

June 9, 2022

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

Re: AMCI Acquisition

Corp. II
Statement on Form S-4

Registration

Filed May 10, 2022
File No. 333-264811

Dear Mr. Patel:

We have reviewed your 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.

Registration Statement on Form S-4 filed May 10, 2022

Cover Page

1. Please disclose the maximum redemption level, expressed as a percentage, that would permit completion of the business combination both on the cover page and where discussed throughout the filing, including, but not limited to, in relation to the tables on pages 12, 14 and 15. We note your disclosure on page 153 to this effect.

2. Please identify the PIPE Investors on an individual basis where the term is first used and defined. Specifically identify those investors that are existing LanzaTech stockholders and describe other relationships or affiliations with AMCI, LanzaTech, and the Sponsor. Please also identify the PIPE Investor that has a SAFE Note with LanzaTech. If and when the Proposed Additional Financing is in place, please provide a description of the material terms of such financing, including the identit(ies) of the parties involved and their

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relationships or affiliations, if any, with AMCI, LanzaTech, and the Sponsor.

Questions and Answers about the Business Combination and the Special Meeting
How will I be notified of the outcome of LanzaTech's stockholder vote to approve the Business Combination?, page 13

3. Please revise the above referenced Q&A to clearly disclose:

how AMCI shareholders will be notified of the outcome of the LanzaTech's stockholder vote regarding the business combination; that AMCI may terminate the agreement if the LanzaTech Requisite Approval is not obtained within ten business days following the effectiveness of this registration statement; and the percentage of each class of LanzaTech shares that must vote in favor of the transaction, in addition to those shares already committed under the LanzaTech Stockholder Support Agreement, in order to satisfy the LanzaTech Requisite Approval requirement. Note the related risk factor on page 81 should also disclose these percentages.

What happens to the funds deposited in the Trust Account after consummation of the Business Combination?, page 14

4. Please revise this Q&A to identify the underwriters that are entitled to the deferred underwriting commission of \$5,250,000.

How will the level of redemptions by AMCI Stockholders affect my ownership in New LanzaTech following the Closing?, page 15

5. Revise your disclosure to show the potential impact of redemptions on the per share value of the shares owned by non-redeeming shareholders by including a sensitivity analysis showing a range of redemption scenarios, including minimum, maximum and multiple interim redemption levels.

What interests do the Sponsor and AMCI's current officers and directors have in the Business Combination?, page 20

6. Please quantify the out-of-pocket expenses and loans that are at risk if the business combination does not occur and provide more specificity about how the board considered the potential conflicts listed in this section when negotiating and recommending the business combination. Similarly revise the conflicts disclosure on pages 35, 68, and 109.

7. We note your disclosure on page 21 that the AMCI Insiders have waived any right to redemption with respect to the founder shares. Please describe any consideration provided in exchange for this agreement.

8. Please disclose which of your independent directors are members of the Sponsor.

Similarly revise the conflicts disclosure on pages 35, 68, and 109.

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Summary of the Proxy Statement/Prospectus
Information About the Parties to the Business Combination, page 27

9. Please provide additional information about LanzaTech in the Summary section, including a discussion of the stage of development of its Platform Technology and products, its history of net losses, accumulated deficit, and its expectations around revenue generation. As currently drafted, shareholders are provided with little information regarding the business history or prospects of the target business, which is material to a decision of how to vote in relation to the proposed business combination.

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

10. Please confirm that the conflicts of interest discussion highlights

all material interests in the transaction held by the sponsor and the company's officers and directors. This could include fiduciary or contractual obligations to other entities as well as any interest in, or affiliation with, the target company. In addition, please revise your disclosure to clarify how the board considered those conflicts in negotiating and recommending the business combination.

Risk Factors

Risks Related to LanzaTech's Business and Industry

Our financial projections may differ materially from actual results., page 50

11. Please revise your statement that "[n]either we nor AMCI have any duty to update the financial projections included in this proxy statement/prospectus" to confirm that you will update or revise such disclosure to the extent required by law. We expect to rely on a limited number of industry partners for a significant portion of our near-term revenue., page 56

12. Please identify the industry partners from which you expect to generate "most of your revenues in the near future." Confirm that this assumption was included in LanzaTech's internally prepared forecasts, which you discuss on page 105, and specify how you define the term "near future" in the context of these projections, the latter of which we note include each of the years in the five-year period ending December 31, 2026.

