
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

**FORM S-8
REGISTRATION STATEMENT UNDER THE
SECURITIES ACT OF 1933**

LanzaTech Global, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

92-2018969
(IRS Employer Identification No.)

**8045 Lamon Avenue, Suite 400
Skokie, IL**
(Address of Principal Executive Offices)

60077
(Zip Code)

**LanzaTech Global, Inc. 2023 Long-Term Incentive Plan
LanzaTech NZ, Inc. 2019 Stock Plan
LanzaTech New Zealand Limited 2015 Stock Plan
LanzaTech New Zealand Limited 2013 Stock Plan**
(Full title of the plan)

Joe Blasko
**8045 Lamon Avenue, Suite 400
Skokie, Illinois 60077**
(Name and address of agent for service)

(847) 324-2400
(Telephone number, including area code, of agent for service)

Copy to:
**Kerry S. Burke
Brian Rosenzweig
Covington & Burling LLP
One CityCenter
Washington, D.C. 20001
Tel: (202) 662-6000**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

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 7(a)(2)(B) of the Securities Act.

PART I
INFORMATION REQUIRED IN THE SECTION 10(A) PROSPECTUS

Item 1. Plan Information.

A prospectus setting forth the information requested by this Item will be sent or given to participants in each plan covered by this registration statement (the "Registration Statement") pursuant to Rule 428(b)(1) of the Securities Act. In accordance with the rules and regulations of the Securities Exchange Commission (the "Commission") and the instructions to Form S-8, such documents are not being filed with the Commission as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424(b) under the Securities Act.

Item 2. Registration Information and Employee Plan Annual Information.

A prospectus setting forth the information requested by this Item is included in documents sent or given to participants in each plan covered by this Registration Statement pursuant to Rule 428(b)(1) of the Securities Act. In accordance with the rules and regulations of the Commission and the instructions to Form S-8, such documents are not being filed with the Commission as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424(b) under the Securities Act.

PART II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The Registrant is subject to the informational and reporting requirements of Section 12(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and in accordance therewith files reports and other information with the Commission. The following documents, which are on file with the Commission, are incorporated in this Registration Statement by reference:

- (a) The Registrant's Annual Report on Form 10-K (File No. 001-40282) for the fiscal year ended December 31, 2022, filed on March 29, 2023;
- (b) The Registrant's Current Report on Form 8-K (File No. 001-40282) (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that are related to such items) filed on February 13, 2023, as amended on March 28, 2023; and
- (c) The Registrant's description of its Common Stock contained in the Registrant's Registration Statement on Form 8-A (File No. 001-40282) filed on March 23, 2021, as amended on August 2, 2021, under Section 12(b) of the Exchange Act, including any amendments or reports filed for purposes of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment that indicates that all securities offered hereby have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be part hereof from the date of the filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interest of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Our second amended and restated certificate of incorporation (our “Charter”) provides that all of our directors, officers, employees and agents shall be entitled to be indemnified by us to the fullest extent permitted by Section 145 of the Delaware General Corporation Law (“DGCL”).

Section 145 of the DGCL permits a corporation to indemnify any director or officer of a corporation against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with any action, suit or proceeding brought by reason of the fact that such person is or was a director or officer of the corporation, if such person acted in good faith and in a manner that he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, if he had no reason to believe his conduct was unlawful. In a derivative action (i.e., one brought by or on behalf of the corporation), however, indemnification may be made only for expenses, actually and reasonably incurred by any director or officer in connection with the defense or settlement of such action or suit, if such person acted in good faith and in a manner that he reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification will be made if such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the Delaware Court of Chancery or the court in which the action or suit was brought shall determine that the defendant is fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment of expenses incurred or paid by a director, officer or controlling person in a successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to the court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

In accordance with Section 102(b)(7) of the DGCL, our Charter provides that no director shall be personally liable to us or any of our stockholders for monetary damages resulting from breaches of their fiduciary duty as directors, except to the extent such limitation on or exemption from liability is not permitted under the DGCL. The effect of this provision of our Charter is to eliminate our rights and those of our stockholders (through stockholders’ derivative suits on our behalf) to recover monetary damages against a director for breach of the fiduciary duty of care as a director, including breaches resulting from negligent or grossly negligent behavior, except, as restricted by Section 102(b)(7) of the DGCL. However, this provision does not limit or eliminate our rights or the rights of any stockholder to seek non-monetary relief, such as an injunction or rescission, in the event of a breach of a director’s duty of care.

