Q1 2025 Earnings Presentation

May 2025

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Operating Highlights

Energy Center™ Deployed for Portland General Electric

Second EC completed in Q3'24

Both ECs commissioned & testing complete

Full hand-off to PGE in Q1'25

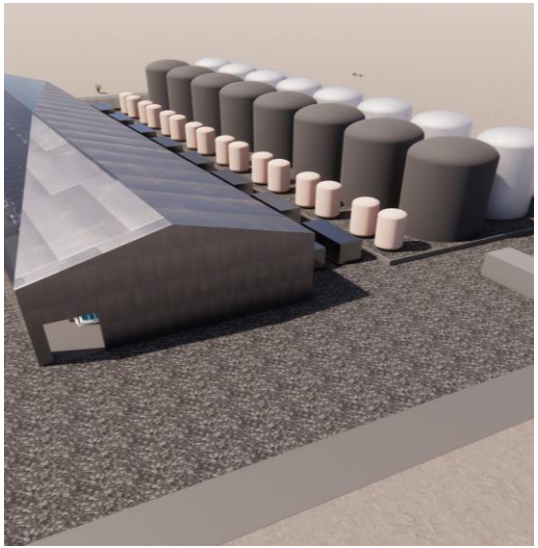
Grid-connected cycling in Q2'25

New Product Launched: **The Energy Base™**

No Containers

Endless Flexibility

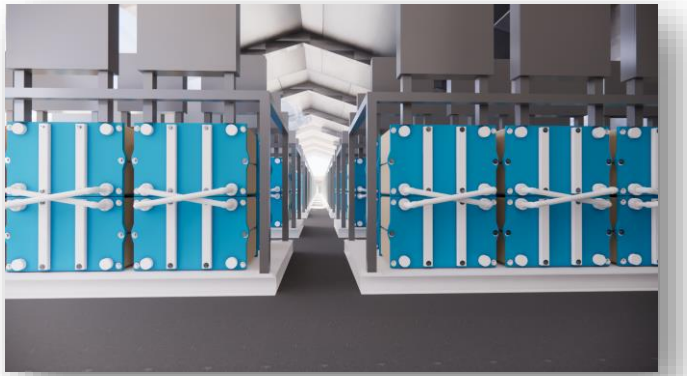
No Limits



The Energy Base: Powered by the Iron Core

- At the heart of each Energy Base project is a **configurable set of modular powertrains, called the Iron Core**, engineered to deliver gigawatt-hour storage capacity for your next project.

- Built with our **proven iron flow battery modules and established core technology**, Energy Base projects powered by the Iron Core deliver decades of reliable, long-duration energy storage.



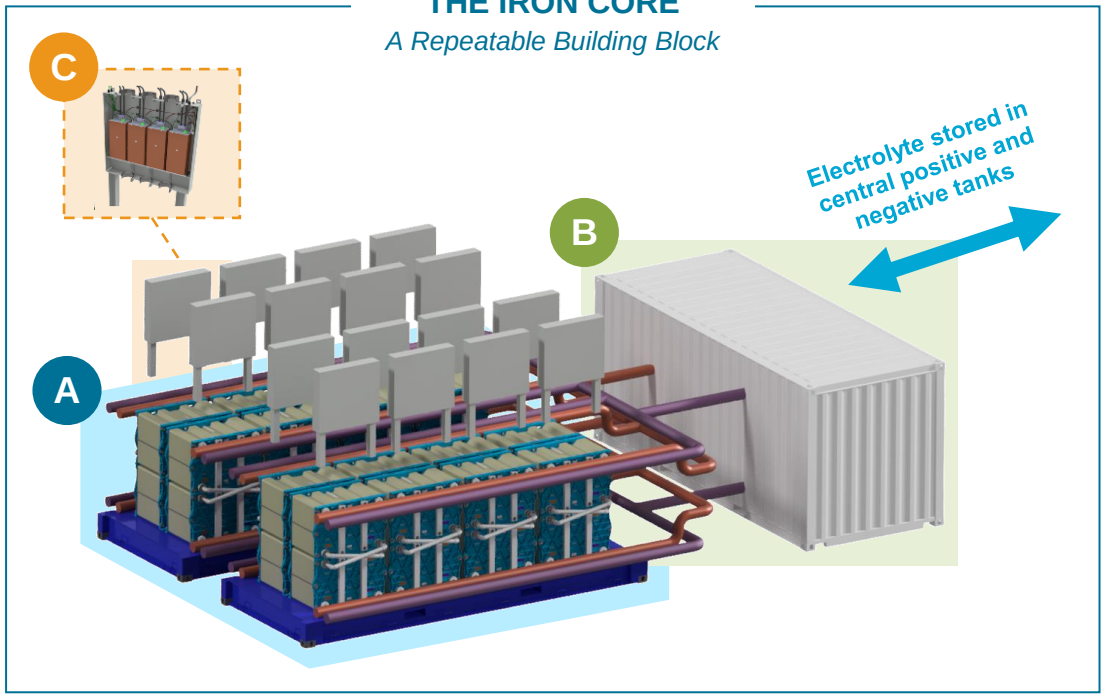
The Energy Base: Iron Core Building Blocks

