation does not purport to contain all of the information that may be required to evaluate an investment, and any recipient should conduct its own independent analysis of ESS and the data contained or referred to in this presentation. You should not construe the contents of this presentation as legal, accounting, business or tax advice and you should consult your own professional advisors as to the legal, accounting, business, tax, financial and other matters contained herein. No representation or warranty, express or implied, is or will be given by ESS or any of its affiliates, directors, officers, employees or advisers or any other person as to the accuracy or completeness of the information in this presentation (including as to the accuracy or reasonableness of statements, estimates, targets, projections, assumptions or judgments) or any other written, oral or other communications transmitted or otherwise made available to any party in the course of its evaluation of ESS. Accordingly, none of ESS or any of its affiliates, directors, officers, employees, or advisers or any other person shall be liable for any direct, indirect, or consequential loss or damages suffered by any person as a result of relying on any statement in or omission from this presentation and any such liability is expressly disclaimed.

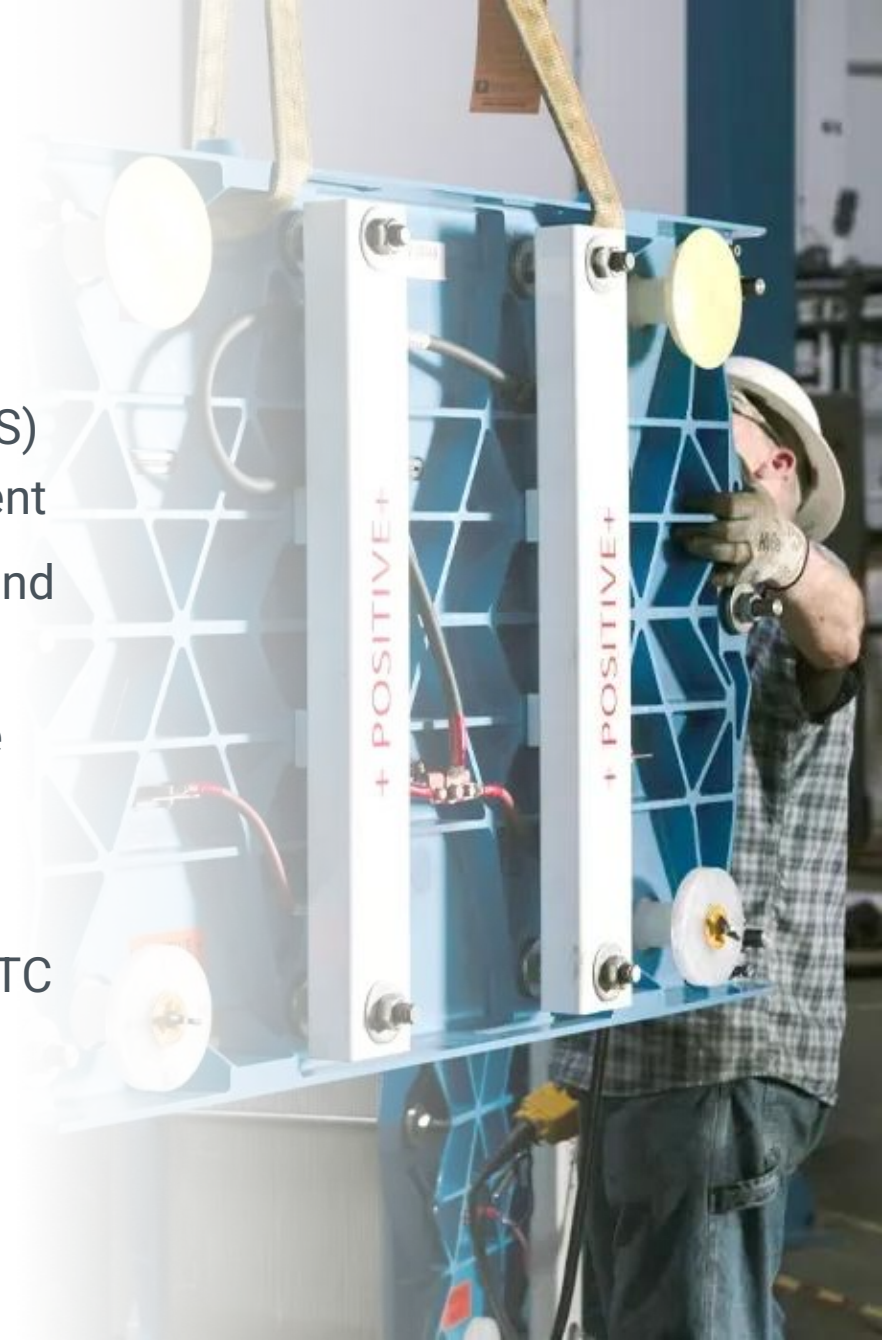
For further information with respect to ESS and our securities, you may refer to our current and periodic reports filed with the SEC. The SEC maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov. You may also request information by contacting us at: ESS Tech, Inc., 26440 SW Parkway Ave., Bldg. 83, Wilsonville, Oregon 97070, Attn: Investor Relations. Our investor relations website is located at <https://investors.essinc.com/>, and we may post important information for investors, including news releases, analyst presentations, and supplemental financial information, and as a means of disclosing material non-public information and for complying with our disclosure obligations under Regulation FD. Accordingly, investors should monitor our investor relations website, in addition to following press releases, filings with the SEC and public conference calls and webcasts.



