

PROSPECTUS SUPPLEMENT NO. 6
(to Prospectus dated May 6, 2022)

Energy Vault Holdings, Inc.

Up to 111,151,176 Shares of Common Stock

5,166,666 Warrants to Purchase
Common Stock

This prospectus supplement supplements the prospectus dated May 6, 2022, as previously supplemented (the “Prospectus”), which forms a part of our registration statement on Form S-1 (No. 333-262720). This prospectus supplement updates and supplements certain information in the Prospectus as set forth below and is not complete without, and may not be delivered or utilized except in combination with, the Prospectus, including any amendments or supplements thereto. This prospectus supplement should be read in conjunction with the Prospectus and if there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

The Prospectus and this prospectus supplement relate to the issuance by us of up to an aggregate of up to 9,583,256 shares of our common stock, \$0.0001 par value per share (“Common Stock”), issuable upon the exercise of our publicly-traded warrants (the “Public Warrants”) and up to 5,166,666 shares of our Common Stock issuable upon exercise of private placement warrants issued to our Founders (as defined in the Prospectus) (the “Private Warrants”). The Prospectus and this prospectus supplement also relate to the resale from time to time, upon the expiration of lock-up agreements, by (i) the selling stockholders named in the Prospectus or their permitted transferees of up to 96,401,254 shares of our Common Stock and (ii) the selling holders of Private Warrants.

Our Common Stock is listed on the New York Stock Exchange under the symbol “NRGV.” On August 3, 2022, the closing price of our Common Stock was \$4.12 per share.

We are an “emerging growth company” under applicable federal securities laws and will be subject to reduced public company reporting requirements.

INVESTING IN OUR SECURITIES INVOLVES RISKS THAT ARE DESCRIBED IN THE “RISK FACTORS” SECTION BEGINNING ON PAGE 9 OF THE PROSPECTUS.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued under this prospectus supplement or the Prospectus or determined if this prospectus supplement or the Prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is August 4, 2022.

MANAGEMENT

The following information is provided to supplement the “Management” section of the Prospectus to reflect the appointment of Josh McMorrow as our Chief Legal Officer in May 2022.

Josh McMorrow, age 48, has served as Energy Vault’s Chief Legal Officer since May 2022. From 2019 until 2022, Mr. McMorrow served as Vice President, Group General Counsel and Secretary of Atotech Limited, a special chemicals technology company. From 2014 to 2019, Mr. McMorrow served as Vice President, Chief Commercial Counsel and Global Head of Litigation at Weatherford International plc, a global energy services company. From 2012 to 2014, he served as Vice President and General Counsel at PSC (now HydrochemPSC), an industrial and environmental services company. From 2004 to 2012, he served in various positions with Air Liquide, including General Counsel of Air Liquide Engineering & Construction – Americas, and Assistant General Counsel to Air Liquide USA, an industrial gases company. Mr. McMorrow holds a J.D. from University of Texas School of Law, with Honors, and a B.S. from Trinity University, cum laude.

Mr. McMorrow has no direct or indirect material interest in any transaction required to be disclosed pursuant to Item 404(a) of Regulation S-K promulgated under Exchange Act, nor are any such transactions currently proposed. There are no family relationships between Mr. McMorrow and any our directors or other executive officers.

SELLING SECURITYHOLDERS

The following information is provided to update the selling stockholders table in the Prospectus to reflect the distribution of 13,848,605 shares of Common Stock of one selling stockholder, Idealab Studio, LLC, or Idealab, to its members, including the distribution of 5,641,002 shares of Common Stock to certain persons that may be deemed to be our affiliates or are otherwise entitled to have their shares registered for resale hereunder. Such distribution was made under the Prospectus pursuant to the section entitled “Plan of Distribution” and in accordance with the lock-up agreement entered into between us and Idealab at the Closing. No other changes or amendments to the selling securityholders tables as set forth in the Prospectus are being made hereby.

Subject to the terms of lock up agreements entered into by former stockholders of Legacy Energy Vault and the Founders, the Selling Securityholders may from time to time offer and sell any or all of the Common Stock or Warrants set forth below pursuant to the Prospectus, this prospectus supplement and any other accompanying prospectus supplement. The Selling Securityholders will pay any underwriting discounts and commissions and expenses incurred by the Selling Securityholders for brokerage, accounting, tax or legal services or any other expenses incurred by the Selling Securityholders in disposing of the securities. We will bear the costs, fees and expenses incurred in effecting the registration of the securities covered by this prospectus, including all registration and filing fees, listing fees and fees and expenses of our counsel and our independent registered public accounting firm.