Political and economic uncertainty, including changes in policies of the Chinese government or in relations between China..., page 63

13. We note the above entitled risk factor discussing your operations in China, your joint venture and your joint venture partners in China, and certain of your strategic investors located in China, including Sinopec Capital Co, Ltd. Please revise your filing, as applicable, to provide more specific and prominent disclosures about the legal and operational risks associated with China-based companies or explain why such comments

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are not applicable to the company. Please see the Division of Corporation Finance's

Sample Letter to China-Based Companies issued by the Staff in December 2021 for the

issues to be considered and addressed.

Some of our intellectual property may be subject to federal regulation such as march-in rights...,

page 66

14. Please revise to identify which of your intellectual property rights is or may be subject to march-in rights connected to grants from U.S. government agencies.

Please

also provide disclosure to this effect in the Business section, where appropriate.

Risks Related to AMCI and the Business Combination, page 68

15. Please highlight the material risks to public warrant holders, if any, arising from the differences between private warrants, LanzaTech Warrants, and public warrants.

16. Your current charter limits the application of the doctrine of corporate opportunity under certain circumstances. Please address this potential conflict of interest in a separate risk

factor and indicate whether it impacted your search for an acquisition target.

Our warrant agreement designates the courts of the State of New York or the United States

District Court for the Southern District..., page 71

17. Please revise this risk factor to disclose that there is also a risk that your exclusive forum

provision may result in increased costs for investors to bring a claim. Please similarly

revise the risk factor on page 82 concerning the exclusive forum provision in LanzaTech's

certificate of incorporation. Our stockholders will experience immediate dilution as a consequence of the

issuance of New LanzaTech Common Stock as consideration..., page 75

18. Please revise to disclose all possible sources and extent of dilution that shareholders who

elect not to redeem their shares may experience in connection with the business

combination. Provide disclosure of the impact of each significant source of dilution,

including the amount of equity held by founders, convertible securities, including warrants

retained by redeeming shareholders, at each of the redemption levels detailed in your

sensitivity analysis, including any needed assumptions.

19. Quantify the value of warrants, based on recent trading prices, that may be retained by

redeeming stockholders assuming maximum redemptions and identify any material

resulting risks.

Background of the Business Combination, page 92

20. Please revise to specifically identify the following persons or entities:

each person or entity that composes the AMCI Group (refer to page 92);

the "consultant specializing in blast furnaces and steel off-gases" with whom you had

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a discussion on October 14, 2021 (refer to page 95);

each of the "various market experts" with whom you held calls to further understand

global end-market dynamics for LanzaTech's products (refer to page 97).

21. Please disclose when AMCI engaged both Evercore and Goldman Sachs to act as its

capital markets advisors. As it concerns Goldman Sachs, please expand your disclosure to

more specifically explain the scope of this agreement, including the role Goldman

Sachs played with respect to valuation, analysis and due diligence and the agreement's

proposed fee structure. Please also disclose whether Goldman Sachs provided AMCI with

a report, opinion or appraisal for the proposed business combination at any time prior to

its resignation on May 6, 2022.

22. We note that AMCI evaluated "numerous" target business candidates after its IPO

and entered into 20 confidentiality agreements with potential target companies. Please

explain how you narrowed to these 20 targets and briefly explain why and when each was

eliminated as a potential target. Please also include additional disclosure concerning the

timeline of your negotiations with the other target company to which AMCI submitted a

non-binding letter of intent. Your disclosure in this section should provide shareholders

with an understanding of why other target companies were not ultimately chosen as

business combination partners.

23. In addition to the \$4.6 million payable to Evercore as deferred underwriting compensation, please disclose the total fees that Barclays Capital Inc. and Evercore Group, L.L.C. will receive upon completion of the business combination and any amount that is contingent upon completion of the transaction for serving as financial advisors. Please also disclose, on a firm-by-firm basis, the amount of fees attributable to capital markets advisory services and the amount attributable to placement agent services.