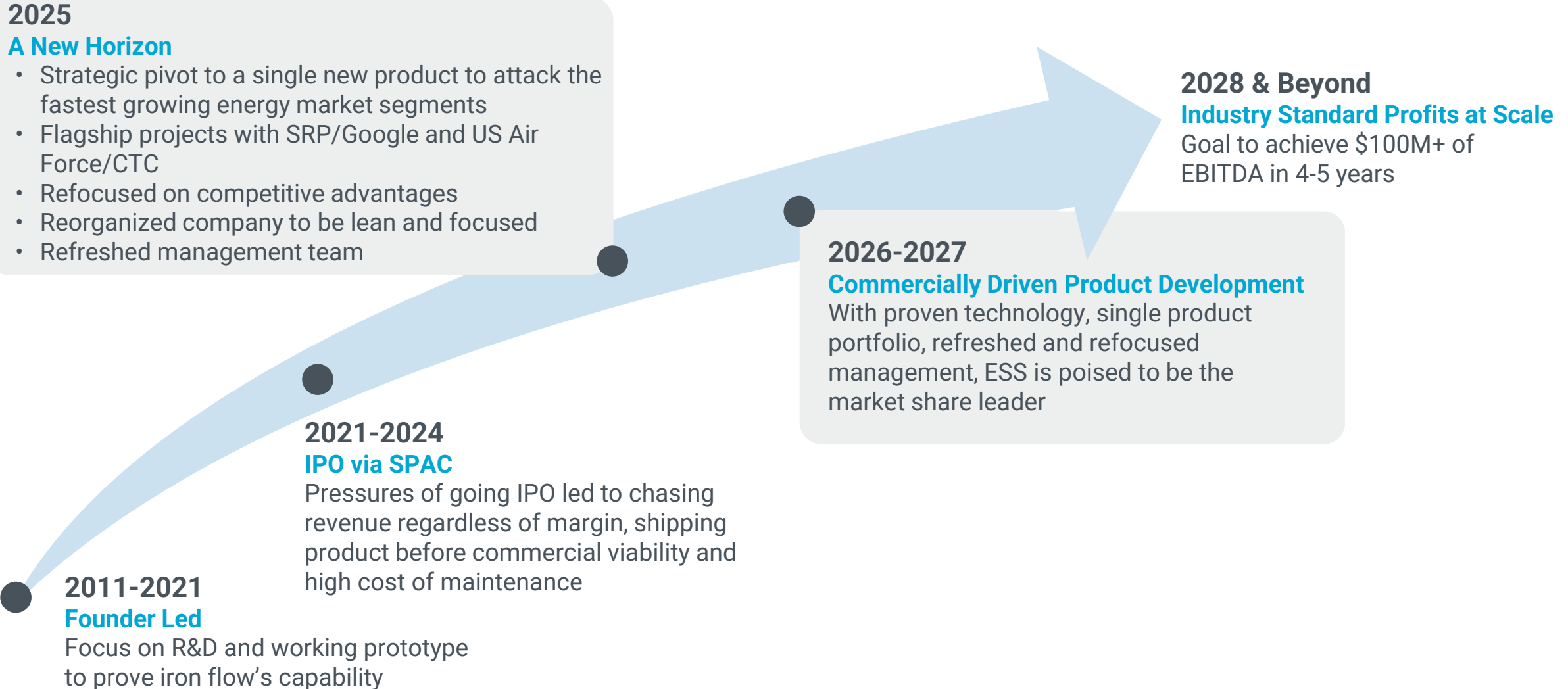
Corporate Overview

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.



