
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material under §240.14a-12

LANZATECH GLOBAL, INC.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check all boxes that apply):

- No fee required.
 - Fee paid previously with preliminary materials.
 - Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a-6(i)(1) and 0-11
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LanzaTech

[●], 2024

URGENT – IMMEDIATE ACTION REQUESTED

Dear LanzaTech Stockholders,

You are cordially invited to attend the Special Meeting of Stockholders (the “*Special Meeting*”) of LanzaTech Global, Inc. (the “*Company*,” “*we*,” “*us*” or “*our*”), which will be held at 2:00 p.m., Central Time, on October 2, 2024. The Special Meeting will be held entirely online via audio webcast to allow for greater stockholder attendance and to reduce the carbon footprint that is required for travel to, and in-person attendance at, the Special Meeting. The Special Meeting may be accessed at <https://www.cstproxy.com/lanzatech/sm2024>, where you will be able to listen to the Special Meeting live, submit questions and vote. We have designed the virtual Special Meeting to provide stockholders with substantially the same opportunities to participate as if the Special Meeting were held in person.

As we previously disclosed, on August 5, 2024, the Company entered into a Convertible Note Purchase Agreement (the “*Convertible Note Purchase Agreement*”) with an accredited investor (the “*Investor*”), pursuant to which the Company agreed to sell and issue to the Investor and other purchasers in a private placement transaction in one or more closings up to an aggregate principal amount of \$150.0 million of convertible notes (the “*Convertible Notes*”). On August 6, 2024, we issued and sold \$40.15 million of Convertible Notes to the Investor pursuant to the Convertible Note Purchase Agreement.

Under the Convertible Notes, we are obligated to seek approval from our stockholders (i) to increase our authorized shares of common stock by 200,000,000 and (ii) under Rule 5635 of the Nasdaq Listing Rules for the issuance of shares of common stock in connection with settlement of the Convertible Notes. The Convertible Notes contain provisions capping conversion prior to obtaining such stockholder approvals. The Special Meeting is intended to satisfy our obligations under the Convertible Notes and to provide us with greater flexibility to settle conversions of the Convertible Notes using shares of our common stock in amounts in excess of such caps. We are not seeking approval for the issuance of the Convertible Notes or any other specific financing transaction.

As discussed in detail in this proxy statement, our Board of Directors strongly recommends you vote “**FOR**” each of the following proposals:

- Approval of an amendment to the Company’s Certificate of Incorporation to increase the number of authorized shares of common stock from 400,000,000 to 600,000,000 in order to provide a sufficient number of authorized shares for possible future corporate finance, business development, equity compensation and other general corporate purposes, including for use in connection with the settlement of any Convertible Notes.
- Approval, for purposes of Nasdaq Listing Rule 5635(b), of any “change of control” resulting from the issuance of shares of the Company’s common stock in connection with the conversion of the Convertible Notes, which were issued in a private placement. For purposes of Nasdaq Listing Rule 5635(b), a “change of control” is generally deemed to occur if, as a result of an issuance of shares, an investor or group of investors would own, or have the right to acquire, 20% or more of the outstanding shares of common stock or voting power of a company, and such ownership or voting power would have the largest ownership position in the company.
- Approval, for purposes of Nasdaq Listing Rule 5635(d), of the Company’s ability to settle conversions of the Convertible Notes, which were issued in a private placement, using shares of the Company’s common stock in excess of 19.9% of the number of outstanding shares of common stock.
- Approval of one or more adjournments of the Special Meeting to a later date or dates, if necessary or appropriate, to solicit additional proxies if there are insufficient votes to approve the preceding proposals at the time of the Special Meeting, or in the absence of a quorum. This would authorize the Board of Directors to adjourn the Special Meeting to solicit votes on the approval of any or all of the above proposals.

We intend to commence distribution of the proxy statement for the Special Meeting on or about [●], 2024. You are strongly encouraged to carefully review the proxy statement. **Whether or not you plan to attend the Special Meeting, we urge you to vote as soon as possible by authorizing a proxy as described in the enclosed materials to ensure that your shares are represented at this very important Special Meeting.** You may mark, sign, date and mail the proxy card in the postage-paid return envelope provided. If you attend the Special Meeting and wish to change your proxy vote, you may do so by voting electronically prior to or at the Special Meeting.

Every vote is important. Please vote promptly by internet or mail by following the instructions on the proxy card or voting instruction form sent to you.

If you have any questions or need assistance voting your shares, please contact Sodali & Co., which is assisting us, toll free, at (800) 662-5200 (banks and brokers can call collect at (203) 658-9400) or via email at LNZA.info@investor.sodali.com.

We thank you for your continued support of LanzaTech.

Yours sincerely,

/s/ Jennifer Holmgren
Dr. Jennifer Holmgren
CEO and Chair of The LanzaTech Board of Directors

/s/ Jim Messina
Jim Messina
Lead Independent Director

LanzaTech

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

| | |
|--|---|
| Time and Date: | 2:00 p.m., Central Time, on October 2, 2024 |
| Place and Admission: | Online via audio webcast by visiting: https://www.cstproxy.com/lanzatech/sm2024 and entering your 12-digit control number included on your proxy card or on the instructions that accompanied your proxy materials. |
| Items of Business: | <ol style="list-style-type: none">(1) To approve an amendment to our Second Amended and Restated Certificate of Incorporation (our “<i>Certificate of Incorporation</i>”), to increase the number of authorized shares of common stock from 400,000,000 to 600,000,000. We refer to this proposal in the proxy statement as the “<i>Authorized Share Proposal</i>.”(2) To approve any “change of control” under Nasdaq Listing Rule 5635(b) resulting from the issuance of shares of the Company’s common stock in connection with the conversion of the Convertible Notes, which were issued in a private placement. We refer to this proposal in the proxy statement as the “<i>Nasdaq Listing Rule 5635(b) Proposal</i>.”(3) To approve the Company’s ability to settle conversions of the Company’s Convertible Notes, which were issued in a private placement, using shares of the Company’s common stock in excess of 19.9% of the number of outstanding shares of common stock, as required in accordance with Nasdaq Listing Rule 5635(d). We refer to this proposal in the proxy statement as the “<i>Nasdaq Listing Rule 5635(d) Proposal</i>.” We refer to the Nasdaq Listing Rule 5635(b) Proposal and the Nasdaq Listing Rule 5635(d) Proposal together as the “<i>Nasdaq Listing Rule Proposals</i>.”(4) To approve one or more adjournments of the Special Meeting to a later date or dates, if necessary or appropriate, to solicit additional proxies if there are insufficient votes to approve the Authorized Share Proposal or the Nasdaq Listing Rule Proposals at the time of the Special Meeting or in the absence of a quorum. We refer to this proposal in the proxy statement as the “<i>Adjournment Proposal</i>.” |
| Adjournments and Postponements: | Any action on the items of business described above may be considered at the Special Meeting at the time and on the date specified above or at any time and date to which the Special Meeting of Stockholders (the “ <i>Special Meeting</i> ”) may be properly adjourned or postponed. |
| Record Date: | You are entitled to vote only if you were a stockholder of LanzaTech as of the close of business on August 29, 2024. |
| Voting: | YOUR VOTE IS VERY IMPORTANT. Whether or not you plan to attend the Special Meeting, we strongly encourage you to read this proxy statement and submit your proxy or, if applicable, your voting instructions to your broker, trustee or other nominee as soon as possible. |
| Important Notice Regarding the Availability of Proxy Materials for the Special Meeting of Stockholders to be Held on October 2, 2024: | The Notice of Special Meeting and proxy statement for the Special Meeting are available free of charge at https://www.cstproxy.com/lanzatech/sm2024 . |

How to Vote:

Whether you hold shares directly as a stockholder of record or beneficially in street name, you may vote without attending the Special Meeting. You may vote by granting a proxy or, for shares held beneficially in street name, by submitting voting instructions to your broker, trustee or other nominee. In most cases, you will be able to do this by using the Internet or by mail.

By Internet - If you have Internet access, you may vote your shares by logging into the secure website, which will be listed on the proxy card or voting instruction form sent to you, and following the instructions provided.

By Mail - You may submit your proxy by mail by signing your proxy card if your shares are registered or, for shares held beneficially in street name, by following the voting instructions included by your broker, trustee or other nominee, and mailing it in accordance with the instructions provided. If you provide specific voting instructions, your shares will be voted as you have instructed.

Votes submitted via the Internet must be received by 11:59 p.m. Eastern Time on October 1, 2024. Submitting your proxy via the Internet or by mail will not affect your right to vote electronically at the Special Meeting should you later decide to virtually attend the Special Meeting. **Even if you plan to virtually attend the Special Meeting, we encourage you to submit your proxy to vote your shares in advance of the Special Meeting.**

We provide Internet proxy voting with procedures designed to ensure the authenticity and correctness of your proxy vote instructions.

Questions or Assistance?