24. When discussing Goldman Sachs' May 6, 2022 resignation, please describe the services that remained outstanding from Goldman Sachs that would have been required in order to earn the fees that you indicate have been forfeited. For example, if Goldman Sachs would have played a role in the closing of the business combination, please revise to identify the party who will be filling this role. Additionally, please discuss the potential impact on the transaction related to this resignation. This discussion should address the fact that, in its role as capital markets advisor, Goldman Sachs assisted in the creation of the Selected Public Company Analysis (as disclosed on page 103) and the identification of potential PIPE Investors (as disclosed on page 98).
Financial Analysis, page 103

25. We note that the AMCI Board did not seek a third-party valuation and did not receive any valuation report or opinion from a third party in connection with the business combination. Please revise to explain why the AMCI Board determined that it was not necessary to obtain a fairness opinion for the business combination. Additionally, revise
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to disclose all material factors that the AMCI Board relied upon in agreeing to the current valuation, clarifying the "other things" the Board considered.
Certain LanzaTech Projected Financial Information, page 105

26. We note the term of the projections through 2026. Please explain the basis for providing projections beyond year three and clarify if the forecasts reflect more than simple assumptions about growth rates. It should be clear how projected growth rates are sustainable over the selected period of time and why it is reasonable to assume such growth rates.

27. We have the following comments regarding the assumptions presented in your projected financial information:
Revise to disclose in more detail the material assumptions underlying the projected financial information rather than merely list the factors that could affect the figures presented;
Quantify the underlying operational and market assumptions discussed in the third to last paragraph on page 108 to the extent possible;
Explain how the projected information currently disclosed is representative of your current and expected future joint development agreements, U.S. government R&D contracts, and collaboration agreements;
Explain the relationship between your current and expected installed capacity and

how you expect it to result in the increase in recurring revenues over the periods presented.

28. We note your statements on this page that investors "are cautioned not to place undue reliance on the prospective financial information" of Lanzatech's projected financial information and are "cautioned not to rely on the projections in making a decision regarding the Business Combination[.]" Please revise these statements to remove any implication that investors are not entitled to rely on disclosure in your registration statement.

29. You disclose that LanzaTech provided AMCI with its internally prepared forecasts for each of the years in the five-year period ending December 31, 2026. Please disclose when these projections were prepared. In this regard, we note your disclosure on page 94 that on September 13, 2021, AMCI had a call with LanzaTech to walk through its financial model and associated projections in detail. Please explain whether or not the projections still reflect management's views on future performance and describe what consideration the board gave to obtaining updated projections.

30. We note your disclosure on page 106 that AMCI relied on numerous estimates and certain assumptions, including certain of those listed on this page. Please disclose all the material estimates and assumptions relied upon by the LanzaTech management team. In this regard, please clarify what "other assumptions" were "impacted by the reality that research, product development, project timelines, operational execution, and downstream product demand are difficult to predict and will be impacted by numerous circumstances

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that are out of LanzaTech's control." Similarly, as it concerns your disclosure on page 108, revise this section to disclose all material projections rather than limiting the information to the "key elements" thereof.
Certain Engagements in Connection with the Business Combination and Related Transactions,
page 112

31. Please revise your statement that Evercore was engaged by AMCI to act as "sole financial advisor and capital markets advisor" to AMCI in connection with the business combination, as this does not appear consistent with the fact that AMCI also retained Goldman Sachs to act as a capital markets advisor at one point in time.
Information About LanzaTech
Overview, page 179

32. Please revise the Overview section on page 179 to clarify whether the company's current commercial operations are all located in China. In this regard, we that you do not discuss the carbon capture and transformation facility at ArcelorMittal's steel mill in Ghent, Belgium in the Overview. Please clarify what role such facility plays in the company's operations. Please also disclose where the "numerous projects in construction, under development, and in the pipeline" are located and provide details about each, to the extent material.