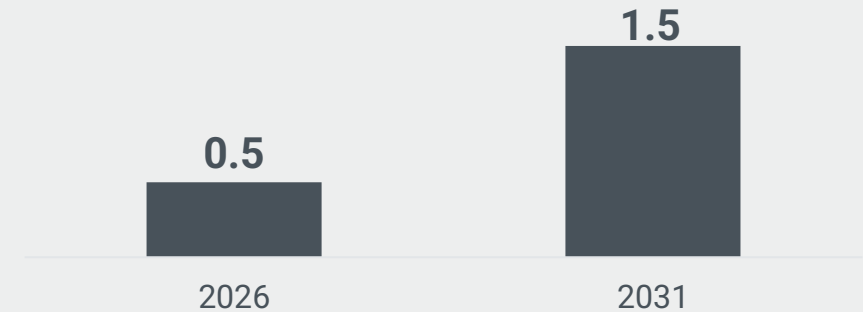
Capacity additions must come from renewables & batteries

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

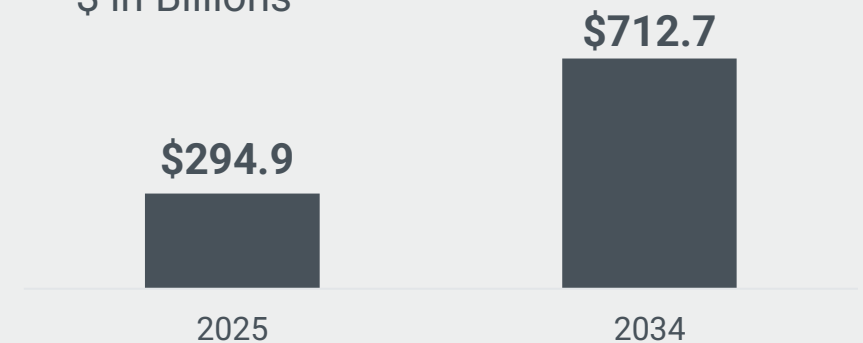
Total Energy Storage Market

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 Terrawatt¹



Global Energy Storage Market
\$ in Billions²



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

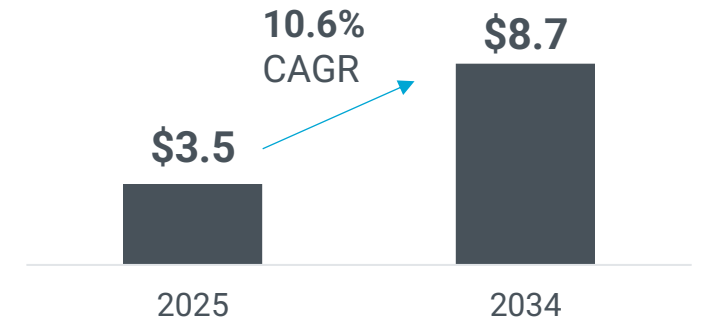
10-20 Hours

- 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 Billions¹



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

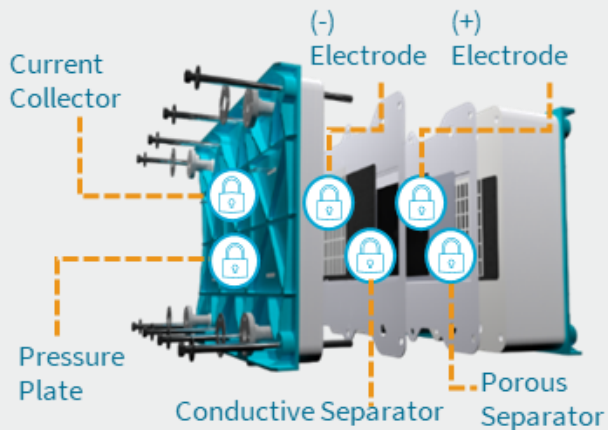


Iron Flow Battery - Proprietary Core Technology

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

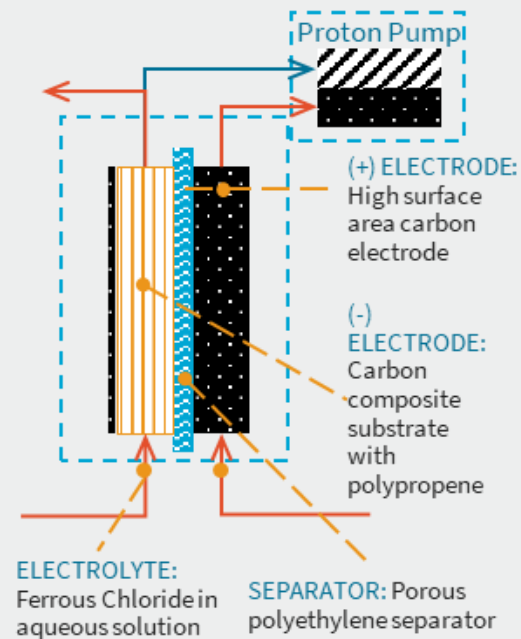
Iron flow battery stores energy using iron, salt, and water

Battery Cell



Core technology used in full product suite

Proton Pump



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



Real-World Technology Validation

Independent deployments validate iron flow chemistry underpinning ESS' Energy Base product

