

March 28, 2023

**VIA EDGAR**

United States Securities and Exchange Commission  
Division of Corporation Finance  
Office of Industrial Applications and Services  
100 F Street NE  
Washington, D.C. 20549  
Attn: Margaret Schwartz and Celeste Murphy

**Re: LanzaTech Global, Inc.**  
**Registration Statement on Form S-1**  
**Filed February 13, 2023**  
**File No. 333-269735**

Dear Ms. Schwartz and Ms. Murphy:

On behalf of our client, LanzaTech Global, Inc. (the “Company” or “LanzaTech”), we are writing to submit the Company’s responses to the comments of the staff of the Division of Corporation Finance (the “Staff”) of the United States Securities and Exchange Commission (the “Commission”) contained in the Staff’s letter dated February 27, 2023 (the “Comment Letter”), with respect to the above-referenced Registration Statement on Form S-1, filed on February 13, 2023 (the “Registration Statement”).

The Company has filed via EDGAR Amendment No. 1 to the Registration Statement (“Amendment No. 1”), which reflects the Company’s responses to the comments received by the Staff and certain updated information. For ease of reference, each comment contained in the Comment Letter is printed below in bold and is followed by the Company’s response. All page references in the responses set forth below refer to page numbers in Amendment No. 1. Capitalized terms used but not defined herein have the meanings set forth in Amendment No. 1.

Registration Statement on Form S-1, Filed February 13, 2023

Prospectus Summary, page 1

- 1. For each of the shares being registered for resale, disclose the price that the selling securityholders paid for such shares and securities underlying such shares.**

Response to Comment 1: In response to the Staff’s comment, the Company has added disclosure on pages 8-9 of Amendment No. 1.

- 2. Disclose that cash proceeds associated with the exercises of the warrants are dependent on the stock price in the prospectus summary, risk factors, MD&A and use of proceeds section. As applicable, describe the impact on your liquidity and update the discussion on the ability of your company to fund your operations on a prospective basis with your current cash on hand.**

Response to Comment 2: In response to the Staff’s comment, the Company has added disclosure on page 6 of Amendment No. 1. The Company respectfully points the Staff to the existing disclosure in the MD&A section on page 49 of Amendment No. 1.

The Company further respectfully advises the Staff that the cash proceeds associated with the exercises of the warrants will not have a material impact on the Company's liquidity or the ability of the Company to fund its operations on a prospective basis with its current cash on hand.

- 3. Revise your prospectus to disclose the price that each selling securityholder paid for the securities being registered for resale. Highlight any differences in the current trading price, the prices that the Sponsor, private placement investors, PIPE investors and other selling securityholders acquired their shares and warrants, and the price that the public securityholders acquired their shares and warrants. Please also disclose the potential profit the selling securityholders will earn based on the current trading price. We note you disclose that certain selling securityholders may receive up to approximately \$14.8 million in the aggregate from sales of their shares, please revise to also address all other selling securityholders as well. Lastly, please include appropriate risk factor disclosure.**

Response to Comment 3: In response to the Staff's comment, the Company has added disclosure on pages 7-9 of Amendment No. 1.

Risk Factors, page 7

- 4. Include an additional risk factor highlighting the negative pressure potential sales of shares pursuant to this registration statement could have on the public trading price of the common stock. To illustrate this risk, disclose the purchase price of the securities being registered for resale and the percentage that these shares currently represent of the total number of shares outstanding.**

Response to Comment 4: In response to the Staff's comment, the Company has added disclosure on page 50 of Amendment No. 1.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview, page 66

- 5. In light of the significant number of redemptions and the unlikelihood that the company will receive significant proceeds from exercises of the warrants because of the disparity between the exercise price of the warrants and the current trading price of the common stock, expand your discussion of capital resources to address any changes in the company's liquidity position since the business combination. If the company is likely to have to seek additional capital, discuss the effect of this offering on the company's ability to raise additional capital.**

Response to Comment 5: In response to the Staff's comment, the Company respectfully advises the Staff that there have been no material changes to the Company's liquidity position since the closing of the business combination. The Company does not expect to seek additional capital in light of the number of redemptions that occurred in connection with the closing of the business combination or the unlikelihood that the Company will receive significant proceeds from exercises of the warrants in the near term.

6. **Please expand your discussion here to reflect the fact that this offering involves the potential sale of a substantial portion of shares for resale and discuss how such sales could impact the market price of the company's common stock.**

Response to Comment 6: In response to the Staff's comment, the Company has added disclosure on page 67 of Amendment No. 1.

7. **We note that your forward purchase agreement provides an investor with the right to sell back shares to the company at a fixed price three years after the closing date of the business combination. Please revise to discuss the risks that this agreement may pose to other holders if you are required to buy back the shares of your common stock as described therein, in which case the investor would keep the prepayment amount. We also note that the investor is entitled to certain consideration at the end of the three-year term. Discuss how such forced purchases and this other required consideration would impact the cash you have available for other purposes and to execute your business strategy.**

Response to Comment 7: In response to the Staff's comment, the Company has added disclosure on pages 50 and 76 of Amendment No. 1.

General

8. **Please conform the disclosures in your Form S-1, related to your operations in China, with the disclosures in your amended Form S-4 (File No. 333-264811), taking into consideration our comment 6 in our letter dated November 27, 2022.**

Response to Comment 8: In response to the Staff's comment, the Company has added disclosure on the cover page and pages 1-3 of Amendment No. 1.

\* \* \*

Please contact me at (202) 662-5297 or Brian K. Rosenzweig at (212) 841-1108 with any questions or further comments regarding our responses to your comments.

Sincerely,

/s/ Kerry S. Burke

Kerry S. Burke  
Covington & Burling LLP

cc: Jennifer Holmgren, LanzaTech Global, Inc.