#### Prospectus Supplement No. 1 to Reoffer Prospectus of Rigetti Computing, Inc.

### Up to 75,000 Shares of Common Stock Offered by Selling Securityholders

This Prospectus Supplement, dated June 16, 2022 (this "Supplement"), supplements the reoffer prospectus filed as part of Post-Effective Amendment No. 1 to the Registration Statement on Form S-8 filed by Rigetti Computing, Inc. (the "Company", "us", "our" or "we") with the Securities and Exchange Commission (the "SEC") on June 15, 2022 (the "Reoffer Prospectus"), relating to the resale of up to 75,000 shares (the "Shares") of common stock, par value \$0.0001 per share (the "Common Stock"), of the Company which may be offered and sold from time to time by certain of our executive officers (the "Selling Securityholders") who are deemed to be "affiliates" of the Company as defined in Rule 405 under the Securities Act of 1933, as amended (the "Securities Act"), who have acquired such shares in connection with stock awards made under the Rigetti Computing, Inc. 2022 Equity Incentive Plan.

You should read this Supplement in conjunction with the Reoffer Prospectus. This Supplement is qualified by reference to the Reoffer Prospectus, except to the extent the information in this Supplement supersedes the information contained in the Reoffer Prospectus.

The Selling Securityholders may from time to time sell, transfer or otherwise dispose of any or all of the Shares through underwriters or dealers, directly to purchasers (or a single purchaser) or through broker-dealers or agents. If underwriters or dealers are used to sell the shares, we will name them and describe their compensation in a prospectus supplement. The shares of Common Stock may be sold in one or more transactions at fixed prices, prevailing market prices at the time of sale, prices related to the prevailing market prices, varying prices determined at the time of sale or negotiated prices. We do not know when or in what amount the Selling Securityholders may offer the shares for sale. The Selling Securityholders may sell any, all or none of the shares offered by this Reoffer Prospectus. See *"Plan of Distribution"* beginning on page 9 of the Reoffer Prospectus for more information about how the Selling Securityholders may sell or dispose of the Shares. The Selling Securityholders will bear all expenses of registration incurred in connection with this offering, including any other expenses incurred by us in connection with the registration and offering that are not borne by the Selling Securityholders.

Our Common Stock is quoted on The Nasdaq Capital Market ("Nasdaq") under the symbol "RGTI". On June 15, 2022, the closing sales price of our Common Stock on Nasdaq was \$4.50 per share.

The amount of securities to be offered or resold under the Reoffer Prospectus by the Selling Securityholders or other person with whom such Selling Securityholders are acting in concert for the purpose of selling our securities, may not exceed, during any three month period, the amount specified in Rule 144(e) under the Securities Act.

## See the section entitled "Risk Factors" beginning on page 6 of the Reoffer Prospectus to read about factors you should consider before buying our securities.

If any Selling Securityholder utilizes a broker-dealer in the sale or distribution of the Shares, such broker-dealer may receive commissions in the form of discounts, concessions, or commissions from such Selling Securityholder or commissions from purchasers of the Shares for whom they may act as agent or to whom they may sell as principal. The SEC may take the view that, under certain circumstances, such Selling Securityholder and any broker-dealers or agents that participate with such Selling Securityholder in the distribution of the Shares may be deemed to be "underwriters" within the meaning of the Securities Act, and commissions, discounts or concessions received by any such broker-dealer or agent may be deemed to be underwriting commissions under the Securities Act. See the section titled "*Plan of Distribution*" in the Reoffer Prospectus.

# You should rely only on the information provided in the Reoffer Prospectus and Supplement, as well as the information incorporated by reference into this Reoffer Prospectus, this Supplement and any other applicable prospectus supplement. Neither the SEC nor any state securities commission has approved or disapproved of these securities or determined if the Reoffer Prospectus or Supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The information set forth under the caption "Selling Securityholders" in the Reoffer Prospectus is amended and restated in its entirety as set forth below and is provided for the primary purpose of updating the total number of shares of Common Stock outstanding as of June 15, 2022 and the table of Selling Securityholders contained in the Reoffer Prospectus. Terms not otherwise defined herein shall have the meanings set forth in the Reoffer Prospectus.

The date of this Supplement is June 16, 2022

#### SELLING SECURITYHOLDERS

The following table sets forth information regarding beneficial ownership of our Common Stock as of June 15, 2022, as adjusted to reflect the shares of Common Stock that may be sold from time to time pursuant to this Reoffer Prospectus, for all Selling Securityholders, consisting of the individuals shown holding shares of Common Stock listed in the column entitled "Number of Shares Being Offered."

The shares of Common Stock offered by the Selling Securityholders hereunder consist of an aggregate of 75,000 shares of Common Stock acquired by certain of our executive officers under the 2022 Plan. The Selling Securityholders may sell any, all, or none of the shares of Common Stock, and we do not know when or in what amount the Selling Securityholders may sell their shares hereunder following the effective date of the registration statement on Form S-8 to which this Reoffer Prospectus relates.