APPA / BURBANK WATER & POWER DEMONSTRATION

21-Month Utility Demonstration

Third-party validation under APPA's DEED program

- ▶ Iron Battery System installed, energized, and operated for 21 months co-located with a solar resource
- ▶ Funded under APPA's Demonstration of Energy & Efficiency Developments (DEED) program
- ▶ Final Report concluded iron flow technology works and has a place in utility energy storage strategy
- ▶ Validated non-flammable iron-salt-water chemistry, domestic manufacturing, and projected long operating life

TURLOCK IRRIGATION DISTRICT INFRASTRUCTURE

Solar-Over-Canal Commissioning

Critical infrastructure application in California's Central Valley

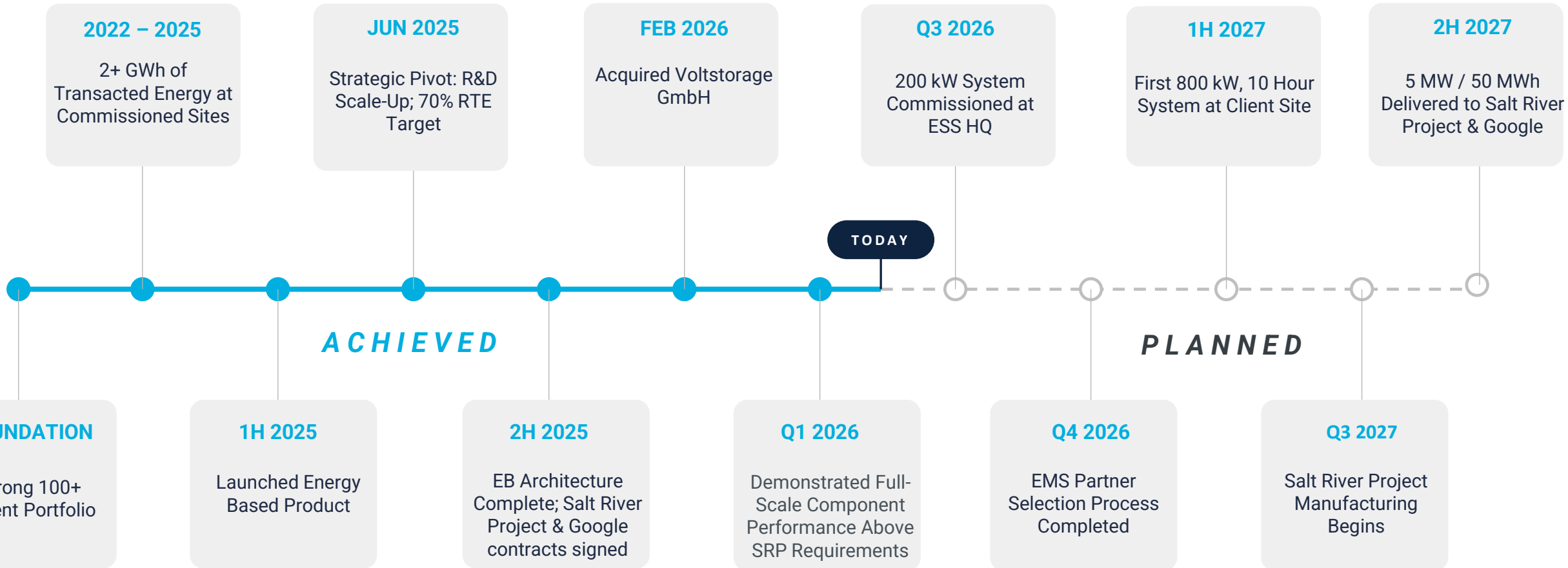
- ▶ Two ESS Iron Flow Battery systems successfully commissioned at TID
- ▶ Innovative solar-over-canal configuration pairs renewable generation with long-duration storage
- ▶ Supports TID's water conservation objectives by reducing evaporation from active irrigation canals
- ▶ Demonstrates iron flow technology in a reliability-critical infrastructure use case

