

# **Energy Vault**

NRGV LISTED NYSE

Clean Energy On Demand

Investor Presentation | June 2022



# Disclaimer

## **Forward-Looking Statements**

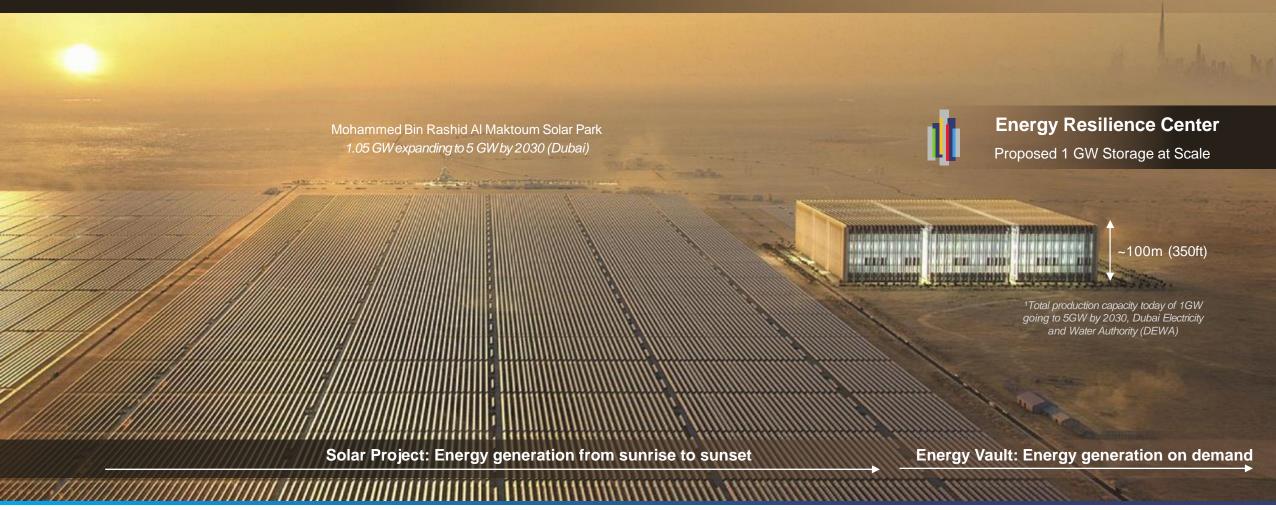
The statements described herein contain forward-looking statements. All statements other than statements of historical fact contained in this presentation contained in this presentation are forward-looking statements. Forward-looking statements involve risks, uncertainties, and assumptions and include statements regarding the future expansion of our business, future demand for renewable energy and energy storage, deployments, capabilities and capital resources. There are a significant number of factors that could cause actual results to differ materially from the statements made in this presentation, including: risks related to the rollout of Energy Vault's business and the timing of expected business milestones, developments and changes in the renewable energy market, the energy storage market and the general market, the continuing impact of COVID-19, political, economic, and business conditions, our limited operating history as a public company, whether MOUs and other strategic investments will result in future revenues, sufficiency of cash to support the company's expansion plans, the fact that the company has no committed revenue for future periods and risks affecting our partnerships and customers. Additional risks and uncertainties that could affect our business and financial results and condition are included under the caption "Risk Factors" in the Quarterly Report on Form 10-Q for the quarter ended March 31, 2022 we filed with the Securities and Exchange Commission (the "SEC") on May 16, 2022, which is available on our website at investors.energyvault.com and on the SEC's website at www.sec.gov. Additional information will also be set forth in other filings that we make with the SEC from time to time. All forward-looking statements in this presentation are based on our current expectations and assumptions and on information available to us as of the date hereof, and we do not assume any obligation to update the forward-looking statements provided to reflect events that occur or circumstances that exist

### **Non-GAAP Financial Metrics**

This presentation includes adjusted EBITDA, a non-GAAP financial measure that supplements the financial measures prepared in accordance with generally accepted accounting principles (GAAP). This non-GAAP financial measure excludes certain items and is not prepared in accordance with GAAP; therefore, the information is not necessarily comparable to other companies and should be considered as a supplement to, not a substitute for, or superior to, the corresponding measures calculated in accordance with GAAP. We present this non-GAAP measure because management believes it complements our GAAP financial measures and is a useful measure of the Company's performance. Please see the last slide of this presentation for a reconciliation of adjusted EBITDA to net loss, the most directly comparable GAAP financial measure.