If you have any questions about the Special Meeting, need additional copies of this proxy statement or need assistance with how to vote or revoke your proxy, you should contact our proxy solicitor, Sodali & Co. (“Sodali”), as follows:

Sodali & Co.
333 Ludlow Street, 5th Floor, South Tower
Stamford, CT 06902
Banks and Brokers may call: (203) 658-9400
Stockholders may call toll free: (800) 662-5200
Email: LNZA.info@investor.sodali.com

By the Order of the Board of Directors

/s/ Joseph Blasko
Joseph Blasko
General Counsel & Corporate Secretary

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LanzaTech

PROXY STATEMENT FOR THE SPECIAL MEETING OF STOCKHOLDERS TO BE HELD ON OCTOBER 2, 2024

Questions and Answers on Voting and the Special Meeting

Q: *Why am I receiving these materials?*

A: The Board of Directors (the “*Board*”) of LanzaTech Global, Inc., a Delaware corporation (the “*Company*,” “*LanzaTech*,” “*we*,” “*us*” or “*our*”), is providing these proxy materials to you in connection with our Special Meeting of Stockholders (the “*Special Meeting*”), which will take place at 2:00 p.m., Central Time, on October 2, 2024. As a stockholder on the Record Date (as defined below), you are invited to attend the Special Meeting and are entitled and requested to vote on the items of business described in this proxy statement. We are first distributing the proxy statement and making it available to stockholders on or about [●], 2024.

In the event that we determine it is not possible or advisable to hold the Special Meeting at the date, time and/or location disclosed in this proxy statement, we will announce alternative arrangements for the meeting in a press release. Our press releases can be accessed on our corporate website free of charge at www.lanzatech.com, under the “News” and then “Recent News” captions. We will also post any updated information on our website under the “Investor Relations” and then “News and Events” captions. If you plan to attend the Special Meeting, please check for our disclosure of this information prior to the currently-scheduled time and date for the Special Meeting.

Q: *Why is the Company holding the Special Meeting?*

A: As we previously disclosed, on August 5, 2024, we entered into a Convertible Note Purchase Agreement (the “*Convertible Note Purchase Agreement*”) with an accredited investor (the “*Investor*”) pursuant to which the Company agreed to sell and issue to the Investor and other purchasers in a private placement transaction in one or more closings up to an aggregate principal amount of \$150.0 million of convertible notes (the “*Convertible Notes*”). On August 6, 2024, we issued and sold \$40.15 million of Convertible Notes to the Investor pursuant to the Convertible Note Purchase Agreement.

We are not seeking approval for the private placement relating to the Convertible Notes or for the issuance of the Convertible Notes. Under the Convertible Notes, we are obligated to seek approval from our stockholders (i) to increase our authorized shares of common stock by 200,000,000 and (ii) under Rule 5635 of the Nasdaq Listing Rules, for the issuance of shares of common stock in connection with settlement of the Convertible Notes. The Convertible Notes contain provisions capping conversion prior to obtaining such stockholder approvals. The Special Meeting is intended to satisfy our obligations under the Convertible Notes and to provide us with greater flexibility to settle conversions of the Convertible Notes using shares of our common stock in amounts in excess of such caps.

Q: *What information is contained in this proxy statement?*

A: The information included in this proxy statement relates to the timing and conduct of the Special Meeting, the proposals to be voted on at the Special Meeting, the voting process and certain other required information.

Q: *What items of business will be voted on at the Special Meeting?*

A: The items of business at the Special Meeting are:

- to vote on the Authorized Share Proposal;
 - to vote on the Nasdaq Listing Rule 5635(b) Proposal;
 - to vote on the Nasdaq Listing Rule 5635(d) Proposal; and
 - to vote on the Adjournment Proposal, if necessary or appropriate.
-

Q: *How does the Board recommend that I vote?*

A: Our Board unanimously recommends that you:

- Vote your shares “FOR” approval of the Authorized Share Proposal.
- Vote your shares “FOR” approval of the Nasdaq Listing Rule 5635(b) Proposal.
- Vote your shares “FOR” approval of the Nasdaq Listing Rule 5635(d) Proposal.
- Vote your shares “FOR” the Adjournment Proposal.

Q: *Who is entitled to vote at the Special Meeting?*

A: Only stockholders of record at the close of business on August 29, 2024 are entitled to vote at the Special Meeting. We refer to this date as our “Record Date.”

You may vote all shares of LanzaTech common stock you own as of the Record Date, including (i) shares that are held directly in your name as the stockholder of record, and (ii) shares held for you as the beneficial owner through a broker, trustee or other nominee, such as a bank.

On the Record Date, we had 197,782,055 shares of common stock issued and outstanding.

Q: *What are the voting rights of the Company’s holders of common stock? Do stockholders have dissenters’ or appraisal rights?*

A: Each outstanding share of the Company’s common stock owned as of the Record Date will be entitled to one vote on each matter considered at the meeting.

Our stockholders are not entitled to dissenters’ or appraisal rights under the Delaware General Corporation Law with respect to any of the proposals being voted on at the Special Meeting.

Q: *What is the difference between holding shares as a stockholder of record and holding shares as a beneficial owner?*

A: We have summarized below some of the distinctions between being a stockholder of record and being a beneficial owner:

Stockholder of Record

If your shares are registered directly in your name, or as a joint holder, with our transfer agent, Continental Stock Transfer & Trust Company (“CST”), you are considered the stockholder of record with respect to those shares and written proxy materials are being sent to you directly by LanzaTech. As a stockholder of record, you have the right to grant your proxy directly to us or to vote in person, including by means of remote communication, at the Special Meeting.

Beneficial Owner

If your shares are held in a brokerage account or by a trustee or another nominee, such shares are considered to be held in “street name” and you are considered the beneficial owner of such shares. If you are the beneficial owner of shares of our common stock, this proxy statement, together with a voting instruction form, is being forwarded to you by your broker, trustee or other nominee. As a beneficial owner, you have the right to direct your broker, trustee or other nominee how to vote and are also invited to attend the Special Meeting as described in the next question. **Absent instructions from you, your broker, trustee or other nominee will not be able to vote your shares. Accordingly, it is extremely important that you provide your voting instructions to your broker, trustee or other nominee as soon as possible to ensure that your vote is timely submitted and counted.**

Since a beneficial owner is not the stockholder of record, you may not vote these shares in person, including by means of remote communication, at the meeting unless you obtain a “legal proxy” from the broker, trustee or other nominee that holds your shares, giving you the right to vote the shares at the Special Meeting. Your broker, trustee or other nominee is responsible for providing voting instructions for you to use in directing the broker, trustee or other nominee how to vote your shares.

Q: *How can I attend and vote my shares at the Special Meeting?*

A: The Special Meeting will be held entirely online live via audio webcast. We have designed the virtual Special Meeting to provide stockholders with substantially the same opportunities to participate as if the Special Meeting were held in person. Any stockholder can attend the Special Meeting live online at <https://www.cstproxy.com/lanzatech/sm2024>. If your shares are registered directly in your name with our transfer agent, CST, you are considered, with respect to those shares, the stockholder of record. If you were a stockholder as of the record date for the Special Meeting and you have your 12-digit control number included on your proxy card or on the instructions that accompanied your proxy materials, you can vote at the Special Meeting.

A summary of the information you need to attend the Special Meeting online is provided below:

- To attend and participate in the Special Meeting, you will need the 12-digit control number included on your proxy card or on the instructions that accompanied your proxy materials.
- The Special Meeting webcast will begin promptly at 2:00 p.m., Central Time. We encourage you to access the Special Meeting at least 15 minutes prior to the start time.
- The virtual meeting platform is fully supported across browsers (Edge, Chrome, and Safari) and devices (desktops, laptops, tablets, and cell phones) running the most updated version of applicable software and plugins. Participants should ensure that they have a strong Internet connection wherever they intend to participate in the Special Meeting. Participants should also give themselves at least 15 minutes to log in and ensure that they can hear streaming audio prior to the start of the Special Meeting.
- Instructions on how to attend and participate via the Internet are posted at <https://www.cstproxy.com/lanzatech/sm2024>.
- Assistance with questions regarding how to attend and participate via the Internet will be provided via CST's telephone support number at (917) 262-2373.
- If you want to submit a question during the Special Meeting, log into the virtual meeting platform at <https://www.cstproxy.com/lanzatech/sm2024> and follow the instructions for submitting a question.
- Questions pertinent to Special Meeting matters may be answered during the Special Meeting or after the Special Meeting by direct communication with the stockholder. Questions regarding personal or other improper matters, including those related to employment, product or service issues, or suggestions for business opportunities, are not pertinent to Special Meeting matters and therefore will not be answered.
- If your shares are held in an account at a broker, trustee or other nominee, you are considered the beneficial owner of shares held in "street name." If your shares are held in "street name," you should contact your broker, trustee or other nominee to obtain a legal proxy and e-mail a copy (a legible PDF or other photographic copy is sufficient) to proxy@continentalstock.com. CST will issue a control number and email it back with the meeting information. Only stockholders with a valid 12-digit control number, will be able to attend the Special Meeting and vote, ask questions, and access the list of stockholders as of the close of business on the Record Date.