These deployments are demonstration projects — not product sales — validating the iron flow chemistry underpinning ESS' commercial Energy Base product



Technology Roadmap

Building on our solid foundation to deliver Energy Storage assets of the future



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.

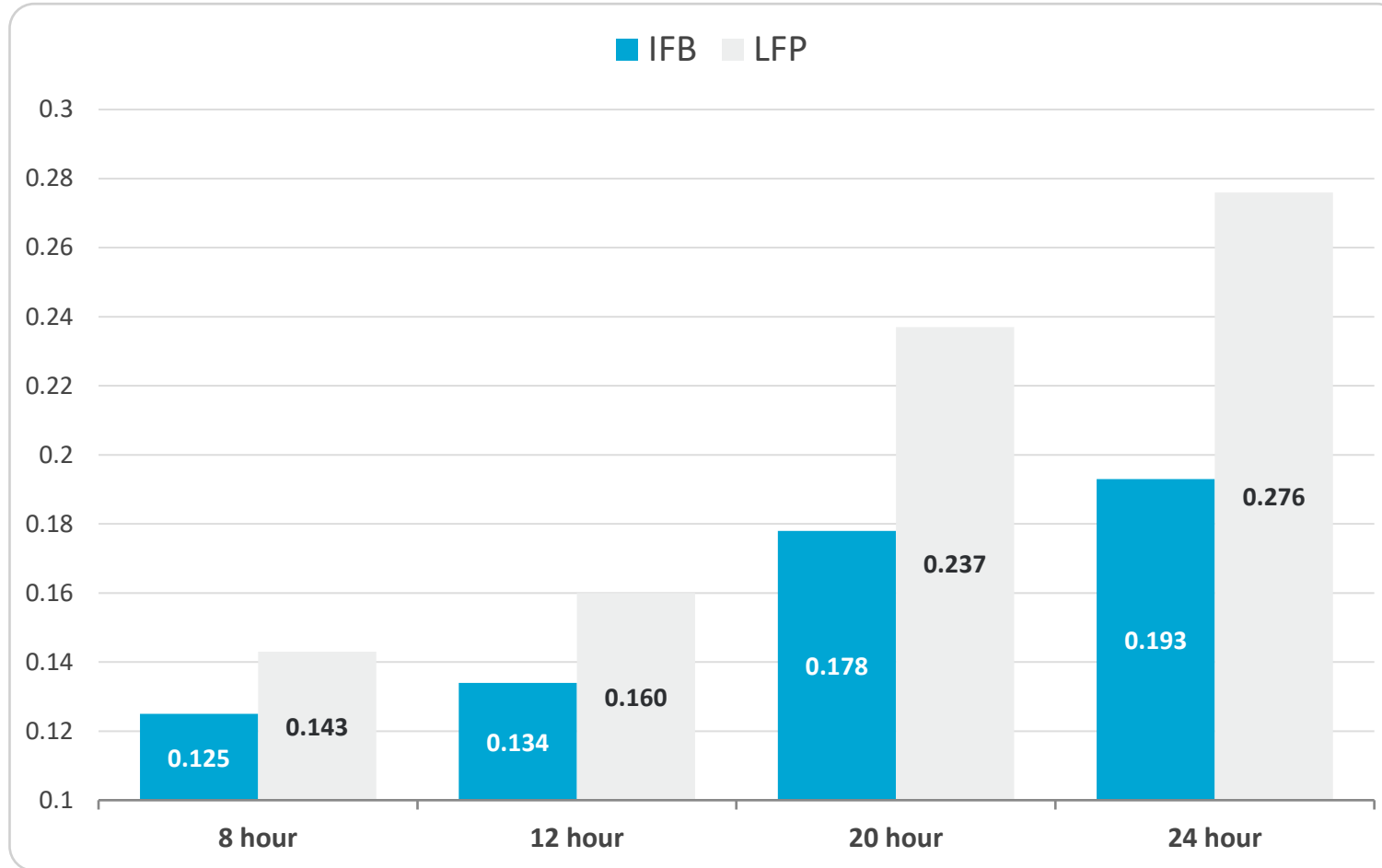


Iron Flow Batteries cost and technology advantages increase with duration



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

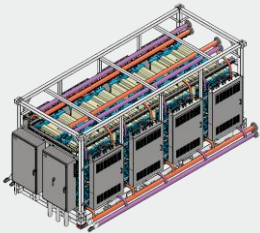
ESS Energy Base targets 10–20-hour storage where IFB cost advantage is most pronounced, making it the clear economic choice for long-duration grid applications



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



Salt River-Google Project | Overview

ESS was awarded SRP's non-Lithium LDES pilot in October 2025, to be executed in partnership with Google

Overview

- Salt River Project Agricultural Improvement & Power District (“SRP”) is an electric utility that serves 2 million people in Central Arizona
- SRP plans to significantly increase its solar and BESS capacity to meet zero carbon goals and serve a territory which needs 2-3x existing generating resources by 2035
- SRP has identified a critical need for 10+ hour storage solutions and released a 2024 RFP for a 5 MW / 50 MWh non-Lithium pilot project. SRP also requested indicative pricing for a 200 MW / 2 GWh follow-on
- Google participates via a cost-sharing agreement with SRP, funding a portion of project payments
- SRP will partner with ERPI (Electric Power Research Institute) for independent operational testing

ESS Product Solution: Energy Base

- Enclosed iron-flow battery system – next generation, utility-scale platform