Energy Vault is the creator of gravity-based, grid-scale energy storage solutions that are critical to power resiliency and the world's transition to renewable energy







# **Our Purpose**

# Enabling A World Powered By Renewable Resources

# **Our Vision**

To be the preeminent energy storage company of the 21st century.

# **Our Mission**

To accelerate the decarbonization of our planet by introducing the most advanced, environmentally sound and economical energy storage solutions





# **Experienced Management Team & Board of Directors**

# Management Team





















Robert Piconi Co-Founder & Director

Robert Piconi Co-Founder & CEO

Prior Executive leadership roles in Fortune 100 public companies across various industries Andrea Pedretti Co-Founder & CTO

Founder & CTO roles across multiple solar resource & renewable energy tech companies



Extensive operational financial leadership experience, including capital markets and M&A expertise



Leadership in worldclass benchmarks in business operations and global supply chains strategies



**Executive Leadership** roles in human resource management and talent acquisition



Executive leadership roles leading brand strategy, marketing and sales enablement

Marco Terruzzin **Chief Product** 

Product innovator and industry expert in climate change mitigation strategies

Josh McMorrow Chief Legal Officer

Senior Legal Executive with broad global experience in energy, industrial gas. construction. & chemicals industries

John G. Juna EVS™

Energy storage veteran with deep experience and expertise in grid-scale technology integration

**Kevin Keough** SVP, Corporate Development

Corporate development leadership across a broad range of high growth segments.



**Bill Gross** Zia Huque Co-Founder & Director Director

































Director

BBA University of Notre Dame: MBA Northwestern University's Kellogg School of Management



BS, Accounting & MBA Wake Forest University: Certified Public Accountant

University of Wisconsin-Milwaukee: BS & MA Stephens Institute of Technology

Cranfield University MSc International Human Resource Management, Orta Doğu Teknik Universities

Higher National Diploma **Business Studies** London UK

MSc Mech. Engineering PhD, Energy **Economics** MBA U.VA, Darden School

B.S. International Business, cum laude Trinity University

Honors Graduate University of Texas School of Law.