Q: *How can I vote my shares without attending the Special Meeting?*

A: Whether you hold shares directly as a stockholder of record or beneficially in street name, you may vote without attending the Special Meeting. You may vote by granting a proxy or, for shares held beneficially in street name, by submitting voting instructions to your broker, trustee or other nominee. In most cases, you will be able to do this by using the Internet or by mail.

By Internet - If you have Internet access, you may vote your shares by logging into the secure website, which will be listed on the proxy card or voting instruction form sent to you, and following the instructions provided.

By Mail - You may submit your proxy by mail by signing your proxy card if your shares are registered or, for shares held beneficially in street name, by following the voting instructions included by your broker, trustee or other nominee, and mailing it in accordance with the instructions provided. If you provide specific voting instructions, your shares will be voted as you have instructed.

Votes submitted via the Internet must be received by 11:59 p.m. Eastern Time on October 1, 2024. Submitting your proxy via the Internet or by mail will not affect your right to vote electronically at the Special Meeting should you later decide to virtually attend the Special Meeting. **Even if you plan to virtually attend the Special Meeting, we encourage you to submit your proxy to vote your shares in advance of the Special Meeting.**

We provide Internet proxy voting with procedures designed to ensure the authenticity and correctness of your proxy vote instructions.

Q: *Who can help answer my questions?*

A: If you have any questions about the Special Meeting, need additional copies of proxy materials or need assistance on how to vote or revoke your proxy, you should contact our proxy solicitor, Sodali, as follows:

Sodali & Co.
333 Ludlow Street, 5th Floor, South Tower
Stamford, CT 06902
Banks and Brokers may call: (203) 658-9400
Stockholders may call toll free: (800) 662-5200
Email: LNZA.info@investor.sodali.com

Q: *How can I revoke my proxy and change my vote after I return my proxy card?*

A: You may revoke your proxy and change your vote before the final vote at the Special Meeting. If you are a stockholder of record you may do this: (i) by voting using the Internet, which must be completed by 11:59 p.m. Eastern Time on October 1, 2024 (your latest Internet proxy will be counted) or (ii) by virtually attending the Special Meeting and voting electronically. Virtually attending the Special Meeting alone will not revoke your proxy unless you specifically request your proxy to be revoked. If you hold shares through a broker, trustee or other nominee, you must contact that broker, trustee or other nominee directly to revoke any prior voting instructions.

Q: *How many shares must be present or represented to conduct business at the Special Meeting?*

A: The quorum requirement for holding the Special Meeting and transacting business is that holders of a majority of shares of LanzaTech common stock entitled to vote must be present, including by means of remote communication, or represented by proxy at the Special Meeting. Abstentions are counted for the purpose of determining the presence of a quorum.

Q: *What if a quorum is not present at the Special Meeting?*

A: If a quorum is not present or represented at the Special Meeting, the Chair of the Special Meeting may adjourn the Special Meeting until a quorum is present or represented. The time and place of the adjourned meeting will be announced at the time the adjournment is taken and no other notice will be given, unless the adjournment is for 30 or more days from the date of the original meeting or a new record date is set for the adjourned meeting.

Q: *What vote is required to approve each of the proposals and how are votes counted?*

A: You will have the opportunity to vote or provide voting instructions “FOR” or “AGAINST” each proposal, or you can mark your proxy or voting instruction form to “ABSTAIN” from the vote on a proposal. **It is important that you vote your shares to ensure that your voice is heard at the Special Meeting.**

The affirmative vote of a majority of the shares issued, outstanding and entitled to vote on the Authorized Share Proposal is required for approval of the Authorized Share Proposal. Abstentions, broker non-votes and shares that are not voted will have the same effect as a vote “AGAINST” the Authorized Share Proposal.

The affirmative vote of a majority of the votes cast is required for each of the Nasdaq Listing Rule Proposals. Abstentions and broker non-votes are not considered votes cast and will have no effect on the vote for either Nasdaq Listing Rule Proposal.

The affirmative vote of a majority of the shares of common stock present, including by means of remote communication, or represented by proxy and entitled to vote on the Adjournment Proposal is required for approval of the Adjournment Proposal. Abstentions will have the same effect as a vote “AGAINST” the Adjournment Proposal. Broker non-votes will have no effect on the vote for the Adjournment Proposal.

If you provide specific instructions with regard to certain items, your shares will be voted as you instruct on such items. If no instructions are specified, your shares will be voted in accordance with the recommendations of the Board as described above under “*How does the Board recommend that I vote?*” with respect to each of the proposals.

Q: *If my shares are held in “street name” by my broker, trustee or other nominee, will my broker, trustee or other nominee automatically vote those shares for me?*

A: No. Under New York Stock Exchange rules, brokers have the discretion to vote on matters that the New York Stock Exchange considers to be “routine,” but not on matters that it considers to be “non-routine.” The New York Stock Exchange has confirmed to us that all of the proposals for consideration at the Special Meeting are considered “non-routine” and, therefore, brokers, trustees and other nominees are not permitted to vote on any of the proposals unless they have received instructions from the beneficial owners. Accordingly, any shares that a holding broker, trustee or other nominee does not receive voting instructions for will not be voted and will not be treated as present at the Special Meeting for purposes of a quorum. This will have the same effect as a vote “AGAINST” the Authorized Share Proposal and no effect on any of the other proposals. **Therefore, it is extremely important that you provide your voting instructions to your broker, trustee or other nominee as soon as possible to ensure that your vote is timely submitted and counted.**

If you hold your shares in street name, it is critical that you provide voting instructions to your broker, trustee or other nominee for each proposal. We strongly encourage you to provide voting instructions to the organization that holds your shares in order to ensure that your voice is heard at the Special Meeting. Your participation and support is critical to the future of the Company and your investment.

A “broker non-vote” occurs when a broker, trustee or other nominee submits a proxy that states that such broker, trustee or other nominee does not vote for a proposal because the broker, trustee or other nominee has not received instructions from the beneficial owners on how to vote on such proposal and does not have discretionary authority to vote in the absence of instructions. Because all of the matters are non-routine, we anticipate that uninstructed brokers, trustees and other nominees will not submit a proxy or vote and, therefore, no “broker non-votes” will occur.

Q: *Can additional matters be presented at the Special Meeting?*

A: No. Pursuant to our Bylaws, business transacted at the Special Meeting is limited to the matters relating to the purposes stated in the Notice of Special Meeting.

Q: *Who will serve as inspector of elections?*

A: CST will tabulate votes and a representative of CST will act as inspector of elections.

Q: *What does it mean if I receive more than one set of written proxy materials?*

A: If you receive more than one set of written proxy materials, it means your shares are not all registered or held in the same way and are in more than one account. For example, some of your shares may be registered in your name and others may be registered jointly with a spouse. In order to ensure that you vote all of the shares that you are entitled to vote, you should authorize a proxy to vote all proxy cards to which you are provided access. Similarly, for all shares you hold in street name, you should follow the voting instructions provided by each broker, trustee or other nominee for the shares held on your behalf by that broker, trustee or other nominee.

Q: *Who will bear the cost of soliciting votes for the Special Meeting?*

A: We are making this solicitation and will pay the entire cost of preparing, assembling, printing, mailing and distributing these proxy materials and soliciting votes. In addition to the mailing of these proxy materials, the solicitation of proxies or votes may be made in person, by telephone or by electronic communication by our directors, officers, and employees. These individuals will not receive any additional compensation for such solicitation activities.

In addition, we have engaged Sodali to aid in the solicitation of proxies. We have agreed to pay Sodali a fee of \$12,500 as compensation for its services. We will also reimburse Sodali for its reasonable and documented costs and expenses. Upon request, we will also reimburse brokerage houses and other custodians, trustees, nominees and fiduciaries for forwarding proxy materials to stockholders.

Q: *Where can I find the voting results of the Special Meeting?*

A: We intend to announce preliminary voting results at the Special Meeting, and after the meeting we will publish final results in a Current Report on Form 8-K to be filed with the Securities and Exchange Commission, within four business days following the conclusion of the Special Meeting.

Q: *What happens if I do not vote?*

A: If you are a stockholder of record and do not vote at the meeting, or by proxy by accessing <https://www.cstproxy.com/lanzatech/sm2024> or do not complete and return your proxy card by mail, your shares will not be voted.

Because all of the proposals are considered to be non-routine by the New York Stock Exchange, if you are a beneficial owner and do not instruct your broker, trustee, or other nominee how to vote your shares, your shares will not be voted. See *“If my shares are held in ‘street name’ by my broker, trustee or other nominee, will my broker, trustee or other nominee automatically vote those shares for me?”* above.

Q: *What if I return my proxy card or otherwise vote but do not make specific choices?*

A: If you return a signed and dated proxy card or otherwise vote without marking voting selections, your shares will be voted, as applicable, “FOR” the Authorized Share Proposal, “FOR” the Nasdaq Listing Rule 5635(b) Proposal, “FOR” the Nasdaq Listing Rule 5635(d) Proposal and “FOR” the Adjournment Proposal.