33. We note your comparison of your technology platform to the brewing

process. Please
revise this statement to note the novel nature of your technology
platform, which you
disclose on page 55, and to specify the nature of your end products,
which you disclose on
pages 188 to 192.
Intellectual Property, page 192

34. We note your disclosure that your intellectual property portfolio is
comprised of 1,115
patents and over 470 pending patent applications across 119 patent
families across your
overall technology platform. For each material patent or patent
family, please revise your
disclosure to include the specific products or technologies to which
the patents relate, the
type of patent protection obtained (composition of matter, use or
process), the jurisdiction
of the patents and the expiration year. If any of these patents are
in-licensed, please
specify. In this regard it may be useful to provide tabular disclosure
in addition to the
narrative.
Key Collaboration Agreements, page 193

35. Please revise the description of the following agreements to disclose:
(1) the amount paid
or received to date from upfront payments, milestone payments, and/or
royalties; (2) the
aggregate potential milestone payments, and; (3) royalty rates (to a
range that does not
exceed ten percentage points):
License Agreement with Battelle Memorial Institute;
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License Agreement with LanzaJet;
Shougang Joint Venture License Agreement;
Agreements with Sekisui Chemical Co., Ltd;
Letter Agreement with IndianOil;
Suncor License Agreement.
Shougang LanzaTech Joint Venture, page 195

36. Please revise your disclosure to provide a diagram of Beijing Shougang
LanzaTech
Technology Co., Ltd.'s corporate structure and identify the persons or
entities that own the
equity in each depicted entity.
Management's Discussion and Analysis of Financial Condition and Results of
Operations of
Lanzatech, page 202

37. We note your disclosure on page 207 that you hold interests in certain
VIEs. Please revise
your disclosure to identify whether you have any contractual
arrangements with
VIEs based in China and whether these VIEs are connected to the letter
agreement with
Sinopec Capital Co, Ltd. and/or the Shougang Joint Venture.
Management's Discussion and Analysis of Financial Condition and Results of
Operations of
Lanzatech
Results of Operations, Comparisons of the Years Ended December 31, 2021 and
2020,
Revenues, page 208

38. We reference the disclosure that the net impact of joint development
agreements increased
revenues by \$4.8 million due to new collaborative arrangements and
continued
collaborations with existing customers. Please revise to quantify the
increase in revenues
related to new collaborative arrangements versus those with existing
customers.
Beneficial Ownership of Securities , page 239

39. Please identify in footnotes to the table all natural persons who have voting and/or

investment power over the shares held by Guardians of New Zealand Superannuation, Sinopec Capital, Co. Ltd, and Novo Holdings A/S.

Certain Relationships and Related Party Transactions , page 256

40. Please identify the Anchor Investors and expand your disclosure to specifically describe

any related party affiliation. To the extent any of your sponsors, directors, officers or their affiliates helped facilitate agreements with the Anchor Investors, please disclose

the specific role they played in doing so in the "Background of the Business Combination"

section on page 92.

Related Stockholder Agreements, page 259

41. Please file the LanzaTech Investor Rights Agreement, Amended and Restated Right of

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First Refusal and Co-Sale Agreement, and Amended and Restated Voting Agreement as

analysis supporting your

belief that such filing is not required. See Item 601 of Regulation

S-K.

Exhibits and Financial Statement Schedules., page II-2

42. You state in the footnotes to the Exhibit Index on page II-4 that you have

omitted certain exhibits and schedules in accordance with Item

601(a)(5) of Regulation S-

certain of these K. However, it appears that you have instead redacted information from

exhibits in accordance with Regulation S-K Items 601(b)(2)(ii) and/or

601(b)(10)(iv).

information and include

certain identified a prominent statement on the first page of each redacted exhibit that

material and is the information has been excluded from the exhibit because it is both not

type that the registrant treats as private or confidential.

General

43. Please tell us whether Goldman Sachs was involved in the preparation of any

any analysis underlying disclosure that is included in the registration statement, including

the disclosure in the registration statement, or material underlying disclosure in

the registration statement, including but not limited to the disclosure beginning on page

103 regarding the financial analyses prepared by AMCI management

and/or

the LanzaTech Projected Financial Information beginning on page 105.