B.A. Western University MBA, Strategy and Finance Ivev Business School

Georgia Institute of Technology



**Mary Beth Mandanas** Non-Exec Director







Thomas Ertel Non-Exec Director

















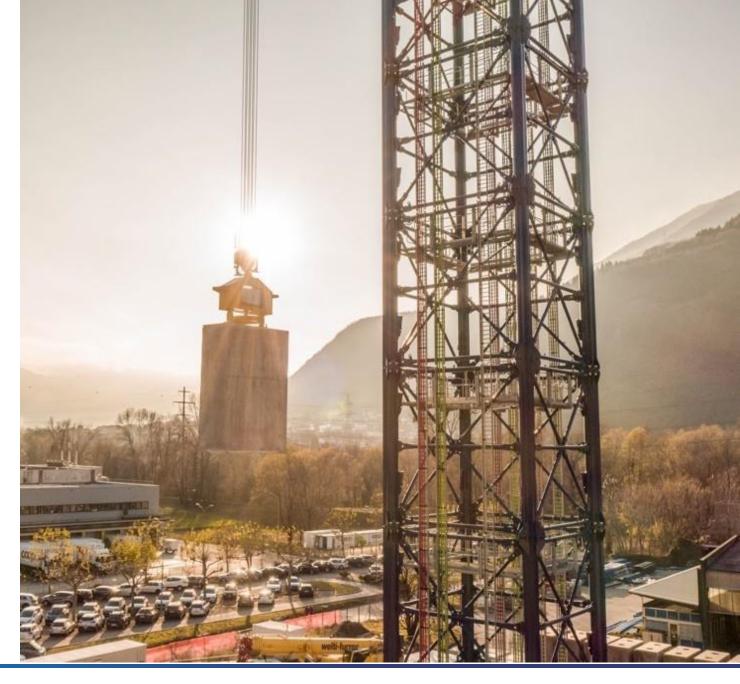




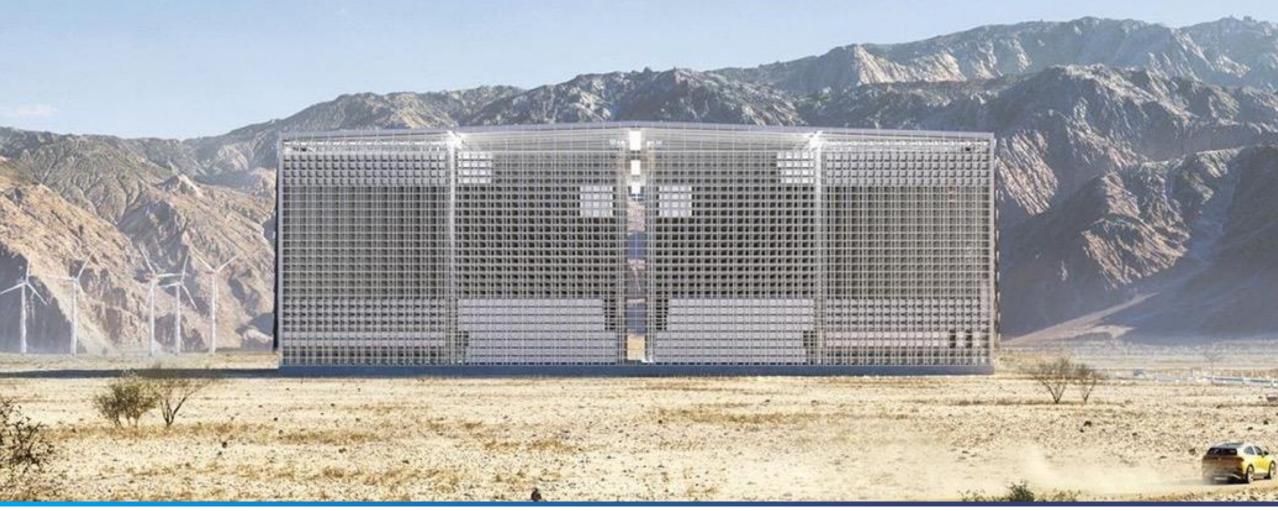


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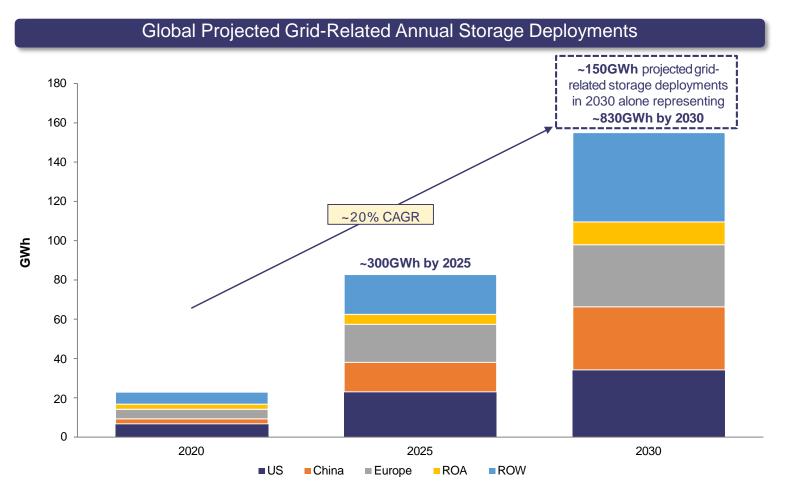


# 1. Clear Market Need for Energy Vault



# The Increase in Renewables is Driving Demand for Energy Storage

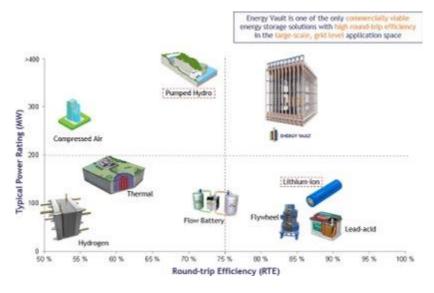
Global grid-scale energy storage projects are projected to increase more than 6x in capacity over the next 10 years



Source, 1: US Department of Energy: Energy Storage Grand Challenge Market Report 2020, World Energy Council, US Energy Information Administration, Journal of Energy Storage, Bloomberg NEF, Lazard

~\$270 Billion<sup>1</sup>

Cumulative investment in grid-related storage required over next 10 years



Increased consumption of electricity requires a reliable grid that can provide clean energy on demand



# **Available Energy Storage Today**

Significant drawbacks in scalability, economics and environmental risks limit deployment options