Q: *What is the effect of the proposals on our stockholders?*

A: If stockholders approve the proposals in this proxy statement, the economic and voting interests of each of our existing stockholders will be diluted, to the extent additional authorized shares are issued, including upon conversion of the Convertible Notes. Although the number of shares of our common stock that existing stockholders own will not decrease, the shares of our common stock owned by our existing stockholders will represent a smaller percentage of our total outstanding shares of our common stock following any such issuance.

Q: *What happens if the proposals are not adopted by our stockholders?*

A: If our stockholders do not approve the Authorized Share Proposal and the Nasdaq Listing Proposals, the Convertible Notes require us to convene additional stockholders’ meetings every 90 days until they are approved. We incur substantial legal and administrative costs in connection with each stockholders’ meeting.

In addition, holders may convert the Convertible Notes into shares of our common stock at their option or when certain specified events occur. However, until the Authorized Share Proposal and the Nasdaq Listing Proposals are approved by our stockholders, the Convertible Notes limit the number of shares that we can issue to satisfy conversions. Any amounts outstanding under a Convertible Note that we are unable to convert as a result of this limitation will remain outstanding until maturity, at which point we will be required to repay the outstanding amounts in cash. Interest on the Convertible Notes accrues and is added to the outstanding principal amount unless we elect otherwise, which may further increase the amount we owe at maturity.

If we cannot convert the outstanding Convertible Notes into shares of our common stock and are obligated to repay the Convertible Notes using our available cash at maturity, we will have less cash to invest in and grow our business. The use of cash to repay the Convertible Notes at maturity also may have an adverse effect on our overall liquidity and financial condition.

For additional information on the Convertible Notes issuance and terms, please see *“Proposal One: The Authorized Share Proposal—Background Regarding the Convertible Notes.”*

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This proxy statement includes forward-looking statements regarding, among other things, the plans, strategies and prospects, both business and financial, of LanzaTech. These statements are based on the beliefs and assumptions of LanzaTech's management. Although LanzaTech believes that its plans, intentions and expectations reflected in or suggested by these forward-looking statements are reasonable, LanzaTech cannot assure you that it will achieve or realize these plans, intentions or expectations. Forward-looking statements are inherently subject to risks, uncertainties and assumptions. Generally, statements that are not historical facts, including statements concerning possible or assumed future actions, business strategies, events or results of operations, are forward-looking statements. These statements may be preceded by, followed by or include the words "believes," "estimates," "expects," "projects," "forecasts," "may," "will," "should," "seeks," "plans," "scheduled," "anticipates," "intends" or similar expressions. The forward-looking statements are based on projections prepared by, and are the responsibility of, LanzaTech's management. These forward-looking statements are not guarantees of future performance, conditions or results, and involve a number of known and unknown risks, uncertainties, assumptions and other important factors, many of which are outside LanzaTech's control, that could cause actual results or outcomes to differ materially from those discussed in the forward-looking statements. LanzaTech may be adversely affected by other economic, business, or competitive factors, and other risks and uncertainties, including market conditions and the satisfaction of closing conditions with respect to the private placement of our Convertible Notes, as well as those described under the header "Risk Factors" in its Annual Report on Form 10-K for the year ended December 31, 2023 filed by LanzaTech with the SEC, its subsequent Quarterly Reports on Form 10-Q, its Current Reports on Form 8-K and in future filings with the U.S. Securities and Exchange Commission (the "SEC"). New risk factors that may affect actual results or outcomes emerge from time to time and it is not possible to predict all such risk factors, nor can LanzaTech assess the impact of all such risk factors on its business, or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. Forward-looking statements are not guarantees of performance. You should not put undue reliance on these statements, which speak only as of the date hereof. All forward-looking statements attributable to LanzaTech or persons acting on its behalf are expressly qualified in their entirety by the foregoing cautionary statements. LanzaTech undertakes no obligations to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

PROPOSAL ONE:

THE AUTHORIZED SHARE PROPOSAL

Overview

Our Board has unanimously approved and recommends that our stockholders approve an amendment to our Certificate of Incorporation to increase the number of authorized shares of our common stock from 400,000,000 to 600,000,000, representing an increase of 50%. If approved by our stockholders, the Authorized Share Proposal would be effected by the filing of a Certificate of Amendment to our Certificate of Incorporation (the “*Authorized Share Amendment*”) with the Delaware Secretary of State. Under the Convertible Notes, we are obligated to seek approval from our stockholders for this increase in the number of authorized shares of common stock. In addition, we believe this increase is needed to prudently manage our business affairs and provide flexibility for corporate action in the future. The Authorized Share Amendment would not affect the number of authorized shares of preferred stock, which will remain the same at 20,000,000.

The increase in the number of authorized shares of common stock would provide us with important flexibility to use shares of common stock for the following purposes:

- Corporate finance, including but not limited to issuing common stock in connection with conversions of the Convertible Notes,
- Business development,
- Equity compensation, or
- Other general corporate actions,

in each case, without the delay and expense associated with holding a special meeting of our stockholders to obtain stockholder approval each time such an opportunity or need arises. If we were to delay seeking stockholder approval of an authorized share increase until such time, the resulting delay and expense of obtaining stockholder approval could impair our ability to meet our objectives and have an adverse effect on the potential transaction, our results of operations and liquidity.

If our stockholders approve this Authorized Share Proposal, we will amend and restate the first sentence of Section 4.1 of our Certificate of Incorporation to read as follows:

“The total number of shares of all classes of capital stock, each with a par value of \$0.0001 per share, which the Corporation is authorized to issue is 620,000,000 shares, consisting of (a) 600,000,000 shares of common stock (the “*Common Stock*”) and (b) 20,000,000 shares of preferred stock (the “*Preferred Stock*”).”

This proposal describes the material terms of the proposed amendment to our Certificate of Incorporation and is qualified in its entirety by reference to the complete text of the form of Authorized Share Amendment, which is attached as [Appendix A](#) to this proxy statement and incorporated herein by reference. You are strongly encouraged to read the actual text of the Authorized Share Amendment. The proposed Authorized Share Amendment is subject to revision for such changes as may be required by the Delaware Secretary of State and any other changes consistent with this proposal that we may deem necessary or appropriate.

Issued Common Stock and Available Reserves

Our Certificate of Incorporation authorizes us to issue up to 400,000,000 shares of our common stock. As of the Record Date, we had 197,782,055 shares of common stock that were issued and outstanding, no shares that were held by us as treasury shares and 198,735,965 shares that were reserved for future issuance. Shares of common stock reserved for future issuance as of that date included:

- 21,723,306 reserved for issuance in connection with warrants, options and other convertible securities convertible into or exercisable for shares of common stock, as further described in the Company’s registration statement on Form S-3 (File No. 333-279239) filed with the Commission on May 9, 2024;
- 33,149,403 reserved for issuance in connection with the LanzaTech Global, Inc. 2023 Long-Term Incentive Plan;
- 6,177,723 reserved for issuance in connection with the LanzaTech NZ, Inc. 2019 Stock Plan;
- 6,520,750 reserved for issuance in connection with the LanzaTech New Zealand Limited 2015 Stock Plan;
- 10,936 reserved for issuance in connection with the LanzaTech New Zealand Limited 2013 Stock Plan;
- 96,153,847 reserved for issuance in connection with the conversion of the Convertible Notes; and
- 35,000,000 reserved for issuance in connection with the Company’s “at-the-market” offering program with B. Riley Securities, Inc.

As a result, as of such date, we had 3,481,890 shares of common stock, or 0.87% of our total authorized shares, available for future issuance that were not reserved for other purposes. **The Board believes this amount is insufficient given the Company's future financing requirements and other potential future corporate actions, none of which are currently identified.**

Following the filing of the Authorized Share Amendment, the Convertible Note Purchase Agreement obligates us to reserve the maximum number of shares of common stock issuable upon conversion of the Convertible Notes. Assuming, among other items, we issue the full amount of the Convertible Notes contemplated by the Convertible Notes Purchase Agreement and we do not pay any interest owed under the Convertible Notes in cash (the "Conversion Assumptions"), we currently believe that number is approximately 141.3 million shares.

Background Regarding the Convertible Notes

On August 5, 2024, the Company entered into the Convertible Note Purchase Agreement with the Investor pursuant to which the Company agreed to sell and issue to the Investor and other purchasers in a private placement in one or more closings up to an aggregate principal amount of \$150.0 million of Convertible Notes. On August 6, 2024, we issued and sold \$40.15 million of Convertible Notes to the Investor pursuant to the Convertible Note Purchase Agreement.

The Convertible Notes bear interest at a fixed rate of 8.00% per annum, which interest will be added to the outstanding principal amount of the Convertible Notes on the last day of the applicable interest period, unless the Company elects to pay all interest for such period in cash.