The following table sets forth, as of the date of this prospectus supplement, the names of the Selling Securityholders involved in the distribution, the aggregate number of shares of Common Stock beneficially owned by the Selling Securityholders assuming the distribution had occurred immediately prior to the commencement of the offering, the number of shares of our Common Stock that may be sold by the Selling Securityholders under the Prospectus, as supplemented by this prospectus supplement, and the number of shares of Common Stock that the Selling Securityholders will beneficially own after this offering. For purposes of the table below, we have assumed that (i) after this

offering none of the shares of Common Stock or Private Warrants covered by the Prospectus will be beneficially owned by the Selling Securityholders and (ii) the Selling Securityholders will not acquire beneficial ownership of any additional securities, including any Earn Out Shares. In addition, we assume that the Selling Securityholders have not sold, transferred or otherwise disposed of, our securities in transactions exempt from the registration requirements of the Securities Act. The beneficial ownership percentages set forth in the table below are based on 134,441,241 shares of Common Stock issued and outstanding as of June 30, 2022.

We have determined beneficial ownership in accordance with the rules of the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated below, to our knowledge, the persons and entities named in the tables have sole voting and sole investment power with respect to all securities that they beneficially own, subject to community property laws where applicable.

The Selling Securityholders may sell or otherwise transfer all, some or none of such shares in this offering. See “Plan of Distribution” in the Prospectus.

	Number of Shares Beneficially Owned Before Sale of All Shares of Common Stock Offered Hereby		Number of Shares of Common Stock to be Sold in the Offering	Number of Shares Beneficially Owned After Sale of All Shares of Common Stock Offered Hereby	
	Number	%		Number	Number
Idealab Studio, LLC(20)	1,734,943	1.3%	1,734,943	-	-
Gross Goodstein Living Trust(20)	5,402,950	4.0%	5,402,950	-	-
Idealab Holdings, LLC(20)	1,483,390	1.1%	1,483,390	-	-
Prime Movers Lab(22)	7,552,864	5.6%	7,552,864	-	-
Robert Piconi(24)	14,915,280	11.1%	14,915,280	-	-
Andrea Pedretti(39)	3,146,685	2.3%	73,776	3,072,909	2.3%

- (20) Bill Gross, one of our directors, is chairman of the board and chief executive officer of Idealab Studio, LLC. Idealab Studio, LLC has a board of managers comprised of Mr. Gross, Allen Morgan, and Howard Morgan. The board of managers acts by majority consent so no single person has sole voting or dispositive authority over such securities. The Gross Goodstein Living Trust, dated April 18, 2006 (the “Gross Trust”) owns a majority of the class of securities entitled to elect two directors to Idealab Studio, LLC’s board of managers. As such, Mr. Gross may be deemed to have or share beneficial ownership of the common stock held directly by Idealab Studio, LLC. Mr. Gross and his wife are co-Trustees of the Gross Trust. Mr. Gross may therefore be deemed to share beneficial ownership of the securities held by the Gross Trust. Idealab Holdings, LLC (“Holdings”) is a wholly-owned subsidiary of Idealab, a California corporation. Idealab is managed by a board of directors consisting of Bill Gross, Marcia Goodstein (Mr. Gross’s wife), Renee LaBran and Bob Kavner, and no single person has voting or dispositive authority over the securities reported herein. Mr. Gross may be deemed to share beneficial ownership of the securities held by Holdings. Mr. Gross disclaims beneficial ownership of securities held by Idealab Studios, LLC, the Gross Trust and Holdings except to the extent of his pecuniary interest therein. The business address of the foregoing persons is 130 West Union Street, Pasadena, CA 91103.
- (22) Shares listed as beneficially owned, and offered hereby, consist of (a) 1,245,077 shares of Common Stock held directly by Energy Vault PML SPV 1 LP; (b) 6,217,287 shares of Common Stock held directly by Prime Movers Growth Fund I, LP; and (c) 90,500 shares of Common Stock held directly by Prime Movers Lab Fund II LP. Zia Huque, one of our directors, Dakin Sloss and Davis Simonoff are general partners of these stockholders of record and may each be deemed to be beneficial owners of these securities. The business address of this stockholder is PO Box 12829, Jackson, WY 83002.
- (24) Shares listed as beneficially owned, and offered hereby, consist of (i) 6,299,388 shares of Common Stock held of record by Mr. Piconi; (ii) 4,307,946 shares of Common Stock held of record by the Piconi Family 2021 Delaware Trust for which Mr. Piconi serves as investment advisor; and (iii) 4,307,946 shares of Common Stock held of record by the Piconi 2021 Delaware Trust for which Mr. Piconi serves as investment advisor.
- (39) Shares listed as beneficially owned consist of (i) 1,291,488 shares of Common Stock and (ii) 1,855,197 shares of Common Stock issuable pursuant to restricted stock units that will be vested within 60 days of the date of this prospectus supplement. In connection with a personal loan entered into in December 2019, Mr. Pedretti has granted to the lender a security interest in 1,083,760 shares of our Common Stock. Shares listed as offered hereby consist of 73,776 shares of Common Stock held directly by Mr. Pedretti.