Pumped Hydro Chemical Other % of Global 5% Storage Capacity Today Thermal/Flow Batteries Other Mechanical Lithium-ion batteries Open Loop (Linked to natural water source) Lead-acid batteries Hot/cold storage Compressed air, Flywheels Tech Examples Closed Loop (Isolated reservoir) Cryogenic Other gravity-based Zinc hybrid batteries + Technically proven, long-life + Well-known via usage in consumer + Proven and reliable + Rapid response rates Advantages products / electric vehicles + Quick response time + Good fit for niche applications + Highly efficient Large land requirements (few opportunities Scarce raw materials with high carbon Low efficiency (50-60%) - Low efficiency (55-70%) Drawbacks for new build) footprint High operating costs - High operating costs Hazardous end-of-life disposal issues Harms ecosystems /carbon intensive - High carbon footprint High capex materials Performance degrades over time - Not modular /cannot be easily localized - Not scalable or modular High costs /low efficiency Safety / fire risks create high Not scalable – difficult to optimize location operating costs near generation resources - Short duration Source: Bloomberg NEF, DOE global storage database



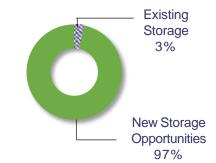
# **Energy Vault Technology Meets Customer Needs & Outperforms Alternatives**

		ENERGY VAULT	Pumped Hydro	Lithium <sup>1</sup>	Other Mech. /Thermal
Cost	<ul><li>Capex, opex and end-of-life</li><li>Degradation</li></ul>				
Size / Scale	<ul> <li>Ability to serve GWh / utility scale storage needs</li> <li>Significant localized supply chain</li> </ul>				
Flexibility	<ul><li>Location and environment agnostic</li><li>Operating temperature range</li><li>Duration</li></ul>				
Sustainability	<ul><li>Technical life</li><li>Safety (no fire / gas risks)</li></ul>				
Efficiency	<ul><li>Round-trip Efficiency (RTE)</li><li>Energy density</li></ul>				
ESG Profile	<ul> <li>Waste remediation</li> <li>Local manufacturing minimizes carbon footprint</li> <li>Full lifecycle sustainability</li> </ul>				

### Energy Vault Solves Utilities' Needs

- 1. Low cost levelized (Capex, Opex, EoL)
- 2. Highly scalable (GWh+); local supply chain (jobs+)
- 3. Flexibility power and duration (2 to 12+ hours)
- 4. No degradation in storage medium; long asset life
- 5. Safe and sustainableno fire / chemical risk, net zero

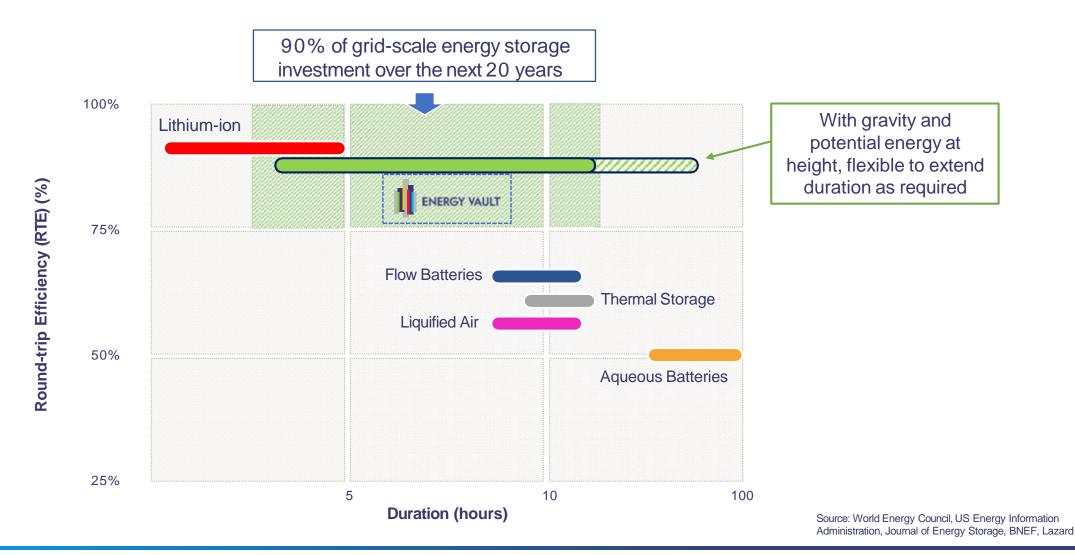
### 2050 Global Energy Storage Market



Source: Bloomberg NEF, DOE global storage database <sup>1</sup>Per S&P Global, Tesla owns ~83% of the US lithium-ion battery capacity.