If the DGCL is amended to authorize corporate action further eliminating or limiting the liability of directors, then, in accordance with our Charter, the liability of our directors to us or our stockholders will be eliminated or limited to the fullest extent authorized by the DGCL, as so amended. Any repeal or amendment of provisions of our Charter limiting or eliminating the liability of directors, whether by our stockholders or by changes in law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to further limit or eliminate the liability of directors on a retroactive basis.

Our Charter also provides that we will, to the fullest extent authorized or permitted by applicable law, indemnify our current and former officers and directors, as well as those persons who, while directors or officers of our corporation, are or were serving as directors, officers, employees or agents of another entity, trust or other enterprise, including service with respect to an employee benefit plan, in connection with any threatened, pending or

completed proceeding, whether civil, criminal, administrative or investigative, against all expense, liability and loss (including, without limitation, attorney's fees, judgments, fines, ERISA excise taxes and penalties and amounts paid in settlement) reasonably incurred or suffered by any such person in connection with any such proceeding.

Notwithstanding the foregoing, a person eligible for indemnification pursuant to our Charter will be indemnified by us in connection with a proceeding initiated by such person only if such proceeding was authorized by our board of directors, except for proceedings to enforce rights to indemnification.

The right to indemnification which is conferred by our Charter is a contract right that includes the right to be paid by us the expenses incurred in defending or otherwise participating in any proceeding referenced above in advance of its final disposition, provided, however, that if the DGCL requires, an advancement of expenses incurred by our officer or director (solely in the capacity as an officer or director of our corporation) will be made only upon delivery to us of an undertaking, by or on behalf of such officer or director, to repay all amounts so advanced if it is ultimately determined that such person is not entitled to be indemnified for such expenses under our Charter or otherwise.

The rights to indemnification and advancement of expenses will not be deemed exclusive of any other rights which any person covered by our Charter may have or hereafter acquire under law, our Charter, our amended and restated bylaws (the "Bylaws"), an agreement, vote of stockholders or disinterested directors, or otherwise.

Any repeal or amendment of provisions of our Charter affecting indemnification rights, whether by our stockholders or by changes in law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to provide broader indemnification rights on a retroactive basis, and will not in any way diminish or adversely affect any right or protection existing at the time of such repeal or amendment or adoption of such inconsistent provision with respect to any act or omission occurring prior to such repeal or amendment or adoption of such inconsistent provision. Our Charter will also permit us, to the extent and in the manner authorized or permitted by law, to indemnify and to advance expenses to persons other than those specifically covered by our Charter.

Our Bylaws include the provisions relating to advancement of expenses and indemnification rights consistent with those which are set forth in our Charter. In addition, our Bylaws provide for a right of indemnity to bring a suit in the event a claim for indemnification or advancement of expenses is not paid in full by us within a specified period of time. Our Bylaws also permit us to purchase and maintain insurance, at our expense, to protect us and/or any director, officer, employee or agent of our corporation or another entity, trust or other enterprise against any expense, liability or loss, whether or not we would have the power to indemnify such person against such expense, liability or loss under the DGCL.

Any repeal or amendment of provisions of our Bylaws affecting indemnification rights, whether by our board of directors, stockholders or by changes in applicable law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to provide broader indemnification rights on a retroactive basis, and will not in any way diminish or adversely affect any right or protection existing thereunder with respect to any act or omission occurring prior to such repeal or amendment or adoption of such inconsistent provision.

We have entered into customary indemnification agreements with our directors and executive officers.

Item 8. Exhibits.

Exhibit Number	Description
3.1	<u>Amended and Restated Certificate of Incorporation of LanzaTech Global, Inc., (incorporated by reference to Exhibit 3.1 of LanzaTech Global Inc.'s Current Report on Form 8-K, filed with the SEC on February 13, 2023).</u>
3.2	<u>Amended and Restated Bylaws of LanzaTech Global, Inc. (incorporated by reference to Exhibit 3.2 of LanzaTech Global Inc.'s Current Report on Form 8-K, filed with the SEC on February 13, 2023).</u>
5.1*	<u>Opinion of Covington & Burling LLP.</u>
23.1*	<u>Consent of Deloitte & Touche LLP.</u>
23.2*	<u>Consent of Marcum LLP.</u>
23.3*	<u>Consent of Covington & Burling LLP (contained in Exhibit 5.1).</u>
24.1*	<u>Power of Attorney (included on signature page).</u>
99.1	<u>LanzaTech 2023 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.2 of LanzaTech Global Inc.'s Current Report on Form 8-K, filed with the SEC on February 13, 2023).</u>
99.2	<u>LanzaTech New Zealand Limited 2013 Stock Plan (incorporated by reference to Exhibit 10.31 of AMCI Acquisition Corp. II.'s Registration Statement on S-4/A, filed with the SEC on January 10, 2023).</u>
99.3	<u>LanzaTech New Zealand Limited 2015 Stock Plan (incorporated by reference to Exhibit 10.32 of AMCI Acquisition Corp. II.'s Registration Statement on S-4/A, filed with the SEC on January 10, 2023).</u>
99.4	<u>LanzaTech NZ, Inc. 2019 Stock Plan (incorporated by reference to Exhibit 10.33 of AMCI Acquisition Corp. II.'s Registration Statement on S-4/A, filed with the SEC on January 10, 2023).</u>
107*	<u>Calculation of Filing Fee</u>