Infinitely scalable to meet project size and specifications

A **Power Platform:** Existing iron flow battery modules, used in the Energy Center today, arranged in integrated skids for easy transport and installation

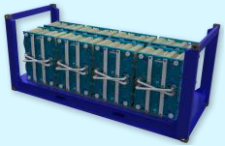
B **Rebalancing Module:** ESS patented electrolyte health system using proven “Proton Pump” technology

C **Electrical Cabinets:** Cabinetry for DC-DC converters, fusing and system wiring



The Energy Base: Product Strategy

ESS continues to manufacture core technology in-house while balance of system is procured directly from preferred vendors



Iron Core

Electrolyte

Design Specifications

ESS manufacturers its core components and provides design specifications for a fully installed Energy Base

EPC & Developer Partners

Electrolyte Tanks

Iron Core Enclosure

Plumbing & Mechanical

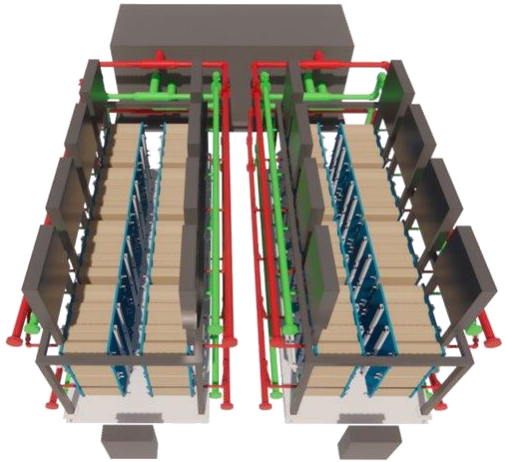
Balance of system and industry standard site equipment are procured from preferred vendors and shipped to site

The Energy Base: Honeywell Partnership

Relationship & Role

- ESS Investor and Customer; exploring product collaboration on the Energy Base
- Joint Development Agreement (illustrative projects)
  - Cell membranes
  - Efficiency enhancers
  - Fluid flow innovations (new pump types and routing)
- Procurement Leverage
  - New electrolyte vendors
  - New tank vendors and configurations
  - New pump and actuator vendors + vertical integration
- Testing Collaboration
  - Energy Warehouse operating to test limits in multiple use cases

Honeywell



Accelerating Scaled Design

Honeywell's expertise in fluid systems and modular engineering plans optimize ESS design for quality, cost-efficiency, and scale

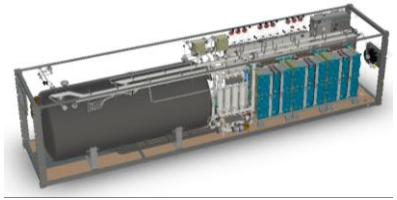
Product Line Evolving to Meet Broader Range of Use Cases at Larger Scales

Same Core Technology Across All Products

- Battery Module
- Proton Pump
- Electrolyte
- Balance of System

Energy Warehouse

Project Size: 75 kW – 1 MW
Duration: 5+ hours



First commercially available product (now legacy); underwent multiple innovation cycles to improve costs & process inefficiencies

- Behind-the-meter solution (“BTM”)
- Pilot / demonstration projects
- **Primary Use Cases:** Energy shifting, load management
- **Customer Segments:** Utilities, IPPs, C&I, MUSH

Energy Center

Project Size: 200 kW – 5 MW
Duration: 8+ hours

Second product in portfolio, optimized for size and cost and expanded potential use cases

- BTM and Front-of-the-meter (“FTM”) solution
- **Primary Use Cases:** Energy shifting, merchant use, resource adequacy, green baseload, grid resiliency
- **Customer Segments:** Data centers, utilities, IPPs, C&I, MUSH