# **Energy Vault's Technology Aligns with the Primary Market Demand for 2-12+ Hour Discharge Duration**





# 2. Energy Vault Overview



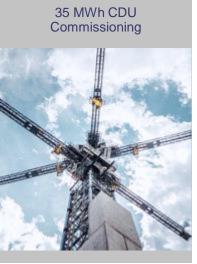
# 5 Years of Technology and Materials Innovation

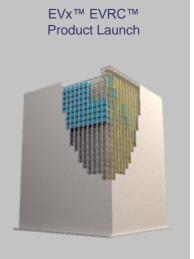
LONG SHORT **DURATION DURATION** 

Concept Design and 1/4 scale Prototype

**Technology Timeline** 









- **Energy Vault listed on the NYSE**
- Announced Strategic **Partnerships**
- Korea Zinc
- **BHP**
- **DG Fuels**
- **Enel**
- Saudi Aramco

2017 2018 2019

2020

2021

2022 →





















# **Energy Vault: Unmatched Energy Storage Breakthrough**

Combining conventional physics with 21st century software and material science

# Crane Industry







Motor/Generator Industry

Material Science





# **Industry Innovations for a Competitive Advantage**

Energy Vault synthesized four established industries and added advanced computer control and cutting-edge material science to create an energy storage economics breakthrough.

- Advanced Trajectory Computation
- Applied Computer Vision
- Material Science (Caltech + CEMEX Polymer)
- Waste Material Sequestration Technology
- Proprietary System Design







# **II** EVx™ Core Proven Technology "In a Box"







Simplified "Building Design" compliant with international building codes

Modular and Flexible duration and size

Fully Recyclable waste material

# Patent Portfolio and Key Intellectual Property Overview

Energy Vault has taken a deliberate and thoughtful approach to protecting its IP and trade secrets

Our patents and pending patent applications provide a competitive advantage over competitors and protect certain key elements of our technologies

Issued patents in the US

20

Pending<sup>1</sup> patents, 18 of which are international







EVx System

Patents focus on four primary aspects of our technology and process:

- 1) Using blocks to store energy
- Generating electricity by lowering the blocks
- Grabbing mechanism and method for lifting and lowering blocks
- 4) Damped self-centering mechanism



Patents protect visible components, Al software kept as proprietary trade secret

<sup>1</sup> Includes 1 allowed patent.



# **Energy Vault Solutions™ Technology Neutral Energy Storage Management & Integration Platform**









- ► The EVS™ division of Energy Vault was formed to provide a technology neutral energy storage management and integration platform
- ► EVS<sup>TM</sup> was formed to enable the integration of flexible energy assets and their economic dispatching using artificial intelligence and software optimization algorithms

