

April 11, 2023

Jennifer Holmgren  
Chief Executive Officer  
LanzaTech Global, Inc.  
8045 Lamon Avenue, Suite 400  
Skokie, Illinois 60077

Inc.

Registration Statement on Form S-1  
2023

Re: LanzaTech Global,  
Amendment No. 1 to  
Filed March 29,  
File No. 333-269735

Dear Jennifer Holmgren:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our February 27, 2023 letter.

Amendment No. 1 to Form S-1 filed March 29, 2023

Prospectus Summary, page 1

1. We note your revisions in response to our prior comment 2 and reissue. Please 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.

2. We note your revisions in response to our prior comment 3 and reissue in part. Please disclose the potential profit the selling securityholders will earn based on the current trading price in the Offering Summary, both in the aggregate and on a per share basis.

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3. We note your statement in Footnote 1 of page 9 that you "should not be relied upon for any purpose outside of its illustrative nature." Please remove or revise this statement as you may not disclaim responsibility for the information presented in your registration statement.

Management's Discussion and Analysis of Financial Condition and Results of Operations  
Overview, page 67

4. We note your response to our prior comment 5 and reissue in part. We note your statement that "The Company does not expect to seek additional capital." However, your risk factor contemplates that you "may require substantial additional financing to fund our operations and complete the development and commercialization of the process technologies that produce each of our products or new aspects of our existing process technologies that produce each of our products . . ." Please discuss the effect of this offering on the company's ability to raise additional capital.

You may contact Jordan Nimitz at 202-551-5831 or Jane Park at 202-551-7439 with any questions.

Sincerely,

FirstName LastNameJennifer Holmgren  
Corporation Finance

Division of

Industrial Applications and  
Comapany NameLanzaTech Global, Inc.

Office of

Services

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cc: Kerry Burke, Esq.  
FirstName LastName