Energy Base

Size: 5 MW – 100+ MW
Duration: 10+ to 22 hours

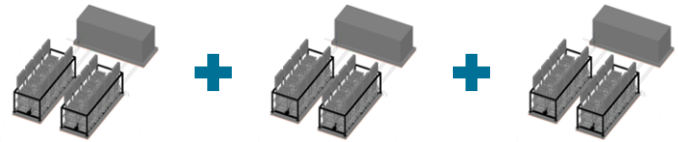
Latest product configuration; can be scaled to customer site and project specifications. Most capital efficient for ESS & customers

- BTM and FTM solution
- Higher density than Li-ion configurations
- **Primary Use Cases:** Green baseload, grid resiliency, merchant use, resource adequacy
- **Customer Segments:** Data centers, utilities, IPPs, large C&I applications

Extending Duration Up to 22 Hours with the Energy Base

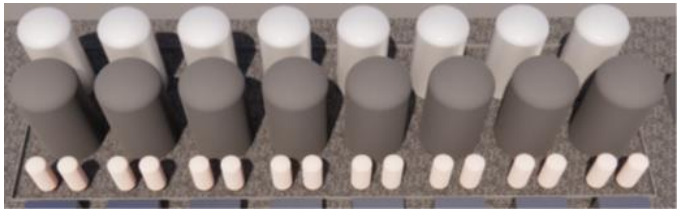
ESS can scale both duration and capacity independently to meet customer specifications using established core technology

Power Capacity (MW)



Capacity can be independently scaled simply by adding Iron Core modules

Duration (hours)



Duration can be independently scaled simply by adding electrolyte volume

- ESS iron flow battery modules are capable of storing up to 22 hours of energy, but previous product designs were constrained by standard container and electrolyte tank sizes, limiting duration to 8-10 hours
- By shifting from a standard shipping container to scalable enclosures and tanks, the Energy Base fully utilizes established core technology and can deliver 10+ to 22 hours of utility-scale power
- Extending duration unlocks several key advantages including:
  - ✓ Ability to deliver green baseload power when paired with carbon-free generation
  - ✓ Meaningful reduction in $/kWh cost
  - ✓ Minimum energy density of ~80 MWh/acre for a 10-hour battery with ability to approach ~300 MWh/acre[1] – opportunity to further increase density with greater durations
  - ✓ Expanded addressable market to include data centers seeking Uninterruptible Power Supply (“UPS”), IPPs seeking to deliver green PPAs and utilities seeking to enhance grid resiliency following grid decarbonization

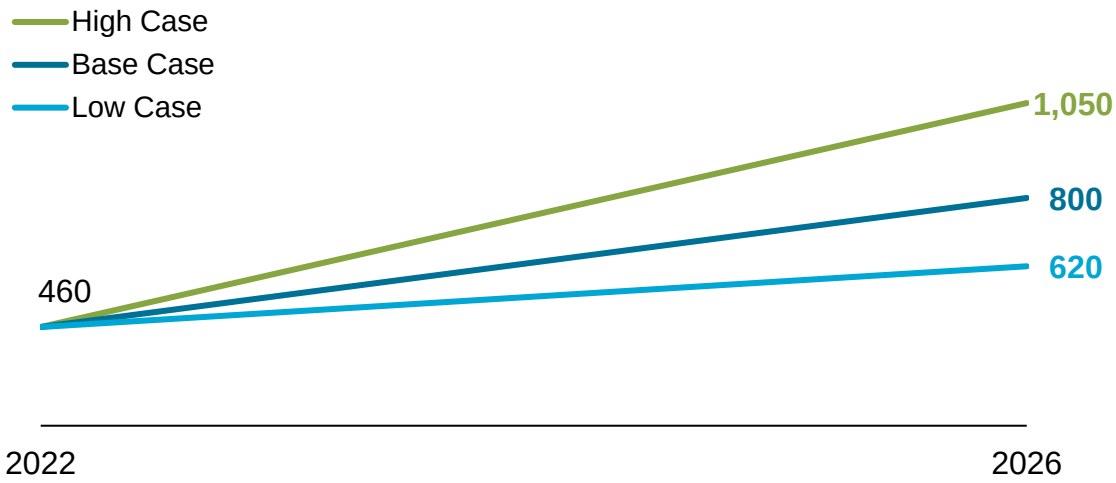
1. Depending on project site requirements