# Technology Agnostic Energy Management System

Essential to enable all energy users to maximize economic return

# Gravity Energy Storage

Proprietary Technology & Key Differentiator

# Best Available Energy Technologies

Differentiated Platform & Supply Chain Essential for Significant Market Share

# Simulation & Modeling Engine

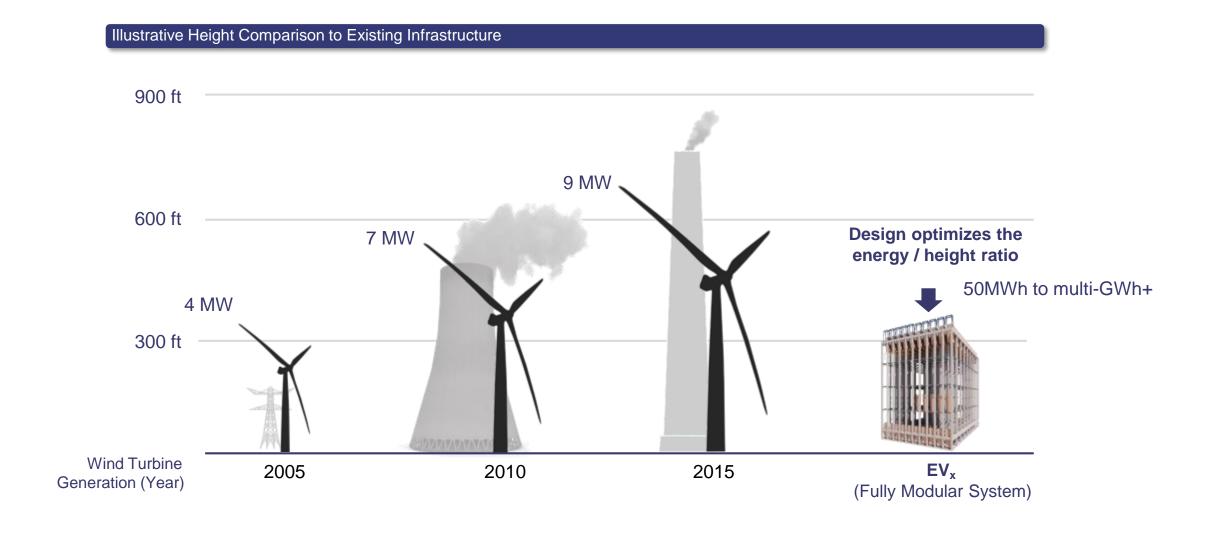
# Customers & Partners

- Utilities
- ▶ IPPs
- Developers
- Industrials (Mining\Data Ctr)
- ▶ Investors
- O&M Partners





# Physically Smaller Solution than Existing Energy Infrastructure





# **EV<sub>1</sub> Performance Results Above Expectations**

### Round-Trip Efficiency Above Initial Target

Round-trip Efficiency (RTE):

**Expected: 75.0%** 

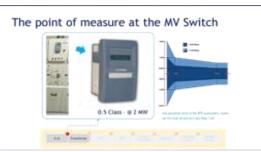
**Measured: 75.3%** 

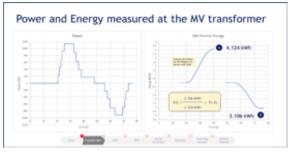
Extensive test campaign, with results presented to major US and Italian Utilities during their Due Diligence processes

EV<sub>1</sub> expected RTE achieved; EV<sub>x</sub> RTE expected to increase to 80-85%









Differentiated Brick-Making System Delivering Expected Quality

Mechanical strength: 8 MPa - better than expected

Pressing time: 10 minutes - as expected

Accuracy: +/- 0.2% - better than expected

Strategic Partners:









Coal Ash Remediation (CCR)

Plastic (GFRP)

Glass Fiber Reinforced

52%

Proprietary 35 ton composite bricks designed in partnership with CEMEX

Fly ash shred intermediates..



...converted into 35 ton mobile masses

Instead of ending up in landfills, coal ash waste and retired wind turbine blades can be converted into Mobile Mass bricks. creating economic value and significantly reducing environmental liabilities for **Energy Vault customers** 



Coal consumption produces ~1bn tons of coal ash waste per year. Total US clean-up costs estimated >\$150bn1

remediated Fly ash is already being recycled in lieu of Portland cement among many other uses

48% landfill

Unrecycled coal ash waste from the Marshall steam station in Salisbury, NC contaminates ground and wildlife

Wind blade landfill in Casper,

2020E 2021E 2022E 2023E 2024E 2025E



Turbine blades weigh ~3 tons each and have a ~25 year useful life

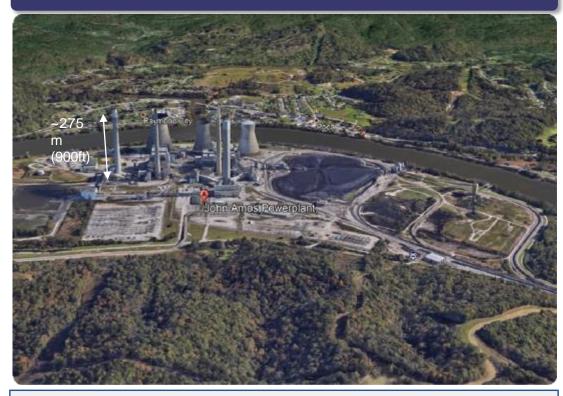
100% WY that contains over 1,000 landfill buried fiberglass blades Wind Turbine Blade Decommissioning (000s) Cumulative 31.4 42.6 56.5 75.1 99.9 131.7 Turbine Blades:

Source: American Coal Ash Association, IEA, Global Wind Energy Council <sup>1</sup>North Carolina Public Staff Utilities Commission, S&P Global, Earthjustice; calculated based on \$140,000 clean-up cost per acre.



