

PROSPECTUS SUPPLEMENT NO. 5  
(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 is being filed to update and supplement the information in the Prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 2, 2022 (the “Current Report”). Accordingly, we have attached the Current Report to 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 and Public Warrants are listed on the New York Stock Exchange under the symbols “NRGV” and “NRGV WS,” respectively. On August 1, 2022, the closing price of our Common Stock was \$4.06 per share and the closing price for our Public Warrants was \$0.99 per warrant.

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 2, 2022.

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### UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

### FORM 8-K

#### CURRENT REPORT

Pursuant to Section 13 or 15(d) of the  
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): August 2, 2022

## Energy Vault Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction  
of incorporation)

001-39982  
(Commission  
File Number)

85-3230987  
(IRS Employer  
Identification No.)

4360 Park Terrace Drive, Suite 100  
Westlake Village, California  
(Address of principal executive offices)

91361  
(Zip Code)

Registrant’s telephone number, including area code: (805) 852-0000

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.0001 per share	NRGV	New York Stock Exchange
Redeemable warrants, each warrant exercisable for one share of common stock at an exercise price of \$11.50 per share	NRGV WS	New York Stock Exchange

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

#### Item 8.01. Other Events

On August 2, 2022, Energy Vault Holdings, Inc. (the “Company”) issued a press release (the “Press Release”) announcing the results of the completed redemption of all of its outstanding public warrants to purchase shares of the Company’s common stock, par value \$0.0001 per share, that were issued under the Warrant Agreement, dated February 3, 2021, by and between the Company and Continental Stock Transfer & Trust Company, as warrant agent, as part of the units sold in the Company’s initial public offering.

A copy of the Press Release is filed as Exhibit 99.1 hereto and is incorporated by reference herein. Neither this Current Report on Form 8-K nor the press release attached hereto as Exhibit 99.1 constitutes an offer to sell or the solicitation of an offer to buy any of the Company’s securities, and neither shall constitute an offer, solicitation or sale in any jurisdiction in which such offering, solicitation or sale would be unlawful.

#### Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
<a href="#">99.1</a>	<a href="#">Press release, dated August 2, 2022</a>

#### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ENERGY VAULT HOLDINGS, INC.

By: /s/ David Hitchcock

Name: David Hitchcock

Title: Interim Chief Financial Officer

Date: August 2, 2022

Exhibit 99.1

#### Energy Vault Announces Completion of Redemption of Warrants

LUGANO, Switzerland & WESTLAKE VILLAGE, Calif., August 2, 2022 – Energy Vault Holdings, Inc. (NYSE: NRGV, NRGV WS) (“Energy Vault” or the “Company”), a leader in sustainable, grid-scale energy storage solutions, today announced the completion of the redemption of all outstanding public warrants (other than Private Placement Warrants held by the Sponsor or its Permitted Transferees through and including the Redemption Date) (as defined in the Warrant Agreement) (the “Public Warrants”) to purchase shares of the Company’s common stock, par value \$0.0001 per share (the “Common Stock”), that were issued under the Warrant Agreement, dated as of February 3, 2021 by and between the Company (f/k/a Novus Capital Corp. II) and Continental Stock Transfer & Trust Company, as warrant agent (the “Warrant Agent”), for a redemption price of \$0.10 per Warrant (the “Redemption Price”), that remained outstanding at 5:00 p.m. New York City time on August 1, 2021 (the “Redemption Date”).

On July 1, 2022, the Company issued a press release stating that, pursuant to the terms of the Warrant Agreement, on the Redemption Date, it would redeem all of the outstanding Public Warrants at the Redemption Price. Of the 9,583,333 million Public Warrants that were outstanding as of the closing of the Business Combination, 682,948 Public Warrants were exercised for cash at an exercise price of \$11.50 per share of Common Stock and 8,602,400 Public Warrants were exercised on a cashless basis in exchange for an aggregate of 2,172,854 shares of Common Stock, in each case in accordance with the terms of the Warrant Agreement, representing approximately 96.7% of the outstanding Public Warrants. Following the Redemption Date, the Company had no Public Warrants outstanding. The Company’s 5,166,666 Private Placement Warrants

held by the Sponsor or its Permitted Transferees through and including the Redemption Date remain outstanding and are not affected by the redemption of the Public Warrants.

In connection with the redemption, the Public Warrants ceased trading on the New York Stock Exchange and were delisted, with the trading suspension announced after close of market on August 1, 2022. The Common Stock continues to trade on the New York Stock Exchange under the symbol “NRGV”.

Additional information can be found on Energy Vault’s Investor Relations website: <https://investors.energyvault.com/>

### **About Energy Vault**

Energy Vault develops and deploys turnkey sustainable energy storage solutions designed to transform the world’s approach to utility-scale energy storage in realizing decarbonization while maintaining grid resiliency. The company’s proprietary energy management system and optimization software suite is technology agnostic in its ability to orchestrate various generation and energy storage resources to help utilities, independent power producers and large industrial energy users to significantly reduce their levelized cost of energy while maintaining power quality and grid reliability. Energy Vault’s EVx™ gravity energy storage system utilizes eco-friendly materials with the ability to integrate waste materials for beneficial re-use. Energy Vault is facilitating the shift to a circular economy while accelerating the clean energy transition for its customers. For additional information, please visit: [www.energyvault.com](http://www.energyvault.com)

### **No Offer or Solicitation**

This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any offer of any of the Company’s securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such jurisdiction.

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### **Forward Looking Statements**

This press release contains forward-looking statements that involve risks, uncertainties, and assumptions including statements regarding our future expansion, 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 press release, including: risks related to the rollout of Energy Vault’s business and the timing of expected business milestones, developments and changes in 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 financial results are included under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Form 10-Q filed with the Securities and Exchange Commission (the “SEC”) on May 16, 2022, which is available on our website at [investors.energyvault.com](http://investors.energyvault.com) and on the SEC’s website at [www.sec.gov](http://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 press release are based 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 after the date on which they were made, except as required by applicable law.

### **Contacts**

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