Rapidly Expanding Need for Storage Across Grid Operators & Hyperscalers

Market Need

High & Growing Need	• Data centers require safe, resilient and sustainable power delivery to ensure uptime (Uninterruptible Power Supply or “UPS”) • AI is driving unprecedented growth in energy demand
Current Solutions Fall Short	• Inadequate infrastructure is failing to meet demand • Power disruption is now the leading cause of impactful data center outages
Time is an Enemy	• Speed to data center deployment is impeded by the 3-6 year lead time to expand grid capacity to prospective sites

Global Electricity Demand for Data Centers, AI and Cryptocurrency (TWh)[1,2]



- Data centers used 4.4% of total U.S. electricity in 2023, growing to up to 12% by 2028[2]
- Data center usage estimated to grow to 800 TWh by 2026
- **Puts extreme pressure on aging infrastructure, increasing risk of failure**

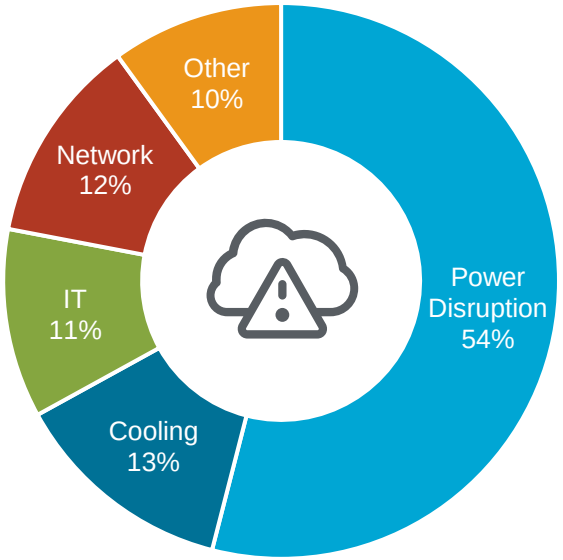
1. Energy.gov DOE Report: 2024 Report on U.S. Data Center Energy Use
2. Statista https://www.statista.com/topics/13055/data-center-power/#topicOverview

ESS Products Meet Data Centers' Growing Electricity Needs

THE SOLUTION: ESS Energy Base™ ("EB")

Enhances Grid Power Capacity & Resilience	• Enables fast deployment of additional grid capacity (solar + EB) • Increases grid balancing and resilience of supply for data center customers • Provides green power
Safer, Scalable, Sustainable & Cost-Effective	• Provides a **safe, low latency**, **scalable**, **sustainable**, and **cost-effective** alternative to gas generators and long Li-ion battery chains • Designed for the UPS needs of AI data centers

Causes of Impactful Data Center Outages[1]



More data center outages are caused by power disruption than all other causes combined

1. Uptime Institute Global Survey of IT and Data Center Managers 2024

Tailored Solutions to Bring Value to Data Center Customers

ESS Data Center Value Proposition

Flexible Cycling	Enables continuous peak shifting ensuring critical customers receive power
Safety	Enables siting near customers, increasing reliability and resiliency
Operational 24x7	Enables continuous charge and discharge for greater value
Increasing Duration	Adjustable duration to meet variable needs

Project Configuration Options

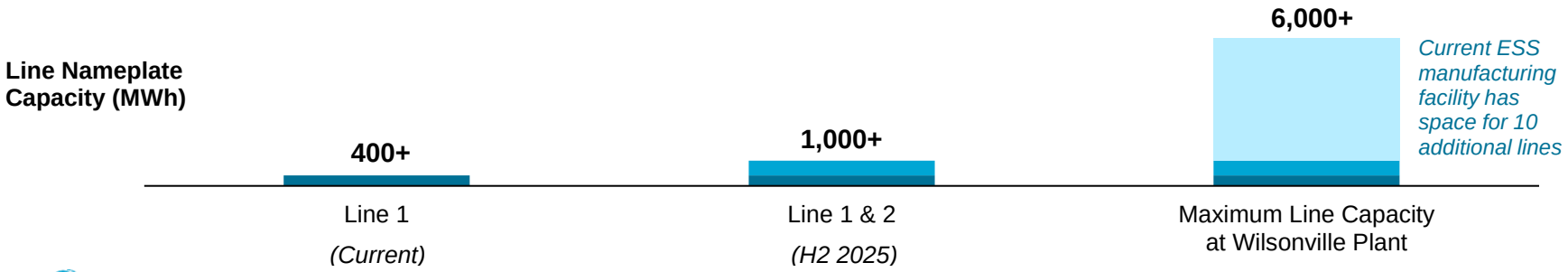
Standalone Iron-Flow Battery ("IFB") Storage 	Grid-tied long-duration storage to enhance grid resiliency and lower energy costs
Green Baseload: Carbon-Free Generation + IFB 	Carbon-free generation resources, such as solar or wind, paired with IFB long-duration storage to provide green baseload power to a co-located data center
Carbon-Free Generation + IFB + Other BESS 	Green baseload power plant complemented by other storage technology (Li-ion, Zinc, etc.) to address short duration data center outages (< 4 hours)