# Illustrative Replacement of 3GW Coal Power Plant with Energy Vault Storage + Solar

# **Before**: Coal-Fired Power Station



# John Amos Power Plant

Putnam, West Virginia

Size of Plant: 2,900 MW In service date: 1973

SO<sub>2</sub> Emissions: 5,265 tons per year

NO<sub>2</sub> Emissions: 6,285 tons per year

CO<sub>2</sub> Emissions: 15,011,480 tons per year





# Energy Vault Resiliency Center (EVRC)

Storage capacity: 500 MWh In service date: 2023 (project idea)

SO<sub>2</sub> Emissions: 0 tons per year NO<sub>2</sub> Emissions: 0 tons per year CO<sub>2</sub> Emissions: 0 tons per year



# **Energy Vault is Purpose-Built to Serve the Global Energy Transition at Scale**



Gravity-based energy storage system offers a lower expected levelized cost than any current technology available – capex, opex and EOL



No topographical / geologic dependencies, can be built anywhere you can put a building – 100% local supply chain / job focus decreases production bottlenecks and eliminates country-specific material dependencies



Modular solution that can uniquely serve high power needs at **both shorter and longer GWh durations (2 – 12+ hours). Resilient to harsh conditions** and high ambient operating temperatures with no material increases in opex



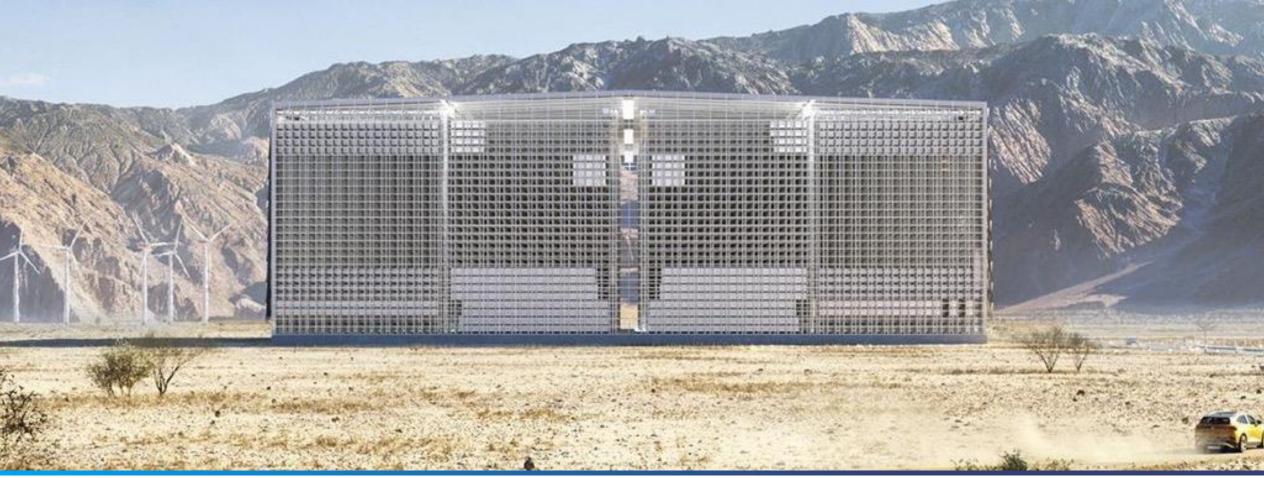
Unlike lithium chemical batteries, potential energy at height and block composites have **no storage capacity loss over time** 



No chemical, fire or safety risks; **Uniquely capable of utilizing waste materials** (i.e. coal bottom ash, mine tailings, fiberglass) to manufacture mobile masses; **Long asset operational lifespan**; low carbon footprint



# 3. Customers and Growth Visibility





# Rapidly Expanding, Global Blue-Chip Engagements

\$32+ billion sales funnel of customer engagements under discussion over the next 5 years





# **Project Delivery Scope**

Energy Vault Scope

Outsourced (EPC) Scope

Legend

# Outsourced assembly & construction model supports rapid growth & global execution

- Selection of pre-qualified engineering, procurement and construction (EPC) partner
- Project management and logistics

M2

 Components sourced from established global supply chains

M1

- Mold and press assembled on site
- Utilizes local soil, sand or waste material
- · Fixed frame erected in segments
- Power electronics hoisted into place using standard construction machinery
- Energy Vault oversees initial operations and maintenance
- Preventative and corrective maintenance through qualified local subcontractors

Energy Vault Sales Funnel

361 Total Engagements \$32+ bn in Potential Sales Contract Signed Revenue Recognized Planning & Procurement

QA / QC

M5

M6

Mobile Mass Manufacturing

.