- Enables flexible configuration with cost advantages at larger scale
- Extensively field-tested and commercialized technology – over 2 GWh of transacted energy
- Designed and engineered to meet all SRP operating and siting requirements
- ~98% Domestic Content unlocks 40% ITC



Pilot

Follow-On Opportunity

	Pilot	Follow-On Opportunity
Project Size	5 MW / 50 MWh	200 MW / 2 GWh
Contract Signing	Q4 2025	2029
Manufacturing Start	2026	-
COD	Q4 2027	2032
Project Site Location	Copper Crossing Energy & Research Center (Florence, AZ)	Phoenix Metro Area Standalone, grid charged operation
Contract Structure	10-year capacity contract	Build-transfer



Recent Capital Markets Highlights

(\$ in millions)	Q1 2026	Q1 2025	Change (%)
Revenue	\$0.1	\$0.6	(79%)
Gross Profit (Loss)	(\$7.0)	(\$8.1)	14%
Operating Expenses	\$6.7	\$10.0	(33%)
Profit (Loss) from Operations	(\$13.8)	(\$18.1)	24%
Net Income (Loss) and Comprehensive Income (Loss) to Common Stockholders	(\$15.9)	(\$18.0)	12%
Net Loss per Share – Basic and Diluted	(\$0.54)	(\$1.50)	64%
Adjusted EBITDA	(\$10.3)	(\$15.0)	31%

(\$ in millions)	3/31/2026	3/31/2025	Change
Cash & Cash Equivalents	\$15.5	\$8.4	\$7.1
Restricted Cash	\$0.8	\$0.9	(\$0.1)
Short Term Investments	\$6.0	\$4.4	\$1.6
Total	\$22.3	\$13.7	\$8.6

Recent Highlights

- Continued cost discipline: Q1 2026 operating expenses down 33% and Adjusted EBITDA loss improved 31% year-over-year
 - Realignment of employee base and organizational reset
- Net loss improved 12% to \$(15.9)M in Q1 2026, reflecting continued capital efficiency and the ongoing strategic reset
- Net cash used in operating activities decreased \$4.7M, or 26%, year-over-year
- 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 at \$1.75 per share, 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