The Convertible Notes will mature on August 6, 2029 (the "Maturity Date"), unless earlier redeemed or converted. The Convertible Notes are subject to mandatory conversion into shares of the Company's common stock upon the completion by the Company of an equity financing prior to the Maturity Date that results in the Company receiving minimum gross proceeds in an amount that is equal to the greater of (i) \$40.0 million and (ii) 50% of the total principal amount under the outstanding Convertible Notes immediately following the final closing under the Convertible Note Purchase Agreement (a "Qualified Equity Financing") at a conversion price equal to the lower of (a) the lowest per-share selling price per share in the Qualified Equity Financing, less a 10% discount and (b) the Valuation Cap (as defined below). The Convertible Notes are convertible at the option of the holders upon the completion by the Company of an equity financing prior to the Maturity Date that does not meet the definition of a Qualified Equity Financing (a "Non-Qualified Equity Financing") at a conversion price equal to the lower of (i) the lowest per-share selling price in the Non-Qualified Equity Financing and (ii) the Valuation Cap. The Convertible Notes are also convertible at the option of the holders any time prior to the Maturity Date at a conversion price equal to the Valuation Cap.

The "Valuation Cap" is defined as, (i) with respect to any conversion of a Convertible Note issued at the initial closing under the Convertible Note Purchase Agreement, the price per share of \$1.52 (which, in the event that the Company has not, within 60 days of the initial closing under the Convertible Note Purchase Agreement, issued Convertible Notes having an aggregate principal amount of at least \$80.0 million, will be adjusted to \$1.25 per share), and (ii) with respect to a Convertible Note issued at any closing subsequent to the initial closing under the Convertible Note Purchase Agreement, the price per share equal to the greater of (a) \$1.56 and (b) the closing price per share of the Company's common stock on the date prior to such closing. The Valuation Cap is subject to adjustment based on the Company's holdings in LanzaJet, Inc., and the conversion price in all cases is subject to adjustment for stock splits, reclassifications, redesignations, subdivisions, recapitalizations, and dividends.

The Convertible Notes contain provisions that preclude conversion if such conversion would result in the issuance of more than 19.9% of the Company's currently outstanding common stock in the aggregate or in a change of control under Nasdaq Listing Rules, prior to obtaining stockholder approval on the Nasdaq Listing Proposals. Prior to such stockholder approval, a holder may not convert its Convertible Note if the holder, together with its affiliates, would beneficially own more than 19.9% of the number of shares of the Company's outstanding common stock immediately after giving effect to such exercise. In addition, prior to such stockholder approval, the Company cannot issue more than 39,553,013 shares of common stock, in the aggregate, upon conversion of any Convertible Notes (the "Nasdaq Cap").

Following stockholder approval of the Nasdaq Listing Rules, but until the Authorized Share Proposal is implemented, the Company cannot issue more than 99,652,815 shares of common stock, in the aggregate, upon conversion of any Convertible Notes (the "Authorized Share Cap").

The Company has agreed to use its reasonable best efforts to obtain stockholder approval of the Authorized Share Proposal and the Nasdaq Listing Proposals at a special meeting of its stockholders, to be held no later than 60 days following the date of the initial closing under the Convertible Note Purchase Agreement, subject to certain exceptions. If the Company does not obtain approval at that special meeting, it is required to convene a stockholder meeting every 90 days thereafter until all such proposals are adopted.

The Convertible Notes may not be prepaid or redeemed by the Company, either in whole or in part, without the consent of the holders of the Convertible Notes representing a majority of the principal amount of all of the Convertible Notes then outstanding (the “*Requisite Holders*”), provided that the Company may redeem and prepay all then-outstanding Convertible Notes without such consent of the Requisite Holders (i) until August 6, 2025, in an amount equal to one and one half times the redeemed principal amount on the Convertible Notes; (ii) between August 7, 2025 and August 6, 2027, in an amount equal to two times the redeemed principal amount; and (iii) after August 6, 2027, in an amount equal to three times the redeemed principal amount; in all such cases, any and all accrued and unpaid interest on the Convertible Notes will be deemed to have been repaid in connection with the redemption.

Reasons for the Proposal

Our Board is recommending the increase in the number of authorized shares of our common stock because we lack sufficient shares for corporate finance (including satisfaction of our obligations under the Convertible Notes and the issuance of shares of common stock upon their conversion), business development, equity compensation and other general corporate purposes. The Authorized Share Amendment accordingly reflects an aggregate increase of 200,000,000 shares of our authorized common stock for these combined purposes, which are further described below. Furthermore, under the terms of the Convertible Notes, we are obligated to seek approval from our stockholders of the Authorized Share Amendment.

We and our Board believe that it is advisable and in our and our stockholders’ best interests, and critical to our long-term success, to increase the number of authorized shares of our common stock. If approved, the Authorized Share Amendment will authorize additional shares of our common stock that we believe are needed to prudently manage our business affairs and provide flexibility for corporate action in the future. The availability of additional shares of common stock would permit us to undertake certain future corporate finance, business development, equity compensation and other general corporate purposes.

Use of Shares for Corporate Finance Purposes

The Authorized Share Amendment is necessary for future corporate liquidity, including the ability to issue equity or equity-linked securities in financing transactions, including pursuant to the Convertible Notes. Under the Convertible Notes, we are obligated to seek approval from our stockholders of the Authorized Share Amendment. We are obligated to reserve a portion of the newly authorized shares for issuance upon conversion of the Convertible Notes.

We have issued \$40.15 million in aggregate principal amount of Convertible Notes. The Convertible Notes Purchase Agreement allows for the issuance of up to \$150.0 million in aggregate principal amount. Interest accruing on the Convertible Notes is added to the outstanding principal amount of the Convertible Notes, unless we elect to pay such interest in cash. Accordingly, assuming issuance of all of the Convertible Notes, and that no interest on the Convertible Notes is paid in cash, the aggregate principal amount outstanding under the Convertible Notes could exceed \$220 million by maturity.

Until the Authorized Share Amendment is effective, the Authorized Share Cap is applicable to the Convertible Notes. As a result, if and when there are conversions, our ability to satisfy them is limited up to the amount of the Authorized Share Cap. The Authorized Share Cap is approximately 99.7 million shares of common stock, which is lower than the number of shares that we believe we need to reserve for potential conversions of the Convertible Notes, after giving effect to certain assumptions, including the Conversion Assumptions. To the extent we are unable to satisfy a conversion in full, the unconverted amounts will remain outstanding.

We and our Board believe it is therefore advisable and in our and our stockholders’ best interests, and critical to our long-term success, for our stockholders to approve this proposal. So long as our ability to satisfy conversions remains capped, we may be unable to satisfy conversions in full, resulting in more principal remaining outstanding and therefore more cash required to repay the Convertible Notes upon maturity. If we cannot convert the outstanding Convertible Notes into shares of our common stock and are obligated to repay the Convertible Notes using our available cash at maturity, we will have less cash to invest in and grow our business. The use of cash to repay the Convertible Notes at maturity also may have an adverse effect on our overall liquidity and financial condition.

Furthermore, at maturity, we may not have enough available cash, our ability to use cash could be restricted by law, regulation or other agreements governing future indebtedness, and we may not be able to obtain additional financing on commercially reasonable terms, or at all. Our inability to repay the Convertible Notes when they mature would be a default under the Convertible Note Purchase Agreement and potentially cause a cross-default under other agreements and instruments, leading to the exercise of applicable remedies against us and further straining our liquidity.

Use of Shares for Business Development

If the Authorized Share Amendment is not approved by our stockholders, we would not have sufficient shares to pursue potential partnering transactions, mergers or acquisitions or financing or other transactions for which equity or equity-linked securities could be used as consideration. We intend to be opportunistic in pursuing transactions that will enable us to grow and improve our financial results, and the potential need to obtain stockholder approval to facilitate such a transaction could delay or prevent our ability to proceed in a particular situation.

Use of Shares for Equity Compensation

If approved, the Authorized Share Amendment will authorize additional shares of common stock that we may potentially use for future grants under our existing or future equity compensation programs. Equity awards, as part of an overall compensation package, are important to attracting, retaining, and motivating qualified employees. Equity compensation is a key component of our compensation philosophy and provides our executive officers and other employees with compensation that has a strong link to our long-term performance, creates an ownership culture, generally aligns the interests of our employees with the interests of our stockholders, and allows us to assemble competitive compensation packages while preserving cash. If the Authorized Share Amendment is not approved it may limit our ability to make equity awards to current and future employees, which may adversely affect our business prospects.

Use of Shares for General Corporate Purposes

If approved, we may also use the increase in the number of authorized shares for a variety of other corporate purposes as the Board deems appropriate. Approval of the Authorized Share Amendment would provide us with greater flexibility to consider and respond to future opportunities and needs as they arise.

Potential Effects of the Authorized Share Amendment

The additional shares of common stock proposed to be authorized under the Authorized Share Proposal would have rights identical to our currently outstanding shares of common stock. Stockholders will have no subscription, preferential or preemptive rights with respect to additional shares of common stock proposed to be authorized for issuance, nor will they have cumulative voting rights. Accordingly, any future issuance of common stock may dilute such stockholders' holdings of common stock as a percentage of shares outstanding to the extent stockholders do not otherwise maintain their percentage interest. Further, if current stockholders of the Company do not purchase shares to maintain their respective percentage interests, their voting power will be diluted.