If so, clarify

Goldman Sachs' involvement, whether it has retracted any work product associated with

the transaction, and also include a risk factor describing its role in connection with

the preparation of the registration statement and the valuation of

LanzaTech and that it

disclaims any liability in connection with such disclosure included in the registration statement.

44. If Goldman Sachs advised AMCI on the business combination and related transactions,

please add a risk factor that the board of directors of AMCI engaged with an advisor who

assisted in their consideration of the transaction who has

subsequently withdrawn, and

explain whether the board has undertaken any additional procedures in

reviewing the

recommendation in light of the withdrawal of its advisor on whom it relied. If not, the AMCI board should disclose that its advisor resigned and it opted not to revisit the projections and other financial information on which it advised.

45. Please disclose whether Goldman Sachs assisted in the preparation or review of any materials reviewed by the LanzaTech board of directors or management as part of its services to AMCI and whether Goldman Sachs has withdrawn its association with those materials and notified LanzaTech of such disassociation.

46. Please disclose any fees paid or due to Goldman Sachs in connection with its roles as a placement agent and/or a capital markets advisor to AMCI.

47. We note your disclosure on page 112 that Goldman Sachs will not be receiving any

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compensation for serving as a placement agent in the Private Placement and as a capital

markets advisor to AMCI. Please add a risk factor that discloses that such services have

already been rendered, yet Goldman Sachs is waiving such fees and disclaiming

responsibility for the Form S-4 registration statement. Clarify the unusual nature of any

such fee waiver and the impact of it on the evaluation of the business combination.

48. Disclose whether Goldman Sachs provided you with any reasons for the fee waiver. If

there was no dialogue and you did not seek out the reasons why Goldman Sachs was

waiving deferred fees, despite already completing their services, please indicate so in your

registration statement. Further, revise the risk factor disclosure to explicitly clarify that

Goldman Sachs has performed all of its obligations to obtain this fee and therefore is

gratuitously waiving the right to be compensated.

49. Please add a risk factor disclosing the following:

When a financial institution is named in a proxy statement/prospectus such as this, it

typically presumes a level of due diligence and independent analysis on the part of

such financial institution, and it also typically means that a financial institution has

done a level of due diligence ordinarily associated with a professional engagement.

By withdrawing, Goldman Sachs is indicating that it does not want to be associated

with the disclosure or the underlying business analysis related to the transaction.

Accordingly, your disclosure should caution investors that they should not place any

reliance on the fact that Goldman Sachs has been previously involved with this

transaction.

50. Please provide us with a letter from Goldman Sachs stating whether it agrees with the

statements made in your prospectus related to their resignation and, if not, stating the

respects in which it does not agree. Please revise your disclosure accordingly to reflect

that you have discussed the disclosure with Goldman Sachs and it either agrees or does

not agree with the conclusions and the risks associated with such outcome. If Goldman

Sachs does not respond, please revise your disclosure to indicate you have asked and not

received a response and disclose the risks to investors. Additionally, please indicate that

you will not speculate about the reasons that Goldman Sachs withdrew from its role as

placement agent and capital markets advisor and forfeited its fees, if

applicable. The disclosure should clarify whether Goldman Sachs performed substantially all the work to earn these fees.

51. Please tell us whether you are aware of any disagreements with Goldman Sachs regarding disclosure in the financial statements in the Form S-4 registration statement.

52. In light of the resignation of Goldman Sachs, please describe the extent to which the availability of financing that is currently contemplated could be curtailed and how you would expect to manage such a change.

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53. Please provide us with the engagement letter between Goldman Sachs and AMCI. Please disclose any ongoing obligations of AMCI pursuant to the engagement letter that will

survive the termination of the engagement, such as indemnification provisions, and discuss the impact of those obligations on AMCI in the registration statement.

54. Please provide us with any correspondence between Goldman Sachs and AMCI relating to Goldman Sachs' resignation.

55. We note that LanzaTech's website continues to list Goldman Sachs as an advisor on the transaction under the Investor Relations tab. Please explain.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

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

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Sciences
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cc: Elliott Smith
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Sincerely,
Division of
Office of Life