Expansion of Wilsonville Manufacturing Capacity

Addition of new lines to meet customer demand supports mix shift towards more capital efficient and lower unit cost Energy Base product

- ESS is currently in the process of commissioning its second automated battery manufacturing line (“Line 2”) and will be online in H2 2025
- Capital efficiency improves dramatically as manufacturing shifts from ECs to EBs, allowing ESS to produce core components and procure balance of system directly to project site
  - Shifts manufacturing mix to higher margin components, lowers working capital burden and maximizes manufacturing plant footprint
  - While ECs require investment in both system and core component lines, EBs only require core component line spend, reducing capex per unit
  - Electrolyte manufacturing to transition from Wilsonville to project sites creating substantial logistics cost savings
- Moving from a semi-automated to a fully-automated manufacturing line increased labor productivity 2-3x on module manufacturing

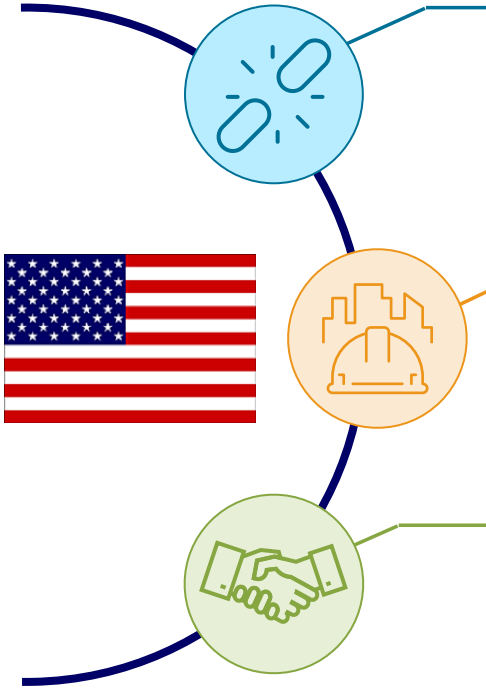
	Line 1 (Current)	Line 1 & 2 (H2 2025)	Maximum Line Capacity at Wilsonville Plant
Annual Max PTCs[1]	**~$25M**	**~$60M**	**~$400M**
Total Capex Spend	**~$10M**	**~$17M**	**~$85M**



1. Assumes line output based on current overall equipment effectiveness

Battery Storage Opportunities Post-Election

The U.S. storage sector is expected to remain strong during the second Trump administration



1 Li-ion Tariffs Increase ESS Cost Competitiveness

- The Trump administration has imposed 10% reciprocal tariffs on top of the existing HTSUS 3.4% tariff on all battery imports, 7.5% Section 301 tariff on Chinese non-EV lithium-ion batteries, and 20% International Emergency Economic Powers Act (IEEPA) tariff on all goods imported from the People's Republic of China (PRC). This means that as of today, there is a 40.9% tariff on non-EV lithium-ion batteries imported from China
- The higher-than-expected costs for Chinese lithium-ion batteries will halt the Chinese battery industry's momentum, and open opportunities for non-lithium American battery manufacturers like ESS

2 45X Supports Domestic Manufacturing

- 45X Advanced Manufacturing Production Tax Credits provide support for domestic manufacturing of components including battery and critical minerals
- The recently-released House Ways and Means Committee bill as part of the budget reconciliation process strengthens 45X by including strong Foreign Entity of Concern (FEOC) guardrails that advantage companies like ESS

3 State-Led Clean Energy Initiatives Expected to Continue

- Many states, like New York, Michigan, Virginia and California, are expected to continue advancing their own clean energy goals regardless of changes in federal policy
- Over the past decade, the sector has seen substantial growth even during periods of federal policy uncertainty
- States continue to provide support, such as the New York Public Service Commission's goal of implementing 6 GW of energy storage 2030 with a 1.2 GW carveout for LDES

