

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G  
(Rule 13d-102)  
INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO RULES 13d-1(b), (c) AND (d) AND AMENDMENTS THERETO FILED  
PURSUANT TO 240.13d-2

LanzaTech Global, Inc.  
(Name of Issuer)

COMMON STOCK, PAR VALUE \$0.0001 PER SHARE  
(Title of Class of Securities)

51655R101  
(CUSIP Number)

February 6, 2023  
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this  
Schedule is filed:

Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting  
person's initial filing on this form with respect to the subject class  
of securities, and for any subsequent amendment containing information  
which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not  
be deemed to be "filed" for the purpose of Section 18 of the Securities  
Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of  
that section of the Act but shall be subject to all other provisions of  
the Act (however, see the Notes).

CUSIP No. 51655R101

1  
NAME OF REPORTING PERSON

Atalaya Capital Management LP

2  
CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a)   
(b)

3  
SEC USE ONLY

4  
CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:

5  
SOLE VOTING POWER

2,926,514 (1)

6  
SHARED VOTING POWER

0

7  
SOLE DISPOSITIVE POWER

2,926,514 (1)

8  
SHARED DISPOSITIVE POWER

0

9  
AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

2,926,514 (1)

10  
CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES\*

11  
PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

1.5%

12  
TYPE OF REPORTING PERSON\*

PN

(1)  
Consists of 2,926,514 shares of common stock owned by ACM ARRT H LLC ("ACM ARRT"). Atalaya Capital Management LP ("ACM") has the power to vote and direct the disposition of all shares held by ACM ARRT, and as a result, may be deemed to beneficially own the securities held by each of ACM ARRT.

1  
NAME OF REPORTING PERSON

ACM ARRT H LLC

2  
CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a)

(b)

3  
SEC USE ONLY

4  
CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:

5  
SOLE VOTING POWER

2,926,514

6  
SHARED VOTING POWER

0

7  
SOLE DISPOSITIVE POWER

2,926,514

8  
SHARED DISPOSITIVE POWER

0

9  
AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

2,926,514

10  
CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES\*

[ ]

11  
PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

1.5%

12  
TYPE OF REPORTING PERSON\*

OO

CUSIP No. 51655R101

Explanatory Note

Item 1.  
(a)  
Name of Issuer: LanzaTech Global, Inc.

(b)  
Address of Issuer's Principal Executive Offices:  
  
8045 Lamon Avenue, Suite 400, Skokie, Illinois 60077

Item 2.  
(a)  
Name of Person Filing:  
This statement is filed by:

(i) Atalaya Capital Management LP  
(ii) ACM ARRT H LLC

(b) Address of Principal Business Office or if none, Residence:  
  
One Rockefeller Plaza, 32nd Floor  
New York, NY 10020

(c)  
Citizenship:  
  
Atalaya Capital Management LP - Delaware  
ACM ARRT H LLC - Delaware

(d)  
Title of Class of Securities: common stock, par value \$0.0001 per share

(e)  
CUSIP Number: 51655R101

Item 3.  
Not Applicable

Item 4. Ownership.

(a)  
Amount Beneficially Owned:

Atalaya Capital Management LP - 2,926,514. Consists of 2,926,514 shares of common stock owned by ACM ARRT. ACM has the power to vote and direct the disposition of all shares of common stock held by ACM ARRT.

ACM ARRT H LLC - 2,926,514

CUSIP No. 51655R101

(b)  
Percent of Class:

Atalaya Capital Management LP - 1.5%  
ACM ARRT H LLC - 1.5%

The foregoing percentages are based on 196,222,737 shares of common stock

outstanding as of February 8, 2023 as reported on the issuer's Registration Statement on Form S-1 filed with the SEC on February 13, 2023.

(c) Number of shares as to which such person has:

(i) sole power to vote or to direct the vote:

Atalaya Capital Management LP - 2,926,514. Consists of 2,926,514 shares of common stock owned by ACM ARRT. ACM has the power to vote and direct the disposition of all shares of common stock held by ACM ARRT.

ACM ARRT H LLC - 2,926,514

(ii) shared power to vote or to direct the vote:

Atalaya Capital Management LP - 0.  
ACM ARRT H LLC - 0

(iii) sole power to dispose or to direct the disposition of:

Atalaya Capital Management LP- 2,926,514. Consists of 2,926,514 shares of common stock owned by ACM ARRT. ACM has the power to vote and direct the disposition of all shares of common stock held by ACM ARRT.

ACM ARRT H LLC - 2,926,514

(iv) shared power to dispose or to direct the disposition of:

Atalaya Capital Management LP - 0.  
ACM ARRT H LLC - 0

CUSIP No. 51655R101

Item 5.

Ownership of Five Percent or Less of a Class: Ownership of Five Percent or Less of a Class: If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than 5 percent of the class of securities, check the following [X].

Item 6.

Ownership of More than Five Percent on Behalf of Another Person: Not Applicable

Item 7.

Identification and Classification of Subsidiary Which Acquired the Securities: Not Applicable

Item 8.

Identification and Classification of Members of the Group: Not Applicable

Item 9.

Notice of Dissolution of Group: Not Applicable

Item 10.

Certifications: By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect, other than activities solely in connection with a nomination under 240.14a-11.

CUSIP No. 51655R101

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

February 14, 2023

ATALAYA CAPITAL MANAGEMENT LP

By: /s/ Drew Phillips  
Name: Drew Phillips  
Title: Authorized Signatory

ACM ARRT H LLC

By: /s/ Drew Phillips  
Name: Drew Phillips  
Title: Authorized Signatory

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative other than an executive officer or general partner of the filing person, evidence of the representative's authority to sign on behalf of such person shall be filed with the statement, Provided, however, That a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

CUSIP No. 51655R101

EXHIBIT 1  
JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, the undersigned agree to the joint filing on behalf of each of them of a Statement on Schedule 13G (including any and all amendments thereto) with respect to the shares of common stock of LanzaTech Global, Inc., a Delaware corporation, and further agree that this Joint Filing Agreement shall be included as an Exhibit to such joint filings.

The undersigned further agree that each party hereto is responsible for the timely filing of such Statement on Schedule 13G and any amendments thereto, and for the accuracy and completeness of the information concerning such party contained therein; provided, however, that no party is responsible for the accuracy or completeness of the information concerning any other party, unless such party knows or has reason to believe that such information is inaccurate.

This Joint Filing Agreement may be signed in counterparts with the same effect as if the signature on each counterpart were upon the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this agreement as of February 14, 2023.

ATALAYA CAPITAL MANAGEMENT LP

By: /s/ Drew Phillips  
Name: Drew Phillips  
Title: Authorized Signatory

ACM ARRT H LLC

By: /s/ Drew Phillips  
Name: Drew Phillips  
Title: Authorized Signatory