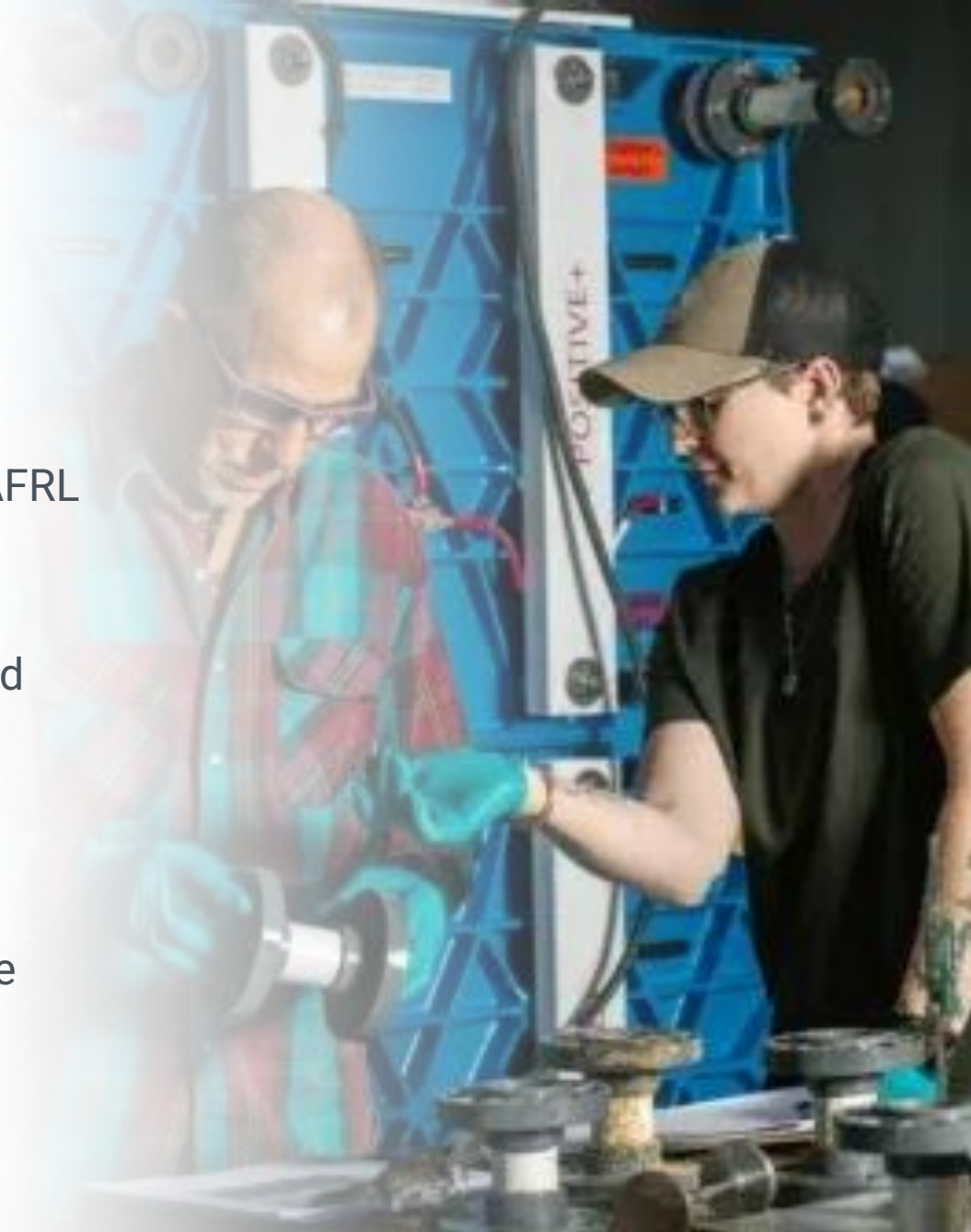
Randall Selesky
VP, Sales & Business
Development

- 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^{INC}

**Catalyzing a Cleaner Future.
Every Day.**

COMPANY

ESS Tech, Inc.

15 26440 SW Parkway Ave, Bldg. 83
Wilsonville, OR 97070
investors@essinc.com

INVESTOR RELATIONS

Chris Tyson

Executive Vice President, MZ North America
(949) 491-8235
GWH@mzgroup.us

NYSE: GWH

essinc.com