

April 19, 2024

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: Benjamin Richie and Jessica Ansart

**Re: LanzaTech Global, Inc.
Post-Effective Amendment No. 3 to Registration Statement on Form S-1
Filed April 5, 2024
File No. 333-269735**

Dear Ms. Nimitz and Ms. Park:

LanzaTech Global, Inc. (the "Company" or "LanzaTech") is writing to submit the Company's response to the comment 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 April 17, 2024 (the "Comment Letter"), with respect to the above-referenced Post-Effective Amendment No. 3 to the Registration Statement on Form S-1, filed on April 5, 2024 (the "Post-Effective Amendment No. 3").

The Company has filed via EDGAR Post-Effective Amendment No. 4 to Registration Statement on Form S-1 ("Post-Effective Amendment No. 4"), which reflects the Company's response to the comment received by the Staff. For ease of reference, the comment contained in the Comment Letter is printed below in bold and is followed by the Company's response. All page references in the response set forth below refer to page numbers in Post-Effective Amendment No. 4. Capitalized terms used but not defined herein have the meanings set forth in Post-Effective Amendment No. 4.

Post Effective Amendment on Form S-1, filed April 5, 2024

About This Prospectus, page ii

- 1. We note your response to comment 1 and reissue the comment in part. We note that references to "PRC" or "China" in your prospectus exclude Hong Kong and Macau. Please revise to clarify that the legal and operational risks associated with operating in China also apply to operations in Hong Kong and Macau. The requested disclosure may appear in the definition itself or in another appropriate discussion of legal and operational risks applicable to the company.**

LanzaTech Inc.
8045 Lamon Avenue, Suite 400, Skokie,
Illinois, 60077, UNITED STATES
Tel: +1 847 324 2400
www.lanzatech.com

Response to Comment 1: In response to the Staff's comment, the Company has revised the disclosure on page ii of Post-Effective Amendment No. 4 to indicate that the legal and operational risks associated with operating in China also apply to operations in Hong Kong and Macau.

* * *

Please contact me at (312) 259-9616 with any questions or further comments regarding our responses to your comments.

Sincerely,

/s/ Joseph C. Blasko

Corporate Secretary
LanzaTech Global, Inc.

cc: Jennifer Holmgren, LanzaTech Global, Inc.
Kerry Burke, Esq, Covington & Burling LLP

LanzaTech Inc.
8045 Lamon Avenue, Suite 400, Skokie,
Illinois, 60077, UNITED STATES
Tel: +1 847 324 2400
www.lanzatech.com