* Filed herewith

Item 9. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement; *provided, however*, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement;

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; and

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) That, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, LanzaTech Global, Inc. certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Skokie, State of Illinois, on April 21, 2023.

LANZATECH GLOBAL, INC.

By: /s/ Jennifer Holmgren

Name: Jennifer Holmgren

Title: Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Dr. Jennifer Holmgren, Geoff Trukenbrod and Joseph C. Blasko, and each of them severally, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons, in the capacities indicated on April 21, 2023

<u>Name</u>	<u>Position</u>	<u>Date</u>
<u>/s/ Jennifer Holmgren</u> Jennifer Holmgren	Chief Executive Officer, Chairman of the Board of Directors and Director (<i>Principal Executive Officer</i>)	April 21, 2023
<u>/s/ Geoffrey Trukenbrod</u> Geoffrey Trukenbrod	Chief Financial Officer (<i>Principal Financial Officer</i>)	April 21, 2023
<u>/s/ George Dimitrov</u> George Dimitrov	Senior Vice President, Finance (<i>Principal Accounting Officer</i>)	April 21, 2023
<u>/s/ Barbara Byrne</u> Barbara Byrne	Director	April 21, 2023
<u>/s/ Nigel Gormly</u> Nigel Gormly	Director	April 21, 2023
<u>/s/ Dorri McWhorter</u> Dorri McWhorter	Director	April 21, 2023
<u>/s/ James Messina</u> James Messina	Director	April 21, 2023
<u>/s/ Nimesh Patel</u> Nimesh Patel	Director	April 21, 2023
<u>/s/ Gary Rieschel</u> Gary Rieschel	Director	April 21, 2023

Calculation of Filing Fee Tables

Form S-8
(Form Type)

LanzaTech Global, Inc.
(Exact Name of Registrant as Specified in its Charter)

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price Per Share	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	
Equity	LanzaTech Global, Inc. 2023 Long-Term Incentive Plan	457(c) and 457(h)	21,716,844 ⁽²⁾	\$3.48 ⁽³⁾	\$75,466,033	0.00011020	\$8,317	
Equity	LanzaTech NZ, Inc. 2019 Stock Plan	457(h)	6,522,225 ⁽⁴⁾	\$1.83 ⁽⁵⁾	\$11,935,672	0.00011020	\$1,316	
Equity	LanzaTech New Zealand Limited 2015 Stock Plan	457(h)	7,004,511 ⁽⁶⁾	\$1.45 ⁽⁷⁾	\$10,156,541	0.00011020	\$1,120	
Equity	LanzaTech New Zealand Limited 2013 Stock Plan	457(h)	762,710 ⁽⁸⁾	\$1.60 ⁽⁹⁾	\$1,220,336	0.00011020	\$135	
Total Offering Amounts								\$10,888
Total Fee Offsets								\$0
Net Fee Due								\$10,888

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) Represents shares of common stock, par value \$0.0001 per share (“Common Stock”), of LanzaTech Global, Inc. (“we” or the “Registrant”) reserved for issuance under the LanzaTech Global, Inc. 2023 Long-Term Incentive Plan (the “2023 Plan”). The number of shares of Common Stock reserved and available for issuance under the 2023 Plan will automatically increase on January 1 of each year commencing on January 1, 2024 and ending on and including January 1, 2034, in an amount equal to 3% of the total number of shares of the Registrant’s capital stock outstanding on December 31 of the preceding year, unless the board of directors of the Registrant acts prior to January 1 of a given year to provide that the increase for such year will be a lesser number of shares of Common Stock. Such additional shares have not been included in this Registration Statement and will be registered at such time as each respective increase in shares reserved and available for issuance under the 2023 Plan becomes effective.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) under the Securities Act of 1933, as amended (the “Securities Act”), and based upon the average of the high and low prices of the Common Stock, as reported on the Nasdaq Capital Market under the symbol “LNZA” on April 17, 2023, which was \$3.48 per share.

