

December 19, 2022

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

Re: AMCI Acquisition  
Amendment No. 3 to  
Filed December 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 our November 27, 2022 letter.

Amendment No. 3 to Registration Statement on Form S-4

Additional Conditions to the Obligations of LanzaTech, page 156

1. You disclose on page 157 that, in the event that it becomes reasonably apparent to the parties that the Minimum Closing Cash Condition will not be satisfied, AMCI agrees to use commercially reasonable efforts to enter into non-redemption agreements or similar agreements as may be necessary to satisfy this Condition. Please revise to clarify whether any non-redemption agreements will be fully disclosed for shareholders to consider in advance of the Special Meeting and, to the extent you intend to provide such information to shareholders, disclose how you will inform your shareholders of arrangements formed after effectiveness. Please also disclose whether you have or are currently negotiating any such non-redemption agreements.

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LanzaJet Shareholder Loan, page 293

2. We note your response to our prior comment 5. Please provide a quantitative and qualitative analysis supporting your determination that the Note Purchase Agreement is not material to the company within the meaning of Item 601(b)(10) of Regulation S-K. In this regard we note that the aggregate principal amount of the Note Purchase Agreement

could total \$147 million and that certain of the notes related to this Agreement are secured

by a security interest over the intellectual property owned or in-licensed by LanzaJet.

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  
  
Industrial Applications and  
Comapany NameAMCI Acquisition Corp. II

Division of  
  
Office of  
  
Services

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cc: Elliott Smith

FirstName LastName