The amount of the shares of Common Stock to be offered or resold under this Reoffer Prospectus by each Selling Securityholder and any other person with whom he or she is acting in concert for the purpose of selling the shares of Common Stock, may not exceed, during any three-month period, the amount specified in Rule 144(e) under the Securities Act.

We have determined beneficial ownership in accordance with the rules of the SEC and it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares of Common Stock that they beneficially owned as of the Determination Date, subject to community property laws where applicable.

The percentage of shares of Common Stock beneficially owned is computed on the basis of 114,855,657 shares of Common Stock outstanding as of June 15, 2022.

Unless otherwise indicated, the address for each Selling Securityholder listed in the table below is c/o Rigetti Computing, Inc., 775 Heinz Avenue, Berkeley, California 94710.

	Beneficial Ownership Prior to This Offering			Beneficial Ownership After This Offering(4)	
Name of Selling Securityholder	Shares	% of Total Voting Power Before This Offering	Number of Shares Being Offered	Shares	% of Total Voting Power After This Offering
Chad Rigetti(1)	8,038,513	6.8%	45,000	7,993,513	6.8%
Brian Sereda <sup>(2)</sup>	281,929	*	5,000	276,929	*
Rick Danis(3)	358,631	*	25,000	333,631	*

Less than one percent

- (1) Dr. Rigetti has served as our Chief Executive Officer and President and a member of our board of directors since March 2, 2022, the Closing Date of the Business Combination. Dr. Rigetti previously served as Chief Executive Officer, founder and a director of Legacy Rigetti since the company's inception. Shares of Common Stock beneficially owned prior to this offering consist of (i) 4,537,097 shares of Common Stock held of record, including the 45,000 shares of Common Stock granted on June 10, 2022, (ii) 1,049,016 shares issuable upon vesting and settlement of restricted stock units ("RSUs") and (iii) 2,452,400 shares issuable upon exercise of options.
- (2) Mr. Sereda has served as our Chief Financial Officer since March 2, 2022, the Closing Date of the Business Combination. Mr. Sereda previously served as Chief Financial Officer of Legacy Rigetti from August 2021 until the consummation of the Business Combination. Shares of Common Stock beneficially owned prior to this offering consist of (i) 3,752 shares of Common Stock held of record, including the 5,000 shares of Common Stock granted on June 10, 2022 and (ii) 278,177 shares issuable upon vesting and settlement of RSUs.
- (3) Mr. Danis has served as our General Counsel and Corporate Secretary since March 2, 2022, the Closing Date of the Business Combination. Mr. Danis previously served as General Counsel and Corporate Secretary of Legacy Rigetti from July 2019 until the consummation of the Business Combination. Shares of Common Stock beneficially owned prior to this offering consist of (i) 67,764 shares of Common Stock held of record, including the 25,000 shares of Common Stock granted on June 10, 2022, (ii) 72,289 shares issuable upon vesting and settlement of RSUs and (iii) 218,578 shares of Common Stock issuable upon exercise of options.
- (4) Assumes that all of the Common Stock held by the Selling Securityholders and being offered under this Reoffer Prospectus is sold, and that the Selling Securityholders will not acquire additional shares of any class of Common Stock before the completion of this offering. The Selling Securityholders may sell any, all, or none of the Common Stock and we do not know when or in what amount the Selling Securityholders may sell their Common Stock hereunder.

#### Other Material Relationships with the Selling Securityholders

#### Indemnification of Officers and Directors

The Bylaws of the Company (the "Bylaws") provide that the Company will, in certain situations, indemnify its directors and officers and may indemnify other employees and other agents, to the fullest extent permitted by law. Any indemnified person is also entitled, subject to certain limitations, to advancement, direct payment, or reimbursement of reasonable expenses (including attorneys' fees and disbursements) in advance of the final disposition of the proceeding.

In addition, the Company entered into separate indemnification agreements with our directors and officers. These agreements, among other things, require the Company to indemnify our directors and officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of their services as one of our directors or officers or any other company or enterprise to which the person provides services at our request.

We maintain a directors' and officers' insurance policy pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers.

#### Stockholder Support Agreements

On October 6, 2021, Supernova Partners Acquisition Company II, Ltd., Legacy Rigetti and certain former stockholders of Legacy Rigetti, including Dr. Rigetti, entered into certain support agreements, pursuant to which among other things, such parties agreed to approve the Business Combination. Such stockholders further agreed to be bound by the lock-up restrictions included in the Bylaws.

#### Compensation Arrangements

We have employment agreements with Dr. Rigetti, Mr. Sereda and Mr. Danis that, among other things, provide for certain change in control benefits, as well as severance benefits. We have granted stock options and restricted stock units to Dr. Rigetti, Mr. Sereda and Mr. Danis.