Also, the proposed Authorized Share Amendment could, under certain circumstances, have an anti-takeover effect, although that is not our or our Board's intention with this proposal. For example, in the event of a hostile attempt to take control of the Company, it may be possible for us to impede the attempt by issuing shares of our common stock, which would dilute the voting power of the other outstanding shares and increase the potential cost to acquire control of the Company. The proposed Authorized Share Amendment therefore may have the effect of discouraging unsolicited takeover attempts, potentially limiting the opportunity for our stockholders to dispose of their shares at a premium, which is often offered in takeover attempts, or that may be available under a merger proposal. However, this proposal has been presented with the intention that it be utilized for the corporate finance, business development, equity compensation and general corporate considerations described above and not as an anti-takeover mechanism.

Effectiveness of the Authorized Share Amendment

If the proposed Authorized Share Amendment is approved and adopted by the stockholders at the Special Meeting, it will become effective upon the filing of the Authorized Share Amendment with the Delaware Secretary of State. We expect to file the Authorized Share Amendment promptly following the conclusion of the Special Meeting.

Required Vote

The affirmative vote of a majority of the shares issued, outstanding and entitled to vote on the Authorized Share Proposal is required for approval of the Authorized Share Proposal. Abstentions, broker non-votes and shares that are not voted will have the same effect as a vote "AGAINST" the Authorized Share Proposal.

Recommendation of the Board of Directors

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| THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE "FOR" THE AUTHORIZED SHARE PROPOSAL (PROPOSAL ONE) |
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PROPOSAL TWO:

THE NASDAQ LISTING RULE 5635(B) PROPOSAL

Overview

We are asking that our stockholders approve the issuance of shares of common stock in connection with settlement of the Convertible Notes in excess of 19.9% of our outstanding shares of common stock, which may be deemed a “change of control” under Nasdaq Listing Rule 5635(b).

Nasdaq Listing Rule 5635(b)

As a result of being listed for trading on the Nasdaq Stock Market, issuances of our common stock are subject to the Nasdaq Listing Rules, including Nasdaq Listing Rule 5635(b). Nasdaq Listing Rule 5635(b) requires that the Company obtain stockholder approval prior to the issuance of securities when the issuance or potential issuance will result in a change of control of the Company. For purposes of Nasdaq Listing Rule 5635(b), a change of control is generally deemed to occur if, as a result of an issuance of shares, an investor or group of investors would own, or have the right to acquire 20% or more of the outstanding shares of common stock or voting power, and such ownership or voting power would have the largest ownership position. The percentage is measured on a post-transaction basis. Stockholders should note that a “change of control” as described under Nasdaq Listing Rule 5635(b) applies only with respect to the application of such rule, and does not necessarily constitute a “change of control” for purposes of Delaware law or our organizational documents.

As of the Record Date, Khosla Ventures and its affiliates beneficially owned approximately 21.7% of the outstanding shares of common stock of the Company. Assuming (i) the sale of the remaining Convertible Notes under the Convertible Notes Purchase Agreement to investors with whom the Company or its agents have pre-existing, substantive relationships and (ii) the full conversion of the Convertible Notes into common stock, including any interest that is paid in kind, in connection with a subsequent equity financing transaction or otherwise, a holder of Convertible Notes could beneficially own approximately 22% or more of the outstanding shares of common stock, which would represent the largest ownership position of the Company. As a result, the conversion in full of the Convertible Notes and the issuance of shares of common stock, may be deemed a change of control requiring stockholder approval.

Background Regarding the Convertible Notes

For additional information on the Convertible Notes issuance and terms, please see “*Proposal One: The Authorized Share Proposal—Background Regarding the Convertible Notes.*”

Reasons for the Proposal

Under the Convertible Notes, we are obligated to seek approval from our stockholders for the issuance of shares of common stock in connection with settlement of the Convertible Notes for purposes of Nasdaq Listing Rule 5635(b). This proposal is intended to satisfy this obligation under the Convertible Notes and to provide us with greater flexibility to settle conversions of the Convertible Notes using shares of our common stock.

Until the Nasdaq Listing Rule Proposals are approved, the Nasdaq Cap is applicable to the Convertible Notes. As a result, if and when there are conversions, our ability to satisfy them is limited up to the amount of the Nasdaq Cap. The Nasdaq Cap is approximately 39.6 million, which is substantially lower than the number of shares that we believe we need to reserve for potential conversions of the Convertible Notes, after giving effect to certain assumptions, including the Conversion Assumptions. To the extent we are unable to satisfy a conversion in full, the unconverted amounts will remain outstanding.

We and our Board believe it is therefore advisable and in our and our stockholders’ best interests, and critical to our long-term success, for our stockholders to approve this proposal. So long as our ability to satisfy conversions remains capped, we may be unable to satisfy conversions in full, resulting in more principal remaining outstanding and therefore more cash required to repay the Convertible Notes upon maturity. If we cannot convert the outstanding Convertible Notes into shares of our common stock and are obligated to repay the Convertible Notes using our available cash at maturity, we will have less cash to invest in and grow our business. The use of cash to repay the Convertible Notes at maturity also may have an adverse effect on our overall liquidity and financial condition.

Furthermore, at maturity, we may not have enough available cash, our ability to use cash could be restricted by law, regulation or other agreements governing future indebtedness, and we may not be able to obtain additional financing on commercially reasonable terms, or at all. Our inability to repay the Convertible Notes when they mature would be a default under the Convertible Note Purchase Agreement and potentially cause a cross-default under other agreements and instruments, leading to the exercise of applicable remedies against us and further straining our liquidity.

Required Vote

The affirmative vote of a majority of the votes cast is required for the Nasdaq Listing Rule 5635(b) Proposal. Abstentions and broker non-votes are not considered votes cast and will have no effect on the vote for this proposal.

Recommendation of the Board of Directors

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE
“FOR” THE NASDAQ LISTING RULE 5635(B) PROPOSAL (PROPOSAL TWO)**

PROPOSAL THREE:

THE NASDAQ LISTING RULE 5635(D) PROPOSAL

Overview

We are asking that our stockholders approve the issuance of shares of common stock in connection with settlement of the Convertible Notes, in excess of 19.9% of our outstanding shares of common stock as required by Nasdaq Listing Rule 5635(d) and the Convertible Notes.

Nasdaq Listing Rule 5635(d)

As a result of being listed for trading on the Nasdaq Stock Market, issuances of our common stock are subject to the Nasdaq Listing Rules, including Nasdaq Listing Rule 5635(d). Nasdaq Listing Rule 5635(d) requires stockholder approval in connection with a transaction other than a public offering involving the sale, issuance, or potential issuance by the issuer of common stock (or securities convertible into or exercisable for common stock) equal to 20% or more of the common stock or 20% or more of the voting power outstanding before the issuance for a price that is less than the lower of (i) the Nasdaq closing price immediately preceding the signing of the binding agreement, or (ii) the average the Nasdaq closing price for the five trading days immediately preceding the signing of the binding agreement. To give effect to the foregoing restriction, the Convertible Notes are subject to the Nasdaq Cap.

Background Regarding the Convertible Notes

For additional information on the Convertible Notes issuance and terms, please see “*Proposal One: The Authorized Share Proposal—Background Regarding the Convertible Notes.*”

Reasons for the Proposal

Under the Convertible Notes, we are obligated to seek approval from our stockholders for the issuance of shares of common stock in connection with settlement of the Convertible Notes for purposes of Nasdaq Listing Rule 5635(d). This proposal is intended to satisfy this obligation under the Convertible Notes and to provide us with greater flexibility to settle conversions of the Convertible Notes using shares of our common stock.

Until the Nasdaq Listing Rule Proposals are approved, the Nasdaq Cap is applicable to the Convertible Notes. As a result, if and when there are conversions, our ability to satisfy them is limited up to the amount of the Nasdaq Cap. The Nasdaq Cap is approximately 39.6 million, which is substantially lower than the number of shares that we believe we need to reserve for potential conversions of the Convertible Notes, after giving effect to certain assumptions, including the Conversion Assumptions. To the extent we are unable to satisfy a conversion in full, the unconverted amounts will remain outstanding.

We and our Board believe it is therefore advisable and in our and our stockholders’ best interests, and critical to our long-term success, for our stockholders to approve this proposal. So long as our ability to satisfy conversions remains capped, we may be unable to satisfy conversions in full, resulting in more principal remaining outstanding and therefore more cash required to repay the Convertible Notes upon maturity. If we cannot convert the outstanding Convertible Notes into shares of our common stock and are obligated to repay the Convertible Notes using our available cash at maturity, we will have less cash to invest in and grow our business. The use of cash to repay the Convertible Notes at maturity also may have an adverse effect on our overall liquidity and financial condition. Furthermore, at maturity, we may not have enough available cash, our ability to use cash could be restricted by law, regulation or other agreements governing future indebtedness, and we may not be able to obtain additional financing on commercially reasonable terms, or at all. Our inability to repay the Convertible Notes when they mature would be a default under the Convertible Note Purchase Agreement and potentially cause a cross-default under other agreements and instruments, leading to the exercise of applicable remedies against us and further straining our liquidity.

