

November 4, 2022

Nimesh Patel
Chief Executive Officer
AMCI Acquisition Corp. II
600 Steamboat Road
Greenwich, Connecticut 06830

Re: AMCI Acquisition
Amendment No. 1 to
Filed October 12,
File No. 333-264811

Corp. II
Registration Statement on Form S-4
2022

Dear Nimesh Patel:

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 June 9, 2022 letter.

Amendment No. 1 to Registration Statement on Form S-4

Summary of the Proxy Statement/Prospectus
Termination Rights of LanzaTech , page 34

1. Please update your disclosure here and on page 156 to clarify that, under the terms of the Merger Agreement, AMCI did not raise the necessary Proposed Additional Financing to meet the Minimum Closing Cash Condition by July 7, 2022 and, therefore, LanzaTech has the outstanding right to terminate the Business Combination. We note disclosure to this effect on pages 97 and 117. If known, please also disclose whether LanzaTech specified how much additional time it would permit before exercising these termination rights.

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Interests of AMCI's Directors and Officers in the Business Combination, page 35

2. We note your response to comment 10 and re-issue in part. Please revise the filing to confirm the conflicts of interest discussion highlights all material interests in the transaction held by the sponsor and the AMCI officers and directors. As currently drafted, you disclose only certain interests "among other things[.]" We note similar disclosure on

Risk Factors

We and LanzaTech have identified material weaknesses in our internal control over financial reporting. . . , page 85

3. We note your disclosure that you identified a nondisclosure that represented a quantitative and qualitative material weakness in your internal control over financial reporting related to the accounting of certain fees owed to Evercore, which Evercore waived in connection with its resignation. Please clarify the nature of this material weakness and the amount of the significant error. Additionally, where appropriate, please revise the "Background of the Business Combination" section on page 109 and the "Resignations and Fee Waivers of the Advisors" section on page 118 to disclose:

- when the material weakness was discovered;
- when the material weakness was communicated to Evercore;
- whether the aggregate \$13.05 million in fees owed to and waived by

Evercore

accounted for this error.

The Business Combination Proposal

Background of the Business Combination, page 109

4. Please disclose when LanzaTech decided to restate its consolidated financial statements for the years ended December 31, 2021 and 2020 and how such restatements were considered in light of the pending Business Combination.

5. Please explain how you came to enter into the Brookfield Framework Agreement on

October 2, 2022 and whether this was connected to your prior

relationships with either

Goldman, Evercore, or Barclays. Relatedly, please disclose whether the

Brookfield

Framework Agreement is the "third party capital" mentioned on page

117.

Resignations and Fee Waivers of the Advisors, page 118

6. We note your response to comment 48, specifically that "[t]he Advisors did not

communicate to AMCI or LanzaTech the reasons leading to their respective resignations

or the waiver of their fees after doing substantially all of the work to earn certain of their

fees other than the work relating to the Proposed Additional

Financing." If true, please

disclose that: (1) AMCI and LanzaTech did not seek out the reasons why

the Advisors

were resigning and forfeiting their fees and; (2) the Advisors refused

to discuss the

reasons for their resignations and forfeiture of fees with AMCI or

LanzaTech.

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7. We note your response to comment 50, specifically your disclosure on page 119 that: (1)

the Advisors received drafts of this proxy statement/prospectus

prepared by AMCI and

LanzaTech and provided limited comments in the ordinary course; (2)

AMCI and

LanzaTech provided drafts of this proxy statement/prospectus to the

Advisors and

requested confirmation that the Advisors agree with the disclosure in

these drafts, and; (3)

the Advisors have either stated that they do not intend to review the

disclosure or have not

responded to such request. Please revise your disclosure here and in

the "Background of

the Business Combination" section to specify:

the nature and timing of the limited comments and which Advisor(s)

provided such

comments;

which Advisor(s) stated that they did not intend to review the

disclosure;