- (4) Represents shares of Common Stock underlying awards previously granted under the LanzaTech NZ, Inc. 2019 Stock Plan (the "2019 Plan"), as assumed by the Registrant.
- (5) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) under the Securities Act, and based upon a price of \$1.83 per share, which is the weighted-average exercise price for options outstanding under the 2019 Plan.
- (6) Represents shares of Common Stock underlying awards previously granted under the LanzaTech New Zealand Limited 2015 Stock Plan (the "2015 Plan"), as assumed by the Registrant.
- (7) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) under the Securities Act, and based upon a price of \$1.45 per share, which is the weighted-average exercise price for options outstanding under the 2015 Plan.
- (8) Represents shares of Common Stock underlying awards previously granted under the LanzaTech New Zealand Limited 2013 Stock Plan (the "2013 Plan"), as assumed by the Registrant.
- (9) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) under the Securities Act, and based upon a price of \$1.60 per share, which is the weighted-average exercise price for options outstanding under the 2013 Plan.

April 21, 2023

LanzaTech Global, Inc.
8045 Lamont Avenue, Suite 400
Skokie, Illinois 60077

Ladies & Gentlemen:

We have acted as counsel to LanzaTech Global, Inc., a Delaware corporation (the "Company"), in connection with the registration by the Company under the Securities Act of 1933, as amended (the "Act"), of 36,006,290 shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock"), consisting of (i) 21,716,844 shares of Common Stock (the "2023 Plan Shares") issuable under the LanzaTech Global, Inc. 2023 Long-Term Incentive Plan (the "2023 Plan"), (ii) 6,522,225 shares of Common Stock (the "2019 Plan Shares") issuable under the LanzaTech NZ, Inc. 2019 Stock Plan (the "2019 Plan"), (iii) 7,004,511 shares of Common Stock (the "2015 Plan Shares") issuable under the LanzaTech New Zealand Limited 2015 Stock Plan (the "2015 Plan"), and (iv) 762,710 shares of Common Stock (the "2013 Plan Shares" and together with the 2023 Plan Shares, the 2019 Plan Shares, and the 2015 Plan Shares, the "Shares") issuable under the LanzaTech New Zealand Limited 2013 Stock Plan (the "2013 Plan" and together with the 2023 Plan, the 2019 Plan, and the 2015 Plan, the "Plans"), pursuant to the Registration Statement on Form S-8 filed with the Securities and Exchange Commission on the date hereof (such registration statement is referred to herein as the "Registration Statement").

We have reviewed such corporate records, certificates and other documents, and such questions of law, as we have considered necessary or appropriate for the purposes of this opinion. We have assumed that all signatures are genuine, that all documents submitted to us as originals are authentic and that all copies of documents submitted to us conform to the originals.

We have relied as to certain matters on information obtained from public officials, officers of the Company and other sources believed by us to be responsible.

Based upon the foregoing, we are of the opinion that the Shares have been duly authorized and, when issued in accordance with the terms of the relevant Plan, and any individual agreements relating to such Shares, the Shares will be validly issued, fully paid and nonassessable.

We are members of the bar of the District of Columbia. We do not express any opinion herein on any laws other than the General Corporation Law of the State of Delaware and reported judicial decisions interpreting these laws.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act.

Very truly yours,

/s/ Covington & Burling LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 28, 2023, relating to the consolidated financial statements of LanzaTech NZ, Inc. and subsidiaries, appearing in the current report on Form 8-K of LanzaTech Global, Inc. as amended on March 28, 2023.

/s/ Deloitte & Touche LLP

Chicago, Illinois

April 21, 2023

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of LanzaTech Global, Inc. on Form S-8 of our report dated March 28, 2023 with respect to our audits of the consolidated financial statements of AMCI Acquisition Corp. II (now known as LanzaTech Global, Inc.) as of December 31, 2022 and 2021 and for the year ended December 31, 2022 and for the period from January 28, 2021 (inception) through December 31, 2021, appearing in the Annual Report on Form 10-K of AMCI Acquisition Corp. II (now known as LanzaTech Global, Inc.). We were dismissed as auditors on March 28, 2023 and, accordingly, we have not performed any audit or review procedures with respect to any financial statements appearing in the Form S-8 for the periods after the date of our dismissal.

/s/ Marcum LLP

Marcum LLP
New York, NY
April 21, 2023