Required Vote

The affirmative vote of a majority of the votes cast is required for the Nasdaq Listing Rule 5635(d) Proposal. Abstentions and broker non-votes are not considered votes cast and will have no effect on the vote for this proposal.

Recommendation of the Board of Directors

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| <p style="text-align: center;">THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE “FOR” THE NASDAQ LISTING RULE 5635(D) PROPOSAL (PROPOSAL THREE)</p> |
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PROPOSAL FOUR:

THE ADJOURNMENT PROPOSAL

We are asking you to vote to approve one or more adjournments of the Special Meeting to a later date or dates if necessary or appropriate to solicit additional proxies if there are insufficient votes to approve any of the Authorized Share Proposal or the Nasdaq Listing Rule Proposals at the time of the Special Meeting, or if we do not have a quorum.

If our stockholders approve this Adjournment Proposal, we could adjourn the Special Meeting and any reconvened session of the Special Meeting and use the additional time to solicit additional proxies, including proxies from stockholders that have previously returned properly executed proxies voting against approval of any or all of the Authorized Share Proposal or the Nasdaq Listing Rule Proposals.

Among other things, approval of the Adjournment Proposal could mean that if we receive proxies representing an insufficient number of votes in favor of approval of any of the Authorized Share Proposal or the Nasdaq Listing Rule Proposals such that any or all of the proposals would be defeated, we could adjourn the Special Meeting without a vote on any or all proposals and seek to convince stockholders to change their votes to votes in favor of approval of such proposal(s). Additionally, we may seek to adjourn the Special Meeting if a quorum is not present.

Our Board believes that it is in the best interests of our company and our stockholders to be able to adjourn the Special Meeting to a later date or dates if necessary or appropriate for the purpose of soliciting additional proxies in respect of the approval of any or all of the Authorized Share Proposal, the Nasdaq Listing Rule 5635(b) Proposal, or the Nasdaq Listing Rule 5635(d) Proposal if there are insufficient votes to approve any such proposals at the time of the Special Meeting or in the absence of a quorum.

Required Vote

The affirmative vote of a majority of the shares of common stock present, including by means of remote communication, or represented by proxy and entitled to vote on the Adjournment Proposal is required for approval of the Adjournment Proposal. Abstentions will have the same effect as a vote "AGAINST" the Adjournment Proposal. Broker non-votes will have no effect on the vote for the Adjournment Proposal.

Recommendation of the Board of Directors

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE
"FOR" THE ADJOURNMENT PROPOSAL (PROPOSAL FOUR)**

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding the beneficial ownership of shares of common stock as of the Record Date:

- each person known by us to be the beneficial owner of more than 5% of common stock;
- each of our named executive officers and directors; and
- all of our executive officers and directors as a group.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. A person is a “beneficial owner” of a security if that person has or shares “voting power,” which includes the power to vote or to direct the voting of the security, or “investment power,” which includes the power to dispose of or to direct the disposition of the security, or has the right to acquire such powers within 60 days.

The beneficial ownership of shares of common stock is calculated based on 197,782,055 shares of common stock outstanding as of the Record Date.

Unless otherwise noted in the footnotes to the following table, and subject to applicable community property laws, the persons and entities named in the table have sole voting and investment power with respect to their beneficially owned common stock.

| Name and Address of Beneficial Owner | Number of shares | % of Total Voting Power |
|---|-------------------|-------------------------|
| <i>Directors and Named Executive Officers of LanzaTech⁽¹⁾</i> | | |
| Dr. Jennifer Holmgren ⁽²⁾ | 5,435,479 | 2.75% |
| Geoff Trukenbrod ⁽³⁾ | 1,111,327 | * |
| Dr. Steven Stanley | 33,381 | * |
| Chad Thompson | 47,607 | * |
| Dr. Zarath Summers | 90,668 | * |
| Barbara Byrne | 20,000 | * |
| Nigel Gormly | 20,000 | * |
| Dorri McWhorter | 20,000 | * |
| James Messina ⁽⁴⁾ | 1,140,458 | * |
| Gary Rieschel | 20,000 | * |
| <i>All Directors and Executive Officers of LanzaTech as a Group (14 individuals)</i> | 11,032,233 | 5.58% |
| <i>Five Percent Holders:</i> | | |
| Khosla Ventures ⁽⁵⁾ | 42,867,361 | 21.67% |
| Guardians of New Zealand Superannuation ⁽⁶⁾ | 33,263,337 | 16.82% |
| Sinopec Capital Co., Ltd. ⁽⁷⁾ | 17,112,976 | 8.65% |
| Novo Holdings A/S ⁽⁸⁾ | 15,814,845 | 8.00% |

* Less than one percent.

(1) Unless otherwise noted, the business address of each of the following individuals is 8045 Lamont Avenue, Suite 400, Skokie, Illinois 60077.

(2) Consists of (i) 3,224,705 shares of common stock and (ii) 2,210,774 shares of common stock subject to options exercisable within 60 days of the Record Date.

(3) Consists of (i) 16,095 shares of common stock and (ii) 843,689 shares of common stock subject to options exercisable within 60 days of the Record Date.

(4) Consists of (i) 504,924 shares of common stock and (ii) 635,534 shares of common stock subject to options exercisable within 60 days of the Record Date.

(5) Consists of (i) 13,875,332 shares of common stock held by KV III, (ii) 28,992,029 shares of common stock held by entities owned or controlled by Vinod Khosla. Khosla Ventures Associates III, LLC (“KVA III”) is the general partner of KV III. VK Services, LLC (“VK Services”) is the Manager of KVA III. Vinod Khosla is the Managing Member of VK Services. As such, (i) each of KVA III and VK Services may be deemed to be the beneficial owners having shared voting power and shared investment power over 13,875,332 shares of common stock, and (ii) Vinod Khosla may be deemed to be the beneficial owner having shared voting power and shared investment power over 13,875,332 shares of common stock, and each disclaims beneficial ownership of such securities except to the extent of his or its pecuniary interest therein. The business address of Vinod Khosla and each of the other entities listed in this footnote is 2128 Sand Hill Road, Menlo Park, CA 94025.

(6) Consists of shares of common stock held by Guardians of New Zealand Superannuation, as the manager and administrator of the New Zealand Superannuation Fund. Matt Whineray, Chief Executive Officer, has direct voting and investment power over these shares. The business address of Guardians of New Zealand Superannuation is 21 Queen Street Level 12, Auckland 1010, New Zealand.

(7) Any action by Sinopec Capital Co., Ltd. with respect to its shares, including voting and dispositive decisions, requires a vote of three out of the five members of its investment team. Under the so-called “rule of three,” because voting and dispositive decisions are made by three out of the five members of the investment team, none of the members is deemed to be a beneficial owner of securities held by Sinopec Capital Co., Ltd. Accordingly, none of the members of the investment team is deemed to have or share beneficial ownership of the shares held by Sinopec Capital Co., Ltd. The business address of Sinopec Capital Co., Ltd. is 22nd Floor, World Financial Center East Tower, 1 East 3rd Ring Middle Road, Chaoyang District, Beijing, China.

(8) Novo Holdings A/S has the sole power to vote and dispose of the shares, and no individual or other entity is deemed to hold any beneficial ownership in the shares. The business address of Novo Holdings A/S is Tuborg Havnevej 19, 2900 Hellerup, Denmark.

OTHER BUSINESS

Pursuant to our Bylaws, business transacted at the Special Meeting is limited to the matters relating to the purposes stated in the Notice of Special Meeting.

ADDITIONAL INFORMATION

Householding

The SEC's rules permit companies and intermediaries such as brokers, trustees or other nominees to satisfy delivery requirements for proxy statements, annual reports and notices of internet availability with respect to two or more stockholders sharing the same address by delivering a single set of these materials addressed to those stockholders.

Stockholders residing in the same household who hold their shares through a broker, trustee or other nominee may receive only one proxy statement in accordance with a notice sent earlier by their broker, trustee or other nominee. This practice of sending only one copy of proxy materials is called "householding," and saves us money in printing and distribution costs. This practice will continue unless instructions to the contrary are received by your broker, trustee or other nominee from one or more of the stockholders within the household.

If you hold your shares in "street name" and reside in a household that received only one copy of the proxy materials, you can request to receive a separate copy in the future by following the instructions sent by your broker, trustee or other nominee. If your household is receiving multiple copies of the proxy materials, you may request that only a single set of materials be sent by following the instructions sent by your broker, trustee or other nominee. If you would like to receive a separate copy of this proxy statement, please contact us at 8045 Lamon Avenue, Suite 400, Skokie, Illinois 60077, telephone number (847) 324-2400, and we will promptly deliver the requested materials.