13. Regarding the errors in the Company's recorded share of LanzaJet losses for the years ended 2021 and 2020, revise to describe the nature of the adjustments made by LanzaJet to its financial statements for the years ended December 31, 2021 and 2020.
Note 5. Investments, page F-96

14. We reference the disclosure on page F-81 that you determined your licensing arrangement with LanzaJet should have been accounted for as a transaction with a customer within the scope of Accounting Standards Codification 606 Revenue from contracts with customers rather than akin to an operating lease under Accounting Standards Codification 842, Leases. Please revise to disclose the terms of the licensing arrangement that you considered and how you concluded that accounting for the arrangement under ASC 606 is appropriate.
Exhibits and Financial Statement Schedules, page II-2

15. We note your response to comment 42 and re-issue in part. For each exhibit that contains confidential information that has been redacted in accordance with Regulation S-K Item 601(b), please include a prominent statement on the first page of each redacted exhibit that certain identified information has been excluded from the exhibit because it is both not material and is the type that you treat as private or confidential.
General

16. We note your response to our prior comments 13 and 32. Based on these responses and your current disclosure, it appears to us that a majority of LanzaTech's current commercial operations are located in China. For instance, it appears that the six projects under development in Belgium, the United States, China, Japan, Canada, and India are not material to LanzaTech's current operations. In this regard, we also note your response that the ArcelorMittal steel mill in Ghent, Belgium is currently under construction. We
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also note the following disclosure on page 75: "While we are headquartered in the United States and our executive team sits in Chicago, Illinois, we have significant business operations in China. This includes a minority ownership stake in a joint venture, several strategic investors located in China, including Sinopec, and a core team of technical, business and administrative professionals at a LanzaTech office in Shanghai, which support the ongoing operations and further growth of the business in China. We license our technology in China, and our low carbon ethanol is currently being produced at three commercial scale facilities operated by our partners using our process technology, which, in addition to its use as fuel, is transported and processed for use in consumer products. Meanwhile, several additional facilities are being engineered and constructed."

In light of the above, please either provide a detailed analysis, discussing both quantitative and qualitative factors, supporting your determination that LanzaTech

does not have a majority of its current operations in China, or revise your registration statement to address each of the comments from the Division of Corporation Finance s Sample Letter to China-Based Companies issued by the Staff in December 2021. To the extent you do not believe a comment is applicable, please explain why such is the case in your response letter.

17. We note your response to comment 53. Please additionally provide us with the February 19, 2021 engagement letter between Barclays and LanzaTech in which LanzaTech engaged Barclays to act as its financial advisor and capital markets advisor in connection with the possible sale of LanzaTech s business to a SPAC.

18. With a view toward disclosure, please tell us whether your sponsor is, is controlled by, has any members who are, or has substantial ties with, a non-U.S. person. Please also tell us whether anyone or any entity associated with or otherwise involved in the transaction, is, is controlled by, or has substantial ties with a non-U.S. person. If so, please revise your filing to include risk factor disclosure that addresses how this fact could impact your ability to complete your initial business combination. For instance, discuss the risk to investors that you may not be able to complete an initial business combination with a target company should the transaction be subject to review by a U.S. government entity, such as the Committee on Foreign Investment in the United States (CFIUS), or ultimately prohibited. Further, disclose that the time necessary for government review of the transaction or a decision to prohibit the transaction could prevent you from completing an initial business combination and require you to liquidate. Disclose the consequences of liquidation to investors, such as the losses of the investment opportunity in a target company, any price appreciation in the combined company, and the warrants, which would expire worthless.

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You may contact Kristin Lochhead at 202-551-3664 or Daniel Gordon at 202-551-3486 if you have questions regarding comments on the financial statements and related matters. Please contact Dillon Hagius at 202-551-7967 or Laura Crotty at 202-551-7614 with any other questions.

Sincerely,

FirstName LastNameNimesh Patel
Corporation Finance
Applications and
Comapany NameAMCI Acquisition Corp. II

Division of
Office of Industrial
Services

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cc: Elliott Smith
FirstName LastName