Construction & Assembly

M7

M8

Installation

M9

M10

M11

M12

Post-COD

**O&M Services** 

Foundation Prep

M4

М3

- Foundation excavation and construction
- Locally procured and manufactured
- Local contractors

- Major structural and machani
- Major structural and mechanical components manufactured at vendor facilities
- Fixed frame segments assembled on-site
- Initial assembly of power components on ground

Testing & Commissioning

- Verification of proper installation
- System testing
- Training for successful turnover

& Support

Software Licensing

- Long-term software license
- Software upgrades & technical support

Revenue Recognition

Note: Revenue recognition will be on percent completion, not at cash received.

<sup>1</sup> Figures shown represent total MWh and \$ value of projects to be delivered over the next five years.



**Pipeline** 

Sales Cycle





# Q1 2022 Results

# \$'s in millions

	Q1 22	Q1 21	<u>Change</u>
Bookings [MWh]	-	-	-
Bookings [\$]	50.0	-	50.0
Revenue	42.9	-	42.9
Gross Profit	42.9		42.9
Gross Margin %	100.0%	0.0%	100.0%
Operating Expense			
Sales & Marketing	2.6	0.1	2.5
R&D	9.7	1.0	8.7
General & Admin	9.8	1.9	7.9
Total OPEX	22.0	3.0	19.0
% of Revenue	51.3%	0.0%	51.3%
Operating Income	20.9	(3.0)	23.9
% of Revenue	48.7%	0.0%	48.7%
Warranty Valuation	20.2	-	20.2
Transaction Expense	20.6	-	20.6
Other	(0.0)	26.0	(26.0)
<b>Total Other Expenses</b>	40.8	26.0	14.8
Net Income	(20.0)	(29.0)	9.0
Cash on Hand	303.5	105.1	198.4

# Q1 Results driven by Atlas Licensing & IP Agreement

- \$42.9M of Revenue reflects delivered IP. We have deferred future deliverables: Construction Supports Services and Technology Updates
- Increase in OPEX driven by headcount and administrative expenses to support growth and infrastructure necessary for a public company
  - OPEX of \$22M includes \$9.2M of stock-based compensation mainly driven by accelerated vesting driven by the IPO event.
  - OPEX (R&D) includes \$1.2M of depreciation mainly comprised of depreciation for our Customer Demonstration Unit in Switzerland.
- Stronger Operating Income offset by Warrant mark-to-market and Transaction Costs
- Cash balance at March 31 driven by Transaction proceeds, net of costs, of \$191M

# Q1 2022 Adjusted EBITDA Bridge

\$'s in 000

	2022 Q1	2021 Q1	Change
Net Income	(19,952)	(28,995)	9,043
Non-GAAP Adjustments: Interest income, net	(47)	(8)	(39)
Income tax expense	2	0	2
Depreciation and Amortization	1,218	17	1,201
EBITDA	(18,779)	(28,986)	10,207
Stock-based compensation expense	9,202	7	9,195
Change in FV of warrant liability	20,237		20,237
Transaction Costs	20,586		20,586
Foreign Exchange gains and losses	(11)	1,940	(1,951)
Change in FV of derivative liability	0	24,102	(24,102)
Adjusted EBITDA	31,235	(2,937)	34,172

- Strong Operating Income in Q1 was offset by non-cash and non-recurring costs driven by the February IPO
- ▶ EBITDA of \$(18.8)M driven by the in-quarter change in fair value of our warranty liability, transaction costs from our IPO, and stockbased compensation mainly driven by the acceleration of stock awards because of the IPO event
- Adding back non-cash and nonrecurring expenses of \$50M to EBITDA results in Adjusted EBITDA of \$31.2M for Q1

Stock Comp	\$9.2M
Warrant Liability	\$20.2M
Transaction Costs	\$20.6M