Requirements, Including Deadlines, for Submission of Proxy Proposals, Nomination of Directors and Other Business of Stockholders

Pursuant to Rule 14a-8 under the Securities Exchange Act of 1934, stockholders may present proper proposals for inclusion in our proxy statement and for consideration at our next annual meeting of stockholders. Any proposal of a stockholder intended to be included in our proxy statement for the 2025 Annual Meeting of Stockholders pursuant to Rule 14a-8 must be received by us no later than December 30, 2024, unless the date of our 2025 Annual Meeting of Stockholders is more than 30 days before or after June 25, 2025, in which case the proposal must be received a reasonable time before we begin to print and mail our proxy materials. All proposals should be directed to LanzaTech Global, Inc., 8045 Lamon Avenue, Suite 400, Skokie, Illinois 60077, Attn: Corporate Secretary.

Pursuant to the terms of our Bylaws, stockholders wishing to submit proposals or director nominations for consideration at our 2025 Annual Meeting of Stockholders, including those that are not to be included in such proxy statement and proxy, must provide timely notice in writing to LanzaTech Global, Inc., 8045 Lamon Avenue, Suite 400, Skokie, Illinois 60077, Attn: Corporate Secretary. Pursuant to our Bylaws, to be timely, a stockholder's notice must be delivered to or mailed and received at our principal executive offices not later than the close of business on March 27, 2025 nor earlier than February 25, 2025; provided, however, that if the date of the 2025 Annual Meeting of Stockholders is more than 30 days before or more than 60 days after such anniversary date, notice by stockholders to be timely must be so delivered, or mailed and received, not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the 90th day prior to such annual meeting or the 10th day following the day on which public disclosure of the date of such annual meeting was first made. Stockholders are advised to review our Bylaws, which contain additional requirements with respect to advance notice of stockholder proposals and director nominations.

In addition to satisfying the requirements under our Bylaws with respect to advance notice of any nomination, any stockholder that intends to solicit proxies in support of director nominees other than the Company's nominees must comply with all the requirements of Rule 14a-19 promulgated under the Securities Exchange Act of 1934.

Annual Report

We filed our Annual Report on Form 10-K with the SEC on February 29, 2024. Stockholders may obtain a copy of our Annual Report on Form 10-K, including the financial statements, without charge, by writing to us at 8045 Lamon Avenue, Suite 400, Skokie, Illinois 60077. Our Annual Report on Form 10-K and the other filings that we make with the SEC can also be accessed on our website at www.lanzatech.com. Information on our website, reports or social media feeds is not part of or incorporated by reference in this proxy statement. We will also furnish any exhibit to our Annual Report on Form 10-K, if specifically requested.

Please submit your proxy whether or not you plan to attend the Special Meeting.

By the Order of the Board of Directors,

/s/ Joseph Blasko
Joseph Blasko
General Counsel & Corporate Secretary

FORM OF CERTIFICATE OF AMENDMENT
OF
SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
LANZATECH GLOBAL, INC.

Pursuant to Section 242 of the
General Corporation Law of the State of Delaware

LanzaTech Global, Inc. (the “**Corporation**”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

A resolution was duly adopted by the Board of Directors of the Corporation on August 28, 2024 pursuant to Section 242 of the General Corporation Law of the State of Delaware setting forth an amendment to the Second Amended and Restated Certificate of Incorporation of the Corporation filed with the Delaware Secretary of State on February 8, 2023 (the “**Certificate of Incorporation**”), and declaring said amendment to be advisable. On [], 2024, the stockholders of the Corporation duly approved said proposed amendment at the Corporation’s Special Meeting of Stockholders in accordance with Section 242 of the General Corporation Law of the State of Delaware. The resolution setting forth the amendment is as follows:

RESOLVED: That the first sentence of Section 4.1 of the Certificate of Incorporation, be and hereby is deleted in its entirety and the following sentence is inserted in lieu thereof:

The total number of shares of all classes of capital stock, each with a par value of \$0.0001 per share, which the Corporation is authorized to issue is 620,000,000 shares, consisting of (a) 600,000,000 shares of common stock (the “**Common Stock**”) and (b) 20,000,000 shares of preferred stock (the “**Preferred Stock**”).

IN WITNESS WHEREOF, the Corporation has caused its corporate seal to be affixed hereto and this Certificate of Amendment to be signed by a duly authorized officer of the Corporation this [] day of [], 2024.

LANZATECH GLOBAL, INC.

By: _____
Name:
Title:

LanzaTech

Your Vote is Very Important

Please vote your proxy today!

Internet voting is available by following the instructions on the proxy card or voting instruction form sent to you.

If you have any questions or need assistance voting your shares, or require additional copies of proxy materials, please contact our proxy solicitor, Sodali & Co., as follows:

Sodali & Co.

**333 Ludlow Street, 5th Floor, South Tower
Stamford, CT 06902**

Banks and Brokers may call: (203) 658-9400)

Stockholders may call toll free: (800) 662-5200

Email: LNZA.info@investor.sodali.com

YOUR VOTE IS IMPORTANT. PLEASE VOTE TODAY.

2024

**Vote by Internet, Smartphone or Tablet –QUICK ★★★ EASY
IMMEDIATE – 24 Hours a Day, 7 Days a Week or by Mail**

LANZATECH GLOBAL, INC.

Your Mobile or Internet vote authorizes the named proxies to vote your shares in the same manner as if you marked, signed and returned your proxy card by mail. Votes submitted electronically over the Internet must be received by 11:59 p.m., Eastern Time, on October 1, 2024.



INTERNET –
www.cstproxyvote.com

Use the Internet to vote your proxy. Have your proxy card available when you access the above website. Follow the prompts to vote your shares.



Vote at the Meeting –

If you plan to attend the virtual online special meeting, you will need your 12 digit control number to vote electronically at the special meeting. To attend:

https://www.cstproxy.com/lanzatech/sm2024



MOBILE VOTING

On your Smartphone/Tablet, open the QR Reader and scan the below image. Once the voting site is displayed, enter your Control Number from the proxy card and vote your shares.

**PLEASE DO NOT RETURN THE PROXY CARD
IF YOU ARE VOTING ELECTRONICALLY.**



MAIL – Mark, sign and date your proxy card and return it in the postage-paid envelope provided.

▲ FOLD HERE • DO NOT SEPARATE • INSERT IN ENVELOPE PROVIDED ▲

PROXY CARD

THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” PROPOSAL 1, PROPOSAL 2, PROPOSAL 3 AND PROPOSAL 4.

Please mark
your votes
like this



1. To approve an amendment to LanzaTech’s Second Amended and Restated Certificate of Incorporation, to increase the number of authorized shares of common stock from 400,000,000 to 600,000,000.

FOR AGAINST ABSTAIN

3. To approve LanzaTech’s ability to settle conversions of certain convertible notes using shares of LanzaTech’s common stock in excess of 19.9% of the number of outstanding shares of common stock, as required in accordance with Nasdaq Listing Rule 5635(d).

FOR AGAINST ABSTAIN

2. To approve any “change of control” under Nasdaq Listing Rule 5635(b) resulting from the issuance of shares of LanzaTech’s common stock in connection with the conversion of certain convertible notes.

FOR AGAINST ABSTAIN

4. To approve one or more adjournments to a later date or dates, if necessary or appropriate, to solicit additional proxies if there are insufficient votes to approve the other proposals or in the absence of a quorum.

FOR AGAINST ABSTAIN

CONTROL NUMBER

Signature _____ Signature, if held jointly _____ Date _____, 2024

Note: Please sign exactly as name appears hereon. When shares are held by joint owners, both should sign. When signing as attorney, executor, administrator, trustee, guardian, or corporate officer, please give title as such.

▲ FOLD HERE • DO NOT SEPARATE • INSERT IN ENVELOPE PROVIDED ▲

PROXY CARD

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

LANZATECH GLOBAL, INC.

The undersigned appoints Dr. Jennifer Holmgren and Joseph C. Blasko, and each of them as proxies, each with the power to appoint his or her substitute, and authorizes each of them to represent and to vote, as designated on the reverse hereof, all of the shares of common stock of LanzaTech Global, Inc. held of record by the undersigned at the close of business on August 29, 2024 at the Special Meeting of Stockholders of LanzaTech Global, Inc. to be held at 2:00 p.m. Central Time on October 2, 2024, or at any adjournment thereof.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS INDICATED. IF NO CONTRARY INDICATION IS MADE, THE PROXY WILL BE VOTED IN FAVOR OF PROPOSAL 1, PROPOSAL 2, PROPOSAL 3 AND PROPOSAL 4, AND IN ACCORDANCE WITH THE JUDGMENT OF THE PERSONS NAMED AS PROXY HEREIN ON ANY OTHER MATTERS THAT MAY PROPERLY COME BEFORE THE SPECIAL MEETING. THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS.

(Continued and to be marked, dated and signed, on the other side)