Note: As of May 14, 2025

Financial Results

Q1 2025 Results

($ in millions)	Q1 2025	Q1 2024	Change (%)
Revenue	$0.6	$2.7	(78%)
Gross Profit (Loss)	($8.1)	($8.4)	3%
Operating Expenses	$10.0	$11.1	(10%)
Profit (Loss) from Operations	($18.1)	($19.5)	7%
Net Income (Loss) and Comprehensive Income (Loss) to Common Stockholders	($18.0)	($18.3)	2%
Net Loss per Share – Basic and Diluted	($1.50)	($1.57)	4%
Adjusted EBITDA	($15.0)	($15.4)	3%

Q1 2025 Highlights

Remaining two Energy Centers delivered to Florida utility

Cost of revenue does not reflect many of the cost savings initiatives realized in Q4 2024 and is subject to LCNRV adjustment

Reduced production levels and associated overhead to manage cash burn

Continued allocation of R&D and engineering resources to product development following strong commercial response to EB launch

Energy Center Reaches Profitability

ESS achieved non-GAAP gross margin breakeven on the Energy Center in Q4 2024

Unit Cost Profitability Breakdown

Sales Price

- Direct Materials
- Direct Labor
- Direct Consumables
- Scrap
- Warranty Costs

+ Advanced Manufacturing Production Tax Credits

Non-GAAP Gross Margin[1]

Key Cost-Out Initiatives

- Strong execution of supply chain, engineering, R&D and manufacturing operations resulted in substantial cost reductions in 2024
  - 26% Energy Center cost reductions in 2024, in addition to 36% Energy Warehouse cost reductions
- In-house electrode development resulting in 35% component cost reduction, with line of sight to an incremental 70% reduction
  - Control of electrode is also a key enabler of battery performance gains
- Electrolyte reformulation reduced component cost by >50% while increase energy output by 20%
- Domestic secondary sourcing of key battery stack and balance of system materials cut product costs by ~16%, increasing domestic content and mitigating tariff risk
- >90% reduction in scrap losses year-over-year
- **Cost reductions in the Energy Center focus on core components and will translate to the Energy Base product**

1. Excludes all indirect overhead costs

ESS Superior Value Proposition vs. Li-ion

Several favorable attributes of ESS technology vs. Li-ion result in lower LCOS and costs to customers over the long-term

Competitive Upfront Installed Cost

DECLINING EQUIPMENT COSTS

Stack optimization, lower electrolyte costs, in-house electrode development and downstream reduction of power electronics are expected to materially reduce system costs in the near-term

INVESTMENT TAX CREDIT

ESS products are 98% domestically sourced & 100% domestically manufactured, qualifying for the domestic content ITC adder. Further, ESS is insulated against any new domestic content requirements for claiming the base 30% credit

LI-ION TARIFFS

Li-ion equipment is set to face outsized tariffs (>100%) under the second Trump administration due to heavy reliance on Chinese sourcing

Ongoing Ownership Advantages

STRONGER CAPACITY PROFILE

ESS iron flow batteries can be operated with maximum flexibility with zero capacity fade, while Li-ion batteries experience 2%+ annual capacity degradation and steep battery augmentation costs even when operated within warranty limits

GREATER DEPTH OF DISCHARGE

Ability to discharge 100% of an iron flow battery's capacity without concern for accelerated degradation or voided warranties, allowing for substantially more discharged energy vs. Li-ion competitors over a project's life

CHARGE & DISCHARGE FLEXIBILITY

ESS iron flow batteries can infinitely and instantly switch between charge and discharge profiles, without the accelerated degradation associated with Li-ion, to take advantage of favorable energy pricing, provide grid resiliency or respond to an unpredictable power shortage

Superior Operating Characteristics

25+ YEAR LIFE

ESS iron flow batteries have at least a 25-year useful life with unlimited cycling and zero capacity degradation

WIDE OPERATING TEMPERATURE RANGE

Rated for use from -40°C to 50°C with any additional heating or cooling requirements limited to electronics in extreme environments

NO THERMAL RUNAWAY

ESS iron flow batteries are non-flammable which reduces project risk, creates a density advantage in some jurisdictions, and allows for broader siting and use cases

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.

Thank You

Reconciliation of Q1 2025 GAAP Net Loss to Adjusted EBITDA

	Three Months Ended March 31, 2025	Three Months Ended March 31, 2024
Net loss	**($18,026)**	**($18,310)**
Interest income, net	(216)	(1,239)
Stock-based compensation	1,234	2,854
Depreciation and amortization	1,540	1,219
Loss on revaluation of common stock warrant liabilities	115	-
Financing costs	418	-
Other income (expense), net	(19)	55
Adjusted EBITDA	**($14,954